

Some Theoretical Consequences of Case-marking in Japanese

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University of Connecticut, 2011

This thesis is a theoretical investigation of the status of *phases* within the phase theory with a particular emphasis on several constructions in Japanese and other languages that involve Case. I argue for a contextual approach to phases, where Case determines the relevant context for phasehood.

In chapter 2 I argue that phases are determined by Case-valuation based on an analysis of the scope puzzle with Nominative/Accusative conversion in Japanese. Armed with a phase-based analysis QR, I argue that the scope puzzle is best accounted for if phases are determined by Case-valuation. The crucial observation in this chapter is that vPs with a full set of argument structure whose head is not involved in Case-valuation do not constitute phases. In chapter 3 I extend the Case/phase hypothesis proposed in chapter 2 to various phenomena in Japanese and other languages and explore the possibility that all major projections (CPs, NPs, PPs, APs) work as phases only when their heads are involved in Case-valuation. I discuss (i) A-movement out of CPs, which I argue is possible only in certain contexts, (ii) extraction out of Traditional Noun Phrases, (ii) extraction out of PPs, and (iv) Government Transparency Corollary (GTC) effects (Baker 1988). In chapter 4 I discuss NP-ellipsis in Japanese. I propose a phasal reinterpretation of Saito and Murasugi's (1990)/Lobeck's (1990) claim that functional categories allow ellipsis of their complements only under Spec-Head agreement. This chapter also provides evidence that Japanese lacks D, as proposed by Fukui (1986, 1988) and Bošković (2008, 2010a, 2010b), among others. I develop an analysis in which a head that bears a case-particle (K) is a phase head, which licenses ellipsis of its NP-complement under certain conditions. In chapter 5 I discuss restructuring infinitives in Japanese and show that there is a general ban on adjunction to complements of lexical restructuring verbs, which is best explained by an interaction of contextual emergence of phases and Case feature checking. It is also shown that this ban regulates adverb insertion, adjective insertion, and quantifier raising.

Some Theoretical Consequences of Case-marking in Japanese

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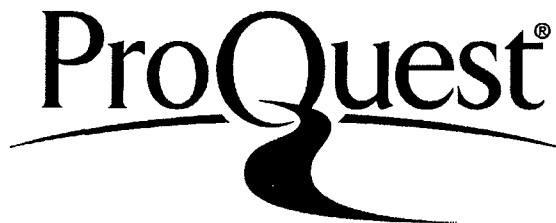
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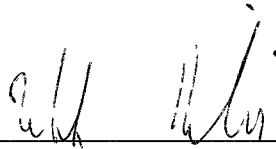
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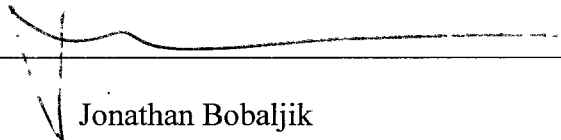
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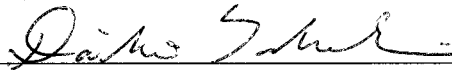
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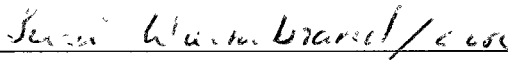
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Chapter 1: Introduction

This thesis is a theoretical investigation of the status of *phases* within the phase theory (see Chomsky 2000, 2001, 2004, 2008, for example) with a particular emphasis on several constructions in Japanese and other languages that involve Case.

Departing from the Y-model of grammar assumed in early minimalism (Chomsky 1993, 1995), where transfer to the Conceptual-Intentional (C-I) and Sensory-Motor (S-M) interfaces takes place only once in the course of the derivation, Chomsky (2000, 2001, 2004, 2008) suggests that derivation proceeds in small chunks, which Chomsky calls *phases*. Phases are defined over lexical subarrays, which are subsets of arrays selected from the lexicon. Under this phase-based derivation, once a phase is created by exhausting a lexical array, a subpart of phase is transferred to the C-I and S-M interfaces.¹ This means that transfer to the interfaces takes place multiple times in the course of the derivation (see Uriagereka 1999).

The general motivation for phases is the reduction of computational burden. Once a phase is created and (much of) the phase is transferred to the C-I and S-M interfaces, the computational component has no access to the syntactic object that is sent to the interfaces. This means that the computational component only “carries” a small portion of the entire syntactic object, that is, the part of the entire syntactic object that has not been sent to the interfaces. This significantly reduces the burden on the computational component.

How do we determine phases? For Chomsky (2000, 2001, 2004, 2008), phases are “propositional” units such as *v*Ps and CPs.² Then, each lexical subarray contains *v* or C.

¹ Chomsky proposes that complements of phase heads are transferred to the interfaces. See chapter 2.

² See Bošković 2002 and Boeckx and Grohman (2007) for critical discussion of the propositional

Significantly, for Chomsky (2000, 2001, 2004, 2008), vPs and CPs are *always* phases. I will call Chomsky's approach to phases *rigid approach to phases*, where certain categories are always phases. On the other hand, there are a number of works that claim that phases are determined contextually, which means that whether or not a particular projection counts as a phase or not depends on the syntactic context where it is found (see Bobaljik and Wurmbrand 2005, Bošković 2010a, den Dikken 2007, Gallego 2007, and Gallego and Uriagereka 2007, among others). I will call this latter approach to phases *contextual approach to phases*. Throughout the thesis, I will provide evidence for the latter approach to phases. Specifically, I argue that Case determines the relevant context for phasehood. This thus strengthens the role of Case in the syntax: Case has played a significant role in determining the distribution of NPs in syntax (see below); I argue that Case also plays a crucial role in transferring syntactic objects to the interfaces.

The status of Case has been an intensive topic of discussion since Vergnaud's (1977/2006) seminal letter written as a response to Chomsky and Lasnik (1977), where it was suggested that abstract Case determines the distribution of NPs in syntax, which is the root of the theory of Case-checking/valuation within the Minimalist Program.

Thus, Chomsky (1980, 1981), adopts the Case Filter, the basic idea for which can be traced back to Vergnaud (1977/2006):

- (1) *NP if NP has phonetic content and has no Case (Chomsky 1981: 49)

The Case Filter explains the distribution of NPs in tandem with the following independently motivated assumptions regarding Case-assignment in English:

definition of phases. See also chapter 2.

- (2) a. NP is oblique when governed by P;
 b. NP is objective when governed by V;
 c. NP is nominative when governed by Tense.

Let us consider how (1) and (2) work with respect to the following passive sentence:

- (3) John_i was hit *t*_i

Here the NP *John* originates in the object position and moves to Spec, TP, leaving a trace (*t*) in its base-generated position. There are two NPs to consider with respect to the Case Filter in (3): *John* and *t*. *John* satisfies the Case Filter because finite T can assign Case to *John* (*John* is governed by Tense (cf. (2c)). On the other hand, the trace in the object position does not get Case because the verb is a passive form, which does not assign Case. However, note that the Case Filter in (1) applies only to NPs with phonetic content hence the trace, which has no phonological content, does not violate the Case Filter in (1).³ Another way of looking at (3), then, is that *John* was generated in a Case-less position and then moves in order to get Case-licensed.

Case played an important role in early minimalism (Chomsky 1993, 1995) as well, where the Case Filter was implemented in terms of feature checking. In early Minimalism, where Case is expressed in terms of uninterpretable features, an NP and a functional head that licenses Case must enter into a local checking relation (see Chomsky 1993, 1995 for details). (3) is then be analyzed as follows:

³ On the other hand, (i) is ruled out because *John* is not Case-licensed:

(i) *It was hit John.

(4) [TP John_i [_{HNOM}] T [_{HNOM}] [EPP] [VP was hit *t_i*]]

Here *John*, which has an uninterpretable nominative Case feature, moves to Spec, TP, and the nominative Case-features on T and *John* undergo feature checking in a local (Spec-Head) relation (i.e. *John* is in the checking domain of T. See Chomsky (1993, 1995) for the definition of checking domain). As a result, both of the features are deleted (both Case-features are uninterpretable).

While Case undoubtedly played an important role in the GB-era and in early minimalism, there has been a certain “decline” in the role of Case in recent developments.⁴ This can be illustrated with the following quote from Chomsky (2000):

“... structural Case is demoted in significance. The Case-filter still functions indirectly in the manner of Vergnaud’s original proposal, to determine the distribution of noun phrases. But what matters primarily are the probes, including ϕ -features of T and ν ... operations are not induced by Case-checking requirements ... uninterpretable [Case] features activate the goal of a probe, allowing it to implement the operation. ”

(Chomsky 2000:127 [] inserted by MT)

While Chomsky admits that Case does play a significant role in determining the distribution of NPs, the role of Case is hidden here when compared with the implementations of the Case Filter in the GB era and early Minimalism. Chomsky (2000) proposes that Case-features are required only to activate NPs so that the NPs can participate in phi feature checking and undergo EPP-driven movement. The relevant

⁴ There is also a line of research originating with Marantz (1991), where the syntactic Case theory is essentially abandoned and Case realization of NPs is determined post-syntactically.

condition is referred to as the Activation Condition, which states that elements that undergo Agree or Move must have an uninterpretable feature. Under this proposal, the passive sentence in (3) is analyzed in the following way:

- (5) a. $[T_{[u\phi]} [EPP] \longrightarrow John_{[i\phi] \{uCASE\}}]$
 b. $[TP John_i [i\phi] [uCASE] T_{[u\phi]} [EPP] t_i]$

T has uninterpretable phi-features, which search for matching phi-features (cf. (5a)). NP *John*, which has interpretable phi-features, can enter into a phi-feature checking relation with T because the former has an unchecked Case-feature (cf. (5a)). The phi-features of T is now successfully checked and erased. *John* also moves to TP, Spec to check the EPP feature on T, this movement being possible because, having an unchecked Case-feature, *John* is active for movement⁵ As a result of all of this, the Case feature of *John* is erased. The role of Case is in a sense hidden in this system; while Case does not drive phi-feature checking or A-movement, neither is actually possible without Case.

While the role of Case is hidden in Chomsky (2000, 2001, 2004, 2008), as reviewed above, Bošković (2007a) makes explicit the role of Case in syntax. In particular, Bošković (2007a) argues that it is the uninterpretable Case feature of the NP that drives A-movement. Under Bošković's system, the passive sentence in (3) is analyzed in the following way:

- (6) a. $[T \quad John \quad]$ b. $[TP \quad John_i \quad T \quad t_i$
 $[K] \quad u[K] \quad \bar{u}[K] \quad [K]$

⁵ There are differences in technical details in Chomsky (2000) and Chomsky (2001, 2004, 2008). But the differences do not concern us here.

uK in (6) is an uninterpretable Case feature. Bošković (2007a) argues that an uninterpretable feature (i.e. uK) works as a probe only when the feature c-commands its checker (Epstein and Seely 1999). Given this, the NP *John*, which bears an uninterpretable Case-feature in (6a), must move to Spec, TP to c-command T so that *John*'s uK can work as a probe ((6b)). Bošković's (2007a) system makes the implementation of the Case Filter close to the original one: NPs move for Case.⁶

This thesis will contribute to this line of research which emphasizes the role of Case in the syntax. In particular, I will argue that Case-valuation determines phases, that Case restricts adjunction, and that Case is crucially involved in NP-ellipsis in Japanese. The thesis thus as a whole provides an argument that Case plays a significant role in the syntax. I will provide a brief overview of the thesis in the following section.

In chapter 2 I will argue, based on a particular analysis of the scope puzzle in Nominative/Accusative conversion in Japanese, that phases are determined by Case-valuation. I will show that the puzzle is best accounted for by postulating QR, which is bound by domains of Case-valuation. Based on an observation that scope of QR is phase-bound, I will conclude that phases are determined via Case-valuation. A particularly important observation in this chapter is that *v*Ps with a full set of argument structure (introducing an external theta-role) whose head is not involved in Case-valuation do not constitute phases. This contrasts with Chomsky's rigid approach to phases where *v*Ps are always phases. The analysis proposed in this chapter will also be shown to have implications for the landing site of short scrambling.

In chapter 3 I will extend the Case/phase hypothesis proposed in chapter 2 to various

⁶ Note that Bošković (2007a) dispenses with the EPP; Case is the sole reason for the movement of *John* in (6) (see also Epstein and Seely 1999).

phenomena in Japanese and other languages and explore the possibility that all major projections (CPs, NPs, PPs, APs) work as phases only when their heads are involved in Case-valuation. I will start with a discussion of A-movement out of CPs, which will be shown to be possible but only in a well-defined context. I will show that this is exactly what is predicted under the Case/phase hypothesis proposed in Chapter 2. I will then extend the discussion to extraction out of Traditional Noun Phrases in various languages as well as extraction out of PPs, showing that Case plays a crucial role in accounting for the observed patterns. I will also discuss Government Transparency Corollary (GTC) effects (Baker 1988) and show that the GTC effects can be deduced in a principled way under the Case/phase theory.

In chapter 4 I will discuss NP-ellipsis in Japanese. In particular, I will propose a phasal reinterpretation of Saito and Murasugi's (1990)/Lobeck's (1990) claim that functional categories allow ellipsis of their complements only under Spec-Head agreement. This chapter will also provide evidence that Japanese lacks D, as proposed by Fukui (1986, 1988) and Bošković (2008, 2010a, 2010b), among others. I will first show that genitive remnants of NP-ellipsis (formerly called N' ellipsis) in Japanese are all adjuncts. I will then develop an analysis in which a head that bears a case-particle (K) is a phase head, which makes ellipsis of its NP-complement possible under certain conditions. Ellipsis of the complement of the Case head is the phasal reinterpretation of traditional NP/N' ellipsis.

In chapter 5 I will provide additional evidence that vP is not a phase when v does not assign Case. Furthermore, I will suggest another way of creating phases contextually, which provides another argument for the contextual approach to phases. Furthermore, I will show that adjunction is constrained by Case. The focus of the discussion in this

chapter will be on restructuring infinitives. I will argue that there is a general ban on adjunction to complements of lexical restructuring verbs, which is best explained by an interaction of contextual emergence of phases and Case feature checking. It will also be shown that this ban regulates adverb insertion, adjective insertion, and quantifier raising.

Chapter 2: Case-valuation, Phases, and Nominative/Accusative Conversion in Japanese¹

2.1 Introduction

One of the central issues in the Minimalist Program (Chomsky 1995, 2000, 2001, 2004, 2008) is how narrow syntax interacts with the two interfaces. Chomsky (2000, 2001, 2004, 2008) suggests that derivation proceeds in a phase-by-phase manner (see also Uriagereka 1999). Then, once a particular syntactic domain is created, it is sent to the PF/LF interfaces for interpretation. However, the exact definition of phases is still controversial. Chomsky (2000, 2001, 2004, 2008) defines phases as ‘propositional’ units, i.e. *v*P and CP. More precisely, Chomsky (2000, pp. 106) defines phases as syntactic objects derived by a choice of lexical subarray, where lexical arrays that contain an occurrence of C or *v* determine phasehood. However, there have been several criticisms of this definition and several alternative definitions have been proposed (see Boeckx and Grohmann 2007, Bošković 2002, den Dikken 2007, Epstein et al. 2010, to appear and Epstein and Seely 2002, 2006, among others). The purpose of this chapter is to argue for a specific interpretation of phases. More precisely, I argue that phases are created via Case-valuation. The discussion in this chapter concerns what I call the Nominative/Accusative conversion in Japanese.

It is well-known that objects in Japanese can be marked either with nominative Case or accusative Case when a verb is accompanied by a potential affix, which is specified [+stative] (see Kuno 1973 and Kuroda 1965). Consider the following examples:

¹ This chapter is a substantially revised version of Takahashi (2010a).

- (1) a. Taro_o-ga migime-o [^] tumur-e-ru.
 Taro-Nom right.ey_e-Acc close-can-Pres
 ‘Taro can close his right eye.’
- b. Taro_o-ga migime-ga tumur-e-ru.
 Taro-Nom right.ey_e-Nom close-can-Pres
 ‘Taro can close his right eye.’
- c. Taro_o-ga migime-o/*-ga tumu-ru.
 Taro-Nom right.ey_e-Acc/*Nom close-Pres
 ‘Taro closes his right eye.’

In (1a) and (1b), the verb *tumur* ‘close’ is accompanied by the potential affix *-e* ‘can’. Note that, as shown in (1b), the nominative object is disallowed if the only predicate is *tumur* ‘close’, which is [-stative]. The potential construction has been extensively discussed in the literature (see Bobaljik and Wurmbrand 2005, 2007, Dubinsky 1992, Kishimoto 2001, Koizumi 1994a, 1995, 1998, Kubo 1992, Morikawa 1993, Niinuma 1999, Nomura 2003, 2005a, 2005b, Saito 1982, 2000, 2010a, Saito and Hoshi 1998, Sugioka 1984, Tada 1992, 1993, Takano 2003, Takezawa 1987, Ura 1996, 1999, 2000, Yatsushiro 1999, Wurmbrand 2001, Zushi 1995, 2008 among many others). Interestingly, accusative and nominative objects show different behavior with respect to scope. Some examples are given below:²

² The relevant data were first observed by Sano (1985), where it is noted that scope of objects interacts with potential verbs (see also Tada 1992, 1993). Koizumi (1994a, 1995, 1998) observes that scope of objects also interacts with negation (see also Nomura 2003, 2005a, 2005b).

- (2) a. John-ga migime-dake-o tumur-e-ru.
 John-Nom right.eye-only-Acc close-can-Pres
 ‘John can close only his right eye.’ (?*only > can, can > only)
 ‘It is only his right eye that John can close.’ (?*only > can)
 ‘John can wink his right eye.’ (can > only)
- b. John-ga migime-dake-ga tumur-e-ru.
 John-Nom right.eye-only-Nom close-can-Pres
 ‘John can close only his right eye.’ (only > can, *can > only)
 ‘It is only his right eye that John can close.’ (only > can)
 ‘John can wink his right eye.’ (*can > only)
- (Tada 1992: 94)

In both examples, the verb *tumur* ‘close’ is accompanied by the potential affix *-e* ‘can’. In (2a), the object *migime* ‘right-eye’ is marked accusative and it takes scope under the potential affix. On the other hand, in (2b), the object is marked nominative and it takes scope over the potential affix (but see the next section).

Since Sano’s (1985) seminal work, this scope alternation has been a topic of intensive discussion in Japanese syntax (see Koizumi 2008 for an overview). After Tada’s (1992) work on nominative objects, the basic idea behind the recent literature on this scope shift has been to connect it to the mechanism of Case-checking (see Tada 1992, 1993, Koizumi 1994a, 1995, 1998, Niinuma 1999, Nomura 2003, 2005a, 2005b, Ura 1996, 1999, 2000, and Zushi 1995, among others). However, it has also been independently claimed that *dake* ‘only’ undergoes a QR-like operation (see Aoyagi 1998,

2006, Futagi 2004, Harada and Noguchi 1992, Sano 1985, and Shoji 1986, among others). Assuming QR of *dake* ‘only’, Bobaljik and Wurmbrand (2007) suggest a novel solution to the scope puzzle in the Nominative/Accusative conversion based on their analysis of restructuring infinitives (QR/VP analysis).³ In this chapter, further developing this line of approach, I argue that QR of *dake* ‘only’ cannot take place across the domain of Case-valuation. This hybrid QR/Case approach will be shown to explain the data in question in a principled way. I also show that the account overcomes several problems that arise under alternative analyses. Significantly, since we have independent evidence that the scope of *dake* ‘only’ is phase-bounded (see section 4), I conclude that phases are created via Case-valuation. This suggests that phases are not determined intrinsically, rather, they are determined contextually (see Bobaljik and Wurmbrand 2005, Bošković 2010a, den Dikken 2007, Gallego 2007, and Gallego and Uriagereka 2007). That phases are determined by Case-valuation and that they are determined contextually are in fact the main conclusions of this thesis. This chapter contains initial discussion, which focuses on the phasehood of vP. In the subsequent chapters, the conclusions will be extended to all other phases.

The chapter is organized as follows. In section 2, I discuss the scope facts regarding accusative and nominative objects and identify the data to be discussed in this chapter. In section 3, I provide a detailed review of the previous proposals and show that none of them are satisfactory. Then, in section 4, I introduce the QR-analysis of *dake* ‘only’ and show that this QR is phase-bounded. In section 5, I give an analysis of the scope shift in the Nominative/Accusative conversion in Japanese based on the observations made in section 4 and section 5. In section 6, I discuss some consequences of the present analysis.

³ For a somewhat similar analysis which also relies on covert A'-movement (though not QR), see Saito (2010a), which I became aware of only after this chapter was originally written.

Section 7 is the conclusion of the present study.

2.2 Scope facts of accusative and nominative objects

In this section, I discuss the scope facts of accusative and nominative objects. In particular, building on Nomura's (2003, 2005a, 2005b) observations, I identify the data to be explained in this chapter. Consider again the following data:

- | | | | |
|--------|--------------------------------------|--------------------|----------------------------|
| (3) a. | John-ga | migime-dake-o | tumur-e-ru. |
| | John-Nom | right.eye-only-Acc | close-can-Pres |
| | 'John can close only his right eye.' | | (?*only > can, can > only) |
| b. | John-ga | migime-dake-ga | tumur-e-ru. |
| | John-Nom | right.eye-only-Nom | close-can-Pres |
| | 'John can close only his right eye.' | | (only > can *can > only) |

The accusative object in (3a) takes scope under the potential affix. It is noted by Koizumi (1994a, 1995, 1998) that the accusative object can marginally take scope over the potential affix if it receives emphatic stress. I will mostly disregard this stress effect in the present study, addressing it briefly in section. 6.5. On the other hand, the nominative object in (3b) can take scope over the potential affix without additional stress on the object. Many works, including Tada (1992, 1993), Koizumi (1994a, 1995, 1998), Niinuma (1999), Ura (1996, 1999, 2000), assume that (3b) is unambiguous. However, Nomura (2003, 2005a, 2005b) points out that examples of this kind allow narrow scope of the object when an appropriate context is provided. Consider the following example from Nomura (2005a):

- (4) Taro-ga koyubi-dake-ga mage-rare-ru no-wa
 Taro-Nom pinkie-only-Nom crook-can-Pres that-Top
 sit-te-ita-ga, (kare-ga) kusuriyubi-dake-ga
 know-Prog-Past-but, (he-Nom) ring.finger-only-Nom
 mage-rare-ru no-ni-wa odoroi-ita.
 crook-can-Pres that-Dat-Top surprise-Past
 ‘I have known that Taro can crook only his pinkie but I am surprised that
 he can also crook only his ring finger.’ (Nomura 2005a: 176)

Here, the nominative object takes scope under the potential morpheme *–rare* ‘can’. Like Nomura, the speakers I have consulted find the example acceptable. In light of this, I will assume that nominative objects can take narrow scope with respect to the potential morpheme.⁴ Nomura (2005a, 2005b) also discusses scopal interaction between nominative objects, potential verbs, and negation. He provides another set of data to illustrate the above point. Consider the following data:

- (5) Context [Context 4 in Nomura (2005a)]:
 John has a white bookshelf and he does not want it to be orange colored. He
 has two different color paints, red and yellow (Mixing red and yellow will
 yield orange). (Nomura 2005a: 183)

⁴ Note, however, that the major concern of this article is the lack of wide scope for the object in (3a), which contrasts with (3b) in this respect.

- (6) John-wa subete-no iro-ga tuka-e-na-i.
 John-Top all-Gen color-Nom use-can-Neg-Pres
 ‘John cannot use every color.’ (Nomura 2005a: 184)

There are three potential LF representations for this sentence, which are given below:

- (7) a. all > not > can: For every color x, John cannot use x.
 b. not > all > can: It is not the case that for every color x, John can use x.
 c. not > can > all: It is not possible for John to use all the colors.
 (Koizumi 2008: 153)

Nomura (2005a, 2005b) discusses whether (6) is felicitous with the interpretations given in (7). (7a) states that there should not be any colors for John to use. This statement is false because John can use a non-orange color. (7b) denies that John can use any color. This statement is false too because John can use any color. (7c) denies that the desired result is obtained if we use all the color. Given that orange is obtained by the mixture of red and yellow, (7c) is the only possible interpretation for (6) under the context given in (5). Importantly, in (7c), the nominative object takes scope under the potential morpheme (and negation). The data thus provides another piece of evidence for the availability of narrow scope of nominative objects. The data we need to account for is summarized below:

(8)	Case of object	can > only	only > can
	ACC	√	*
	NOM	√	√

While examples with accusative objects are unambiguous, those with nominative objects are ambiguous. However, it is true that there is a strong preference for the wide scope interpretation of nominative objects, which seems to have masked the narrow scope interpretation of nominative objects. Koizumi (2008) suggests that the preference is due to pragmatic reasons. In particular, Koizumi (2008) suggests that Grice's (1975) maxim 'avoid ambiguity' is at work here. As discussed above, accusative objects must take scope under potential verbs while nominative objects can take scope either over or under potential verbs. When a speaker wants to express the narrow scope reading of objects, the speaker then chooses an accusative object because it is unambiguous. In other words, the availability of an unambiguous alternative with an accusative object makes the narrow scope reading of a nominative object dispreferred (see also Nomura 2005a, 2005b for discussion).

To sum up, I have discussed the scope facts with accusative and nominative objects. While accusative objects must take scope under the potential morpheme, nominative objects can take scope either over or under the potential morpheme.

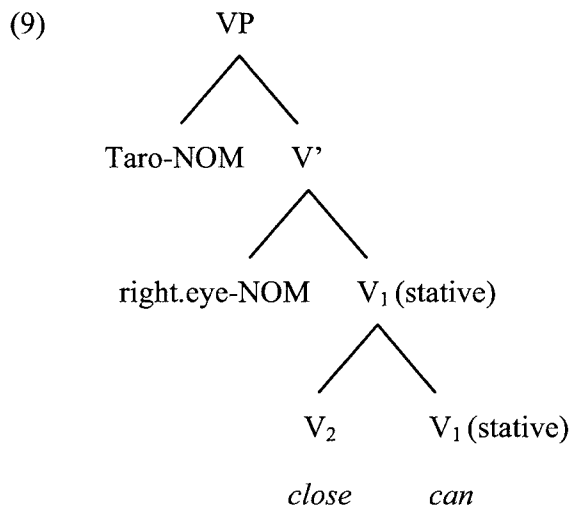
2.3 Previous analyses

In this section, I discuss previous approaches to the scope facts of the Nominative/Accusative conversion in Japanese. In particular, I discuss four major analyses proposed in the literature: the complex head analysis (see Saito and Hoshi 1998

and Saito 2000), the prolepsis analysis (Takano 2003), the Case-movement analysis, and the QR/VP analysis (Bobaljik and Wurmbrand 2007). I show that none of them is satisfactory. In particular, I show that (i) the scope data must be explained in terms of movement, (ii) Case is not the *direct* trigger of the movement in question, and (iii) structural differences in restructuring infinitives are not the source of the scope alternation.⁵

2.3.1 Complex head analysis/prolepsis analysis

In the complex head analysis and the prolepsis analysis of the nominative object construction, nominative objects are base-generated above the potential suffix (see Saito 2000 and Saito and Hoshi 1998 for the complex head analysis and Takano 2003 for the prolepsis analysis). For example, Saito and Hoshi (1998) propose the following structure for complex predicates with nominative objects:⁶

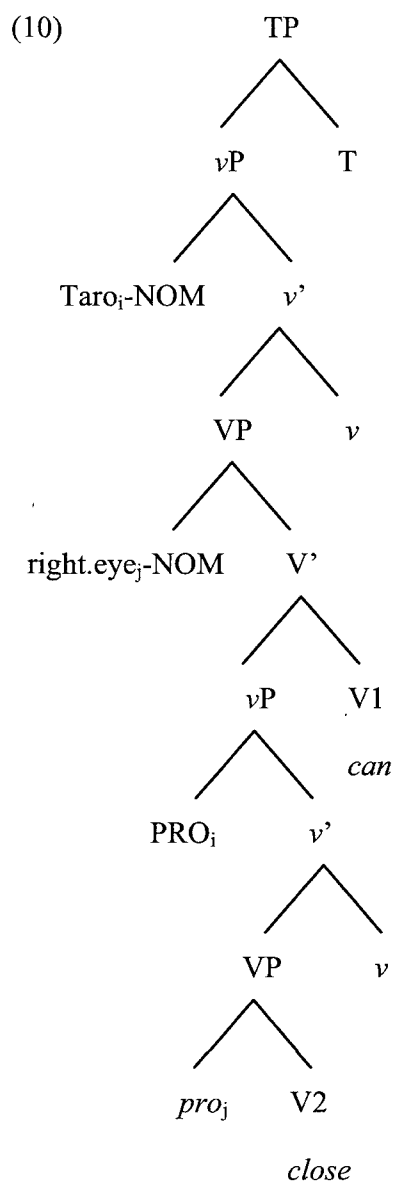


⁵ See also Saito (2010a) for much relevant discussion. The discussion in this section is consistent with the discussion in that work.

⁶ See also Bobaljik and Wurmbrand (2007) for arguments against the complex-head analysis.

Here, the nominative object *right eye* is base-generated above the projection of the verbal complex formed in the syntax, thereby taking scope over the potential suffix.

Takano's (2003) prolepsis analysis assumes the following structure for the nominative object construction:



Although these analyses are quite intriguing, both of these analyses predict that nominative objects should not take scope under potential verbs. This prediction is not borne out. Consider again the example (4), repeated in (11):

- Here, the nominative object takes scope under the potential verb. This indicates that the structure proposed by Saito and Hoshi (1998) and Takano (2003) cannot be correct.

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above is to assume movement of nominative objects. Different scope relations then result from this movement. Therefore, I assume that nominative objects in Japanese move from their base positions and basically follow the structure of complex predicates proposed by many researchers, including Koizumi (1994a, 1995, 1998), and especially, Ura (1996, 1999, 2000).

2.3.2 Case-movement analysis

Another approach to the scope of nominative objects is the Case-driven A-movement analysis (see Kishimoto 2001, Koizumi 1994a, 1995, 1998, Niinuma 1999, Nomura 2003, 2005a, 2005b, Tada 1992, 1993, Ura 1996, 1999, 2000, and Zushi 1995, among others).⁷ Consider the following derivation proposed by Koizumi (1994a, 1995, 1998):

(12) Case-movement Analysis (Irrelevant parts omitted)

[_{TP} Sub]_{NOM} OBJ_{kNOM} [_{VP} [_{VP} *t_k* V] *can*] T]

Here, the nominative object, as well as the nominative subject, moves to the Spec, TP.

As the potential verb is below TP, the nominative object takes scope over it.⁸

A problem with this approach is that elements that do not bear structural Case show the same contrast, as illustrated in (13-18):⁹

⁷ Tada (1992, 1993) argues that the nominative object moves to the Spec of AGRo. However, this analysis wrongly predicts that it cannot take scope over negation. See Koizumi (1994a, 1995, 1998) and Nomura (2003, 2005a 2005b) for this point.

⁸ Nomura (2003, 2005a, 2005b) suggests that the movement is optional.

⁹ Somewhat similar examples are discussed by Saito and Hoshi (1998), Saito (2000), and Takano (2003). Their examples will be discussed in Sect. 2.6.5.

- (13) a. Taro-ga sakana-ga koshoo-dake-de tabe-rare-ru.
 Taro-Nom fish-Nom pepper-only-with eat-can-Pres
 ‘Taro can eat fish with only pepper.’ (only > can, ?can > only)
 ‘It is only pepper that Taro can eat fish with.’ (only > can)
 ‘Taro can eat fish with only pepper and nothing else.’ (?can > only)
- b. Taro-ga sakana-o koshoo-dake-de tabe-rare-ru.
 Taro-Nom fish-Acc pepper-only-with eat-can-Pres
 ‘Taro can eat fish with only pepper.’ (?*only > can, can > only)
 ‘It is only pepper that Taro can eat fish with.’ (?*only > can)
 ‘Taro can eat fish with only pepper and nothing else.’ (can > only)

In (13a), the object is marked nominative and *dake* ‘only’ is attached to *koshoo* ‘pepper’, which is accompanied by a postposition *-de* ‘with’. Here, *dake* ‘only’ can take scope either under or above the potential affix. In (13b), the object is marked accusative and again, *dake* ‘only’ is attached to *koshoo* ‘pepper’. Here, *dake* ‘only’ can take scope only under the potential affix. As these PPs do not have structural Case, the above data conclusively show that the Case-movement analysis cannot account for the scope shift in the Nominative/Accusative conversion.

2.3.3 QR/VP analysis

Bobaljik and Wurmbrand (2007) suggest an intriguing solution to the scope puzzle. Assuming that *dake* ‘only’ undergoes QR (see Aoyagi 1998, 2006, Futagi 2004, Goro 2007, Harada and Noguchi 1992, Shoji 1986, and Sano 1985, among others), they attribute the scope puzzle to a structural difference between the two constructions. They

suggest that *dake* ‘only’ takes scope over the potential verb when the object is nominative because the nominative object construction lacks a *vP* complement (Wurmbrand 2001) and QR of *dake* targets only propositional nodes.¹⁰ *Dake* takes scope under the potential verb if the object is marked accusative because the potential morpheme takes *vP* as its complement. Consider (14):

- (14) a. [TP Subj_iNOM [_{canP} *t_i* [vP PRO [VP OBJ_{ACC} PP (only)V] *v*] *can*] T]
 b. [TP Subj_iNOM [_{canP} *t_i* [VP OBJ_{NOM} PP(only) V] *can*] T]

When the object is marked accusative, as in (14a), the potential verb takes a *vP* complement. *Dake* adjoins to this *vP*, taking scope under the potential verb. When the object is marked nominative, as in (14b), *dake* in the adjunct must adjoin to the projection headed by the potential verb because the complement of the potential verb is VP.

This analysis elegantly accommodates the adjunct puzzle, which presented a problem for the Case-movement analysis. Nevertheless, there are some data that show that (at least some instances of) the nominative object construction do have *vP*. The causative construction confirms this point. Consider first (15):

- (15) Taro-ga Hanako-ni hon-o sute-sase-ta.
 Taro-Nom Hanako-Dat book-Acc discard-make-Past
 ‘Taro made Hanako discard a book.’

The example in (16) provides evidence that the complement of *sase* ‘cause’ is a clausal

¹⁰ See also Goro (2007).

vP:

- (16) Taroo_j-ga Hanako_i-ni zibun_{j/i}-no hon-o sute-sase-ta.
Taroo_j-Nom Hanako_i-Dat self_{j/i}-Gen book-Acc discard-cause-Past
'Taro made Hanako discard his/her book.'

In (16), the reflexive *zibun* 'self' can refer to either *Hanako* or *Taroo*. Given the standard assumption that *zibun* is subject-oriented, the above data indicate that there are two clauses here: the matrix clause and the embedded clause (see Kuno 1973 and Kuroda 1965). Following Harley (2008), Murasugi and Hashimoto (2004) and Saito (2006a), among others, I then assume that complement clauses of causative constructions are vPs. Consider now (17):

- (17) a. Taroo_j-ga Hanako_i-ni zibun_{j/i}-no migite-dake-ga
Taroo_j-Nom Hanako_i-Dat self_{j/i}-Gen right.hand-only-Nom
age-sase-rare-ta.
raise-cause-can-Past
'Taro could make Hanako raise only his/her right hand.'
(only > can, can > only)
'It is only his/her right hand that Taro could make Hanako raise.'
(only > can)
'Taro could make Hanako raise only his/her right hand without raising
his/her left hand.'
(can > only)

- b. Taro_j-ga Hanako_i-ni zibun_{j/i}-no migite-dake-o
 Taro_j-Nom Hanako_i-Dat self_{j/i}-Gen right.hand-only-Acc
 age-sase-rare-ta.
 raise-cause-can-Past
 ‘Taro could make Hanako raise only his/her right hand.’
 (?*only > can, can > only)
 ‘It is only his/her right hand that Taro could make Hanako raise.’
 (?*only > can)
 ‘Taro could make Hanako raise only his/her right hand without raising
 his/her left hand.’
 (can > only)

Here, there are two heads that project their own phrases: the causative morpheme and the potential morpheme. The lower direct object *migite* ‘right hand’ can be marked either accusative or nominative (see Manning et al. 1999) and *zibun* ‘self’ can refer to either *Taro* or *Hanako*. This is an indication that the causative morpheme selects ν P, even when the object is nominative. Significantly, *dake* attached to the direct object can take scope over the potential affix if the object is marked nominative, but not if it is marked accusative. This indicates that whether there is a ν P projection or not does not affect the scope puzzle because in both (17a) and (17b) the potential morpheme selects the causative morpheme, which in turn takes ν P. Bobaljik and Wurmbrand’s (2007) analysis would incorrectly predict no scope contrast for these examples.

To summarize, I have shown that (i) the scope data should be explained in terms of movement, (ii) Case is not the *direct* trigger of the movement, and (iii) the potential verb takes ν P even when the embedded object is marked nominative. These facts indicate that

- (19) Someone thinks that John loves everyone. (some > every, *every > some)

This indicates that QR is ‘clause-bounded’. Even though their technical implementations differ in several respects, which do not concern us here, Cecchetto (2004) and Miyagawa (2011a) propose that this ‘clause-boundedness’ effect can be captured in terms of the phase theory advanced in Chomsky (2000, 2001, 2004, 2008) (see also Bošković 1998 for an alternative account based on Move F). Their claim is summarized below:

- (20) QR (quantifier raising) is a syntactic movement which obeys the *phase impenetrability condition*.¹¹

Chomsky (2000, 2001, 2004, 2008) proposes that derivations proceed in a ‘phase-by-phase’ manner, where the phase impenetrability condition (PIC) severely restricts access to syntactic objects in a lower phase. The PIC is stated as follows:

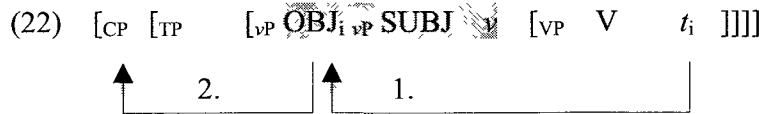
- (21) In phase α with head H, the domain of H is not accessible to operations outside α , only H and its edge are accessible to such operations (Chomsky 2000, pp. 108).¹²

I assume that edge positions are specifiers and adjuncts to a phase head. If vPs and CPs are phases, as proposed by Chomsky (2000, 2001, 2004, 2008), then every element that is

¹¹ See also Saito (2005) for a similar proposal.

¹² The PIC is implemented in different ways in Chomsky (2000) and Chomsky (2001). Cecchetto (2004) seems to assume a version of the PIC introduced in Chomsky (2001). I am here adopting the version of the PIC introduced in Chomsky (2000). The choice does not affect the discussion in this section.

to move outside of a νP or a CP must move via the edges of νP and CP. Consider the following derivation:



Suppose the object must move to the Spec, CP. The object first has to move to the νP Spec because νP is a phase. Otherwise, the object will not be accessible to C. After this movement, the object can move to the CP Spec, as the object is visible at the CP phase. I assume that QR targets nodes of type t within a phase (cf. Heim and Kratzer 1998).

Another issue which is relevant to the discussion in this chapter concerns the ‘motivation’ for QR. Fox (2000) proposes a condition on scope-shifting operations (scope economy), which roughly states that a quantifier can move over another quantifier only when the movement yields a new interpretation (see also Cecchetto 2004 and Miyagawa 2011a, for much relevant discussion). QR also takes place to resolve type-mismatch. For example, a universal quantifier is not interpretable when it appears in an object position. QR then takes place to adjoin this quantifier to a node of type t .

Let us now consider how these assumptions capture the basic paradigm introduced above. Consider first the following example:

- (23) a. Someone hates everyone. (some > every, every > some)
- b. $[_{CP} [_{TP} \text{SUBJ}_j [_{\nu P} \text{OBJ}_i \text{VP} [_{VP} V t_i]]]]$

Assuming that the trace of the subject can be used for quantifier interpretation (Hornstein

1995), the object takes scope over the subject because the former c-commands the trace of the latter after QR of the object to the νP (Johnson and Tomioka 1997). This movement is licensed both by scope economy (it yields the inverse reading) and type considerations (it resolves type-mismatch).

Let us now consider the example that does not show ambiguity. The example is repeated in (24) and its derivation is given in (25).

(24) Someone believes that John hates everyone. (some > every, *every > some)

(25) $[CP [TP [_{\nu P} SUBJ [CP \text{OBJ}_i [TP SUBJ_j [_{\nu P} \text{OBJ}_j [_{\nu P} t_j V [VP V t_i]]]]]]]]$

The object quantifier cannot directly move to the matrix νP due to the PIC, even though this movement would be licensed by scope economy. The object quantifier thus first moves to the νP edge. This is shown as Step 1. The second QR, that is, QR from the Spec, νP to the Spec, CP is not possible. This is so because the second QR is not motivated either by scope economy or type-consideration. There is no quantifier that the object quantifier can scopally interact with. Furthermore, there is no need for the quantifier to QR to resolve type-mismatch (it is already adjoined to the node of type t).

Let us now consider the following examples of English ECM:

(26) a. Someone believes that John hates everyone.

(some > every, *every > some)

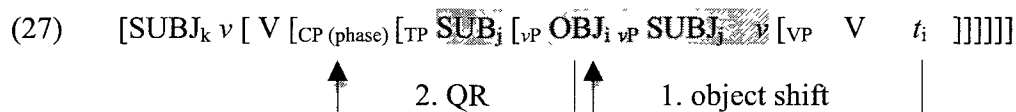
b. Someone believes John to hate everyone.

(some > every, every > some)

Bošković (1998: 12)

We have seen above how the fact that the embedded object cannot take scope over the matrix subject in (26a) can be accounted for.

Interestingly, in the ECM construction (cf.(26b)), the embedded object can take scope over the subject. This is potentially problematic because the account of (26a) presented in (25) seems to predict that the inverse reading should be impossible in (26b). That is, we seem to predict that the embedded quantifier should not be able to move from the embedded νP .¹³ To account for (26b), I assume that English has (optional) object shift.¹⁴ Then, objects in English can overtly move to Spec, νP and object quantifiers can then undergo QR from this position when this is licensed by Scope Economy. Let us consider the derivation of (26a) and (26b) under this analysis. The derivation of (26a) under the object shift analysis is given below:

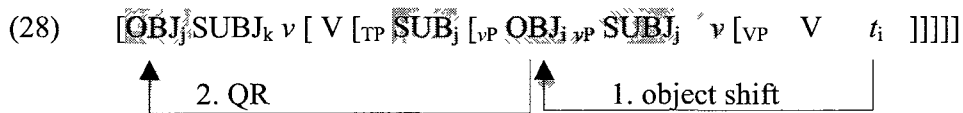


¹³ I argue below regarding Japanese that a quantifier cannot undergo QR for scope reasons after QR that is motivated only by type-shifting, which rules out the option of type-shifting QR to (νP) feeding scope driven QR here. However, it is not out of question that the freezing effect of type-shifting QR holds in Japanese but not in English (which could be related to the scope rigidity difference between the two languages), in which case the problem noted in the text would not arise.

¹⁴ I assume that object shift is obligatory in ECM constructions but it is optional in simple transitive sentences, as in Bošković (2002)

Here, the object first moves to Spec, ν P via object shift (Step 1). As the embedded CP is a phase, the quantifier in Spec, ν P must move to Spec, CP via QR (Step 2). However, this QR is not licensed by Scope Economy because this second step yields no new scope interpretation (i.e. *John* is not a quantifier).

Let us now consider the ECM construction in (26b). I assume that ECM infinitives are TPs. Given that phases are ν Ps and CPs, ECM infinitives are not phases.¹⁵ (26b) is then derived as follows (I omit object shift of the ECMed subject here):



In Step 1, the object moves to Spec, ν P via object shift. Importantly, in Step 2, the object can undergo QR targeting the matrix Spec, ν P because the TP infinitive is not a phase. Furthermore, this QR is licensed by Scope Economy (i.e. the matrix subject *someone* is a quantifier). The apparently problematic data in (26) are thus consistent with the overall approach to QR and phases argued for here.¹⁶

¹⁵ I will in fact argue in the next chapter that ECM infinitives are CPs (Bošković 2007a, McCloskey 2000), which, however, do not function as phases. The categorical status of ECM infinitive is actually not important here. What is important is that ECM infinitives are not phases.

¹⁶ The analysis presented here makes two predictions. First, a quantifier in a PP argument should not be able to take scope over a matrix subject when the PP is in an ECM infinitive. This is so because PPs, which do not bear Case, should not be able to undergo object shift, hence, the option shown in (28) should be unavailable. Consider now the following examples (I omit irrelevant details here):

- (i) Someone_i [ν P t_i put Barriers on every table.]
- (ii) Someone_i believes [_{TP} John to have [ν P put Barriers on every table.]
- (iii) Someone_i [ν P t_i gave money to every charity.]
- (iv) Someone believes [_{TP} Bill to have [ν P given money to every charity.]

In (i) and (iii), the quantifier is in the PP argument of *put* and *give*. However, in (ii) and (iv), the PP argument is within the ECM infinitive. An important point here is that the PP does not bear structural Case, hence the object shift option shown in (28) should be unavailable. Thus, the scope of the quantifier should be restricted to the embedded ν P. I have consulted 5 native speakers of English. While 3 of them found (i) to be ambiguous all 5 of them found the wide scope reading of the universal quantifier in (ii) to be

A similar consideration applies to the following examples:

- (29) a. Someone wants for John to hate everyone.

(some > every, *every > some)

- b. Someone wants to hate everyone.

(some > every, every > some)

Bošković (1998: 12)

In (29a), where the infinitival complement is headed by the prepositional complementizer *for*, the embedded object cannot take scope over the matrix subject. In (29b), where the complement lacks an (overt) complementizer, the embedded object can take scope over the matrix subject. (29a) can be explained on a par with (26a):

unavailable/very hard to obtain (one potential confound with this example, noted by Jonathan Bobaljik (p.c.), is pragmatic oddness). Also, while all the speakers found (iii) to be ambiguous, 4 of them found the wide scope reading of the universal quantifier in (iv) to be impossible/very difficult to obtain. However, 3 of the speakers who found (iv) to be unambiguous found (26b) to be unambiguous/hard to get (under the relevant reading) as well, which seems to indicate that ECM infinitives are not transparent for some speakers.

The second prediction of the analysis is that when an accusative object in an ECM infinitive is further embedded in another ECM infinitive, the object should not be able to take scope over the matrix subject. Consider the following example:

- (v) [[Someone expects [_{TP} John to [_{vP2} believe [_{TP} Mary to [have [_{vP1} every book] read every book].]]]]]]

Here, the embedded object *every book* undergoes object shift (I omit V-movement of *read*). The quantifier can undergo QR from this position but the furthest target of QR is *vP*₂, which is a phase (i.e. *believe* assigns Case to *Mary*). We then predict that *every book* in (iii) should not be able to take scope over *someone*. Again, I found variation among speakers; however, 4 of the 5 speakers I consulted found the wide scope reading of the universal quantifier impossible or very hard to obtain, and only 1 of them (who also found (ii) ambiguous) found the reading to be possible. As the data seem a bit murky and subject to variation among speakers, I leave these issues open at this point. But note that my account of the Japanese data to be presented below does not depend on the resolution of this particular issue. Note also that it would be beyond the scope of this chapter to discuss subjunctives and raising constructions in English as they involve a number of additional factors.



I assume that the infinitive headed by the prepositional complementizer is CP, which is a phase. In Step 1, the embedded object undergoes object shift. However, this object cannot move across the CP phase even after object shift due to the PIC. The embedded object thus cannot take scope over the matrix subject. Regarding (29b), I assume that the infinitival complement of *want* here lacks the CP projection (cf. Bošković 1997, Hornstein 1995, Wurmbrand 2011), which means that the infinitive is not a phase.¹⁷ (29b) then basically has the derivation described in (28), where the infinitival complement does not block QR of the embedded object, which has undergone object shift.

In sum, I have discussed how QR interacts with phases, essentially building on Cecchetto (2004) and Miyagawa (2011a). If the above discussion is on the right track, QR is not simply clause-bounded; rather, it is phase-bounded.

With this much background, let us now turn to the discussion of *dake* ‘only’. Assuming that *dake* undergoes QR, I will show that the QR of *dake* is also phase-bounded. I will first discuss scopal interaction between *dake* and the predicate *soo-da* ‘likely’, which I assume takes a *vP* complement. Assuming that transitive *vPs* and finite clauses are phases but passive and unaccusative *vPs* are not phases (cf. Chomsky 2000, 2001, 2004, 2008), we predict that (i) transitive and unergative subjects can take scope either above or under *soo-da* (cf. Sakai 2000), (ii) accusative objects cannot take scope over *soo-da*, (iii) both unaccusative and passive subjects can take scope under or

¹⁷ The infinitival complement here can be a TP, as analyzed by Bošković 1997 (who provides evidence against the CP analysis), or a *vP*.

over *soo-da*, and (iv) nominative subjects cannot take scope outside of their tensed clauses. All of these predictions are borne out:

Prediction 1: Transitive and unergative subjects can take scope over or under *soo-da*.

- (31) (Kono menbaa-no nakade-wa/Mazu) Takashi-dake-ga
 (This member-Gen among-Top/First.of.all) Takashi-only-Nom
 uta-o utai-soo-da.
 song-Acc sing-likely-cop
 ‘Only Takashi is likely to sing a song.’ (only > likely, likely > only)
- (32) (Kono menbaa-no nakade-wa/Mazu) Takashi-dake-ga
 (This member-Gen among-Top/First.of.all) Takashi-only-Nom
 steezi-de odori-soo-da.
 stage-on dance-likely-cop
 ‘Only Takashi is likely to dance on the stage.’
 (only > likely, likely > only)

Prediction 2: Accusative objects cannot take scope over *soo-da*:

- (33) Takashi-ga migite-dake-o age-soo-da.
 Takashi-Nom right.hand-only-Acc raise-likely-cop
 ‘Takashi is likely to raise only his right hand.’
 (*only > likely, likely > only)

Prediction 3: Both passive and unaccusative subjects take scope under or over *soo-da*:

- (34) (Kono menbaa-no nakade-wa/Mazu) Takashi-dake-ga
 (This member-Gen among-Top/First.of.all) Takashi-only-Nom
 steezi-kara oti-soo-da.
 stage-from fall-likely-cop
 ‘Only Takashi is likely to fall from the stage.’ (only > likely, likely > only)
- (35) (Kono menbaa-no nakade-wa/Mazu) Takashi-dake-ga
 (This member-Gen among-Top/First.of.all) Takashi-only-Nom
 sikar-are-soo-da.
 scold-pass-likely-cop
 ‘Only Takashi is likely to be scolded.’ (only > likely, likely > only)

Prediction 4: *Dake* cannot take scope outside of a tensed clause:

- (36) Takashi-ga aru-seito-dake-ga kasikoi-to omot-ta.
 Takashi-Nom one-student-only-Nom smart-that think-Past
 ‘Takashi thought that only one student is smart.’
 (*only > think, think > only)

In (31) and (32), *dake* ‘only’ is attached to the nominative subject of a transitive verb and an unergative verb, respectively. As the upper bound of these subjects is the matrix CP, *dake* can take scope either over or under *soo-da*.¹⁸ In (33), *dake* is attached to the accusative object. As the upper bound for the accusative object is the *vP* phase, *dake* cannot take scope over *soo-da*, which is located above the *vP*. I will assume in this chapter that a quantifier cannot undergo QR for scope-shifting after it undergoes QR that

¹⁸ If subjects can stay in the Spec of *vP*, as claimed by Fukui (1988), Kuroda (1988) and Takahashi (1994), among others, the wide scope reading of *dake* can be obtained by QR without A-movement. Hence this issue does not affect the current discussion.

takes place solely for type-shifting. The underlying assumption here is that the latter is a last resort operation that fixes the scope of a quantifier. *Dake* then adjoins to the *vP* for type-resolution. As further application of QR is prohibited after QR for type-resolution, *dake* is ‘stuck’ in the *vP*.¹⁹ ²⁰ In (34) and (35), *dake* is attached to the nominative subject of an unaccusative and a passive verb, respectively. In these examples, the upper bound for the subject is again CP. As a result, the nominative subject can take scope either under or over *soo-da*. Finally, in (36), the verb *omow-* ‘think’ is located above the relevant CP, which is the upper bound for the embedded subject that is accompanied by *dake*. Hence, the embedded subject cannot take scope over the matrix predicate, as predicted. I assume that the narrow scope interpretation of *dake* in (31), (32), (34) and (35) is obtained through reconstruction of the subject.²¹ If the subject in these examples is interpreted in its base position, *soo-da* c-commands the subject. From these considerations, I conclude that QR of *dake* ‘only’ is phase-bounded. Note that this analysis can be taken to provide an argument for theory of phases. Below, I will argue that this analysis of QR and a particular definition of phases derive the scope data regarding the Nominative/Accusative conversion.²²

2.5 Back to the nominative/accusative conversion

In this section, I give an account for the scope facts of the Nominative/Accusative

¹⁹ The *JEAL* editors suggest an alternative way to capture the lack of wide scope reading of accusative objects. In particular, they suggested that QR is licensed by scope economy when it moves a QNP over another QNP, but is not licensed by scope economy if it moves a QNP over a head. As a result, a QNP cannot QR to take scope over a head. I leave investigation of this possibility for future research.

²⁰ This assumption is consistent with the discussion of (28).

²¹ Alternatively, if the subject stays *in situ*, as discussed in footnote 13, the subject does not have to undergo QR to take scope under the modal. Rather, it has to undergo QR from *vP* Spec to take scope over the modal verb.

²² Given the discussion in the text, a question arises as to why Japanese shows the scope rigidity effect, while English does not. I will discuss this question in Sect. 6.2.

conversion based on the QR analysis of *dake* ‘only’ presented above. The relevant assumption and the data are repeated here:

(37) The domain of QR of *dake* is phase-bounded.

- (38) a. John-ga migime-dake-o tumur-e-ru.
 John-Nom right.eye-only-Acc close-can-Pres
 ‘John can close only his right eye.’ (??*only > can, can > only)
- b. John-ga migime-dake-ga tumur-e-ru.
 John-Nom right.eye-only-Nom close-can-Pres
 ‘John can close only his right eye.’ (only > can, can > only)

It was shown in the previous section that QR of *dake* ‘only’ is phase-bounded. At the same time, it is clear that the scope of the objects in (38) is constrained by Case. It is tempting to unify these assumptions. In other words, given that the scope of *dake* ‘only’ is phase-bounded, it may be possible to connect phasehood and Case-valuation. I now propose the following:²³

(39) Case-valuation determines phasehood.

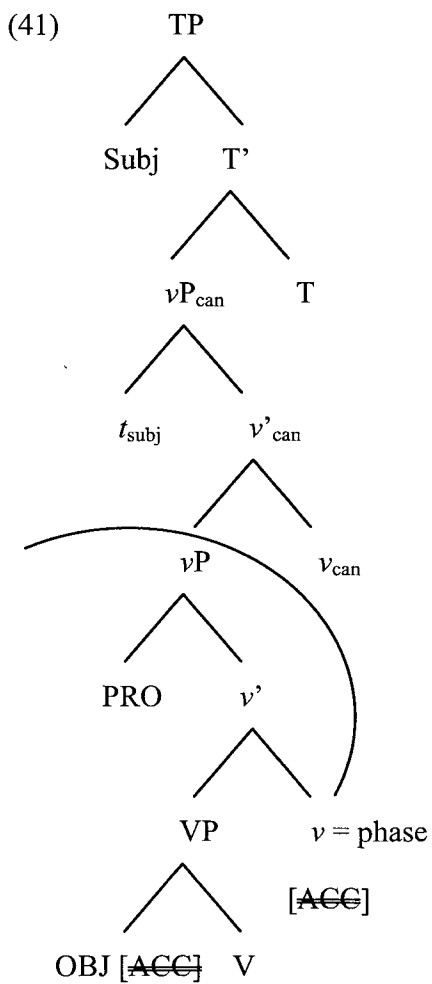
The proposal predicts that a *vP* will constitute a phase only when *v* values Case of an internal argument. With this in mind, let us consider the case in which a complex

²³ For discussion of Case and phasehood, see also Kasai (2004), Miyagawa (2011b), and Epstein et al. (2010, to appear). Epstein et al. (2010, to appear) in fact independently propose that Case determines phasehood and offer an extremely interesting way of deducing this state of affairs, which seems to be consistent with the system adopted in this chapter. I refer the reader to their works for details.

predicate takes an accusative object, which is repeated here:

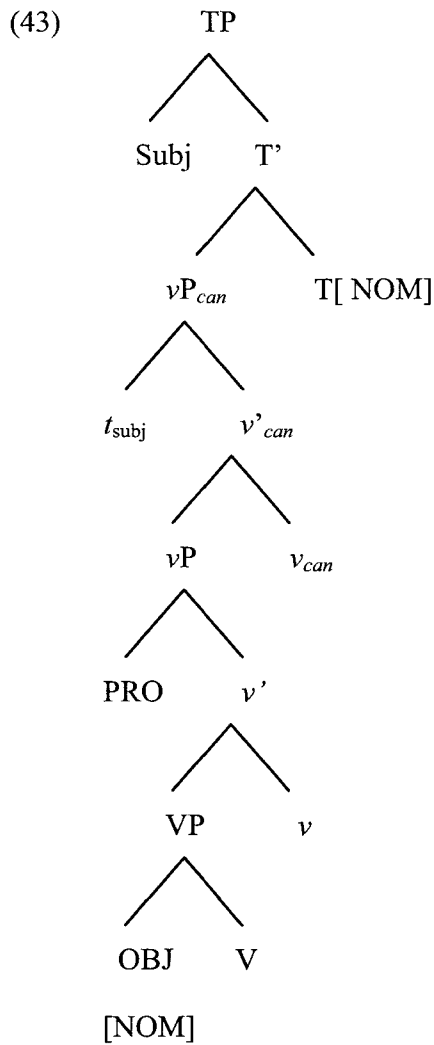
- (40) John-ga migime-dake-o tumur-e-ru.
 John-Nom right.eyel-only-Acc close-can-Pres
 ‘John can close only his right eye.’ (??*only > can, can > only)

Here, the accusative object must take scope under the potential affix. Let us consider the following derivation:



Now let us consider the case of nominative objects:

- 38



I assume that the potential morpheme selects vP , whose head does not assign Case. (cf. Ura 1996, 1999, 2000). As a result, accusative Case is not assigned. I assume that the nominative object is Case-valued by T (see Kishimoto 2001, Koizumi 1994a, 1995, 1998, 2008, Niinuma 1999, Nomura 2003, 2005a, 2005b, and Takezawa 1987, among others). Thus, under our assumptions of phase-bounded QR of *dake* ‘only’, we predict that *dake* can QR to either vP or TP (recall that QR targets nodes of type t). This is why, in contrast to accusative objects, nominative objects can take scope over the potential affix.

Let us now turn to the examples with causatives, which are repeated below. The present analysis accommodates the data that were problematic for Bobaljik and Wurmbrand (2007), which are repeated below:

- 40

- b. Taro_j-ga Hanako_i-ni zibun_{j/i}-no migite-dake-o
 Taro_j-Nom Hanako_i-Dat self_{j/i}-Gen right.hand-only-Acc
 age-sase-rare-ta.
 raise-cause-can-Past
 ‘Taro could make Hanako raise only his/her right hand.’
 (?*only > can, can > only)
- ‘It is only his/her right hand that Taro could make Hanako raise.’
 (?*only > can)
- ‘Taro could make Hanako raise only his/her right hand without raising
 his/her left hand.’
 (can > only)

The point of these data is that whether there is a vP projection or not does not affect the scope puzzle because in both of the above sentences, the causative morpheme selects vP, as indicated by the fact that *zibun* ‘self’ can refer to either *Taro* or *Hanako* in both of the examples. This analysis proposed here captures these data because QR of *dake* ‘only’ is bound to domains of Case-valuation, hence is not influenced by structural differences between infinitives.

Let me briefly discuss how Case-valuation takes place in the causative construction. I assume that the accusative Case of the complement *v* in the causative construction is absorbed by the matrix predicate *–sase* ‘cause’. This assumption is supported by the following contrast:

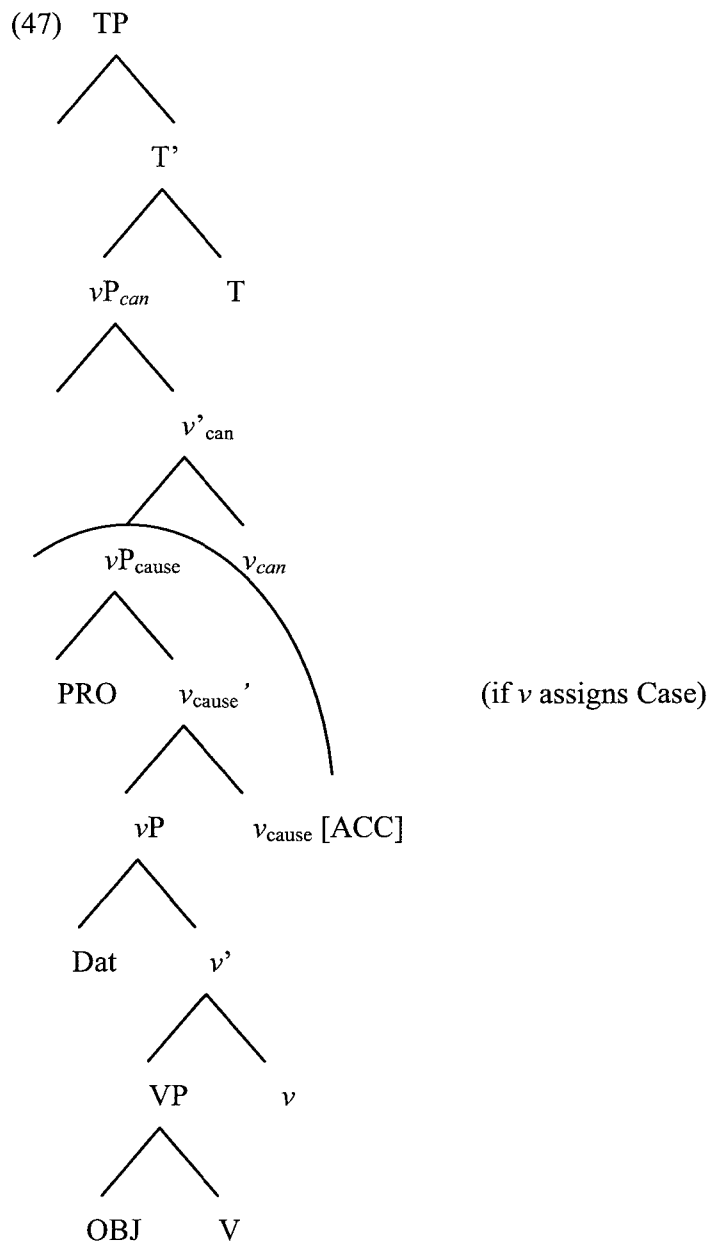
- (45) John-ga eigo-?o/ga wakar-u.
 John-Nom English-Acc/Nom know-Pres
 ‘John understands English.’
- (46) Mary-ga John-ni eigo-o/*ga wakar-ase-ru.
 Mary-Nom John-Dat English-Acc/Nom know-cause-Pres
 ‘Mary makes John understand English.’

In (45), the accusative Case on the object is only marginally acceptable. However, in (46), where the causative morpheme selects *wakar-* ‘understand’, the accusative Case is fully acceptable while nominative marking is impossible. This indicates that the accusative Case of the object comes from *-(s)ase* ‘cause’, rather than *wakar* ‘understand’. This contrast, as well as the nominative marking of embedded objects discussed in the text, suggests that embedded objects are Case-marked by the matrix predicates.²⁵ The derivations of the relevant sentences are given below:

²⁵ The contrast in grammaticality seems to come from ‘stativity’ (cf. Kuno 1973; Saito 1982). *Wakar* ‘know’ is a stative verb, hence cannot assign accusative Case. However, if this verb is used in a context where stativity is voided, accusative Case becomes available:

- (i) Boku-no i-u-koto-o/?-ga wakat-te kure.
 I-Gen say-Pres-what-Acc/Nom understand please.
 ‘Please understand what I am saying.’ (Saito (1982, pp. 68); an observation attributed to Susumu Kuno (personal communication))

Wakar in (i) is selected by *kure* ‘please’. In this case, the object is marked accusative, because *wakar* in this example is understood as a volitional verb due to the presence of *kure*. See Saito (1982) for more examples of this kind.



Here the causative affix *-sase* ‘cause’ (v_{cause}) does not assign Case. The matrix v can assign Case. If it assigns Case to the embedded object, the latter must take scope under the potential morpheme (cf.(44b)). On the other hand, if the matrix v does not assign Case to the embedded object, the latter gets Case from T, which means that the embedded

The data concerning PPs that we have discussed above can also be accounted for. Consider the following examples:

- In (48a), a PP co-occurs with a nominative object, and *dake* ‘only’ in this PP can take scope either above or under the potential affix. In (48b), on the other hand, the PP co-occurs with an accusative object. *Dake* ‘only’ in this PP can take scope only under the potential affix. This indicates that PPs show exactly the same scopal behavior as Case-marked objects which we have seen above provides conclusive evidence against the pure Case-movement analysis. I do not repeat the derivations here but the analysis given above straightforwardly extends to these examples. These data are particularly important since they show that Case properties of ν affect elements other than those that are Case-licensed by ν , as expected under the current analysis, but not under the

Case-movement analysis discussed in Sect. 2.2. Notice also that if the PP is scrambled above the subject, the sentence becomes ambiguous even when the object is marked accusative.²⁶

- (49) Koshoo-dake-de_i Taro-ga sakana-o *t_i* tabe-rare-ru.
 pepper-only-with Taro-Nom fish-Acc eat-can-Pres
 ‘It is only pepper that Taro can eat fish with.’ (only > can)
 ‘Taro can eat fish with only pepper.’ (can > only)

Here the adverb is in the sentence initial position of the sentence and *dake* ‘only’ can take scope either under or over the potential morpheme. This fact is also accounted for under the analysis presented here because due to clause-internal scrambling of the PP adjunct, the adjunct is now located in the CP phase (see Sect. 6.3 for discussion).

It is worth noting here that the scope facts regarding the adjunct PP do not change in the example where the adjunct PP is clearly base-generated below the object. Consider the following causative construction:

- (50) Taro-ga Hanako-o eigo-de supiiti-sase-ta.
 Taro-Nom Hanako-Acc English-with speech-cause-Past
 ‘Taro made Hanako give a speech in English.’

The causative morpheme in this example has an intransitive verb *supiiti*-(*su*) ‘give a speech’ as its complement. The causee *Hanako* is marked accusative. Of importance here

²⁶ I thank Mamoru Saito for pointing this out.

is that the adverb *eigo-de* ‘in English’ modifies the embedded verb. Hence, the base position of this adverb is necessarily lower than the causee, which behaves as the subject of the embedded verb.

With this background, let us go back to the Nominative/Accusative conversion:

- (51) a. Taro-ga Hanako-ga eigo-de supiiti-sase-rare-ru.
 Taro-Nom Hanako-Nom English-with speech-cause-can-Pres
 ‘Taro can make Hanako give a speech in English.’
- b. Taro-ga Hanako-o eigo-de supiiti-sase-rare-ru.
 Taro-Nom Hanako-Acc English-with speech-cause-can-Pres
 ‘Taro can make Hanako give a speech in English.’

The causative morphemes in these examples are selected by the potential morpheme. The causee undergoes Nominative/Accusative conversion, as shown in (51a-b). Consider now the following data:

- (52) a. Taro-ga Hanako-ga eigo-dake-de supiiti-sase-rare-ru.
 Taro-Nom Hanako-Nom English-only-with speech-cause-can-Pres
 ‘Taro can make Hanako give a speech only in English.’
 (only > can, ?can > only)
- ‘It is only in English that Taro can make Hanako give a speech.’
 (only > can)
- ‘Taro can make Hanako give a speech which uses only English.’
 (?can > only)

- b. Taro-ga Hanako-o eigo-dake-de supiiti-sase-rare-ru.
 Taro-Nom Hanako-Acc English-only-with speech-cause-can-Pres
 ‘Taro can make Hanako give a speech only in English.’
 (?*only > can, can > only)
- ‘It is only in English that Taro can make Hanako give a speech.’
 (?*only > can)
- ‘Taro can make Hanako give a speech which uses only English.’
 (can > only)

Dake ‘only’ is in the adjunct that modifies the embedded verb. The contrast in (52a-b) replicates the observations made above regarding adjunct cases, where PPs show exactly the same scopal behavior as Case-marked objects.

Note in passing that the analysis presented here further predicts that the QR of *dake* should not be blocked if the verb is unergative, since such verbs do not value Case. This prediction is indeed borne out by the following example (see Futagi 2004, Harada and Noguchi 1992, Kuno and Monane 1979, Morita 1971, Sano 1985, and Shoji 1986, among others):²⁷

²⁷ *Deki* ‘can do’ is an irregular potential form of *su* ‘do’.

- (53) Taro-ga eigo-dake-de supiiti-deki-ru.
 Taro-Nom English-only-with speech-can-Pres
 ‘Taro can make a speech only in English.’ (only > can, can > only)
 ‘It is only in English that Taro can make a speech.’ (only > can)
 ‘Taro can make a speech which uses only English.’ (can > only)

Here the potential morpheme selects an intransitive verb *supiichi-(su)* ‘make a speech’. *Dake* in the adverb can take scope either over or under the potential verb. This is predicted under the present analysis because *supiichi-(su)* ‘give a speech’ does not assign Case. Hence, the relevant QR operation is not blocked.

This analysis makes another very interesting prediction. As Bošković (to appear a) notes, the proposal predicts that if a verb assigns *inherent* Case to an object, the scope of the object should not be restricted to the *vP*-domain (i.e. there is no *vP* phase created by Case-valuation in this case). There are verbs in Japanese which assign inherent Case. What is important in this context is the observation by Bošković (2006) and Franks (1994) that while inherent Case must be assigned, structural Case does not have to be assigned. Franks (1994) argues on independent grounds that genitive Case assigned by numerals and some quantifiers (genitive of quantification) is an inherent Case in SC. The following example shows that accusative Case assigned by a verb can be overridden by genitive Case assigned by a numeral:

- (54) On kupuje pet kola
 he buys five cars_{GEN} (Bošković 2010a)

(55) On pomaže ljudima.
he helps people_{DAT}

(56) *On pomaže pet ljudima.
he helps five people_{DAT}

(57) *On pomaže pet ljudi.
he helps five people_{GEN} (Bošković 2010a)

Turning back to the case of Japanese, given the observation by Bošković (2006) and Franks (1994), Case-conversion can be used as a test for inherent Case, given that inherent Case must be assigned (which means that it cannot be replaced by another Case).

Consider now the following case of example with *a* ‘meet’, which assigns dative Case:

- (58) Taro_o-wa daitouryou-ni /*_o a-u.
Taro-Top president-Dat/*Acc meet-Pres
'Taro meets with the president'.

Here the verb *a*-‘meet’ takes a dative object. Significantly, *a*-‘meet’ disallows Nom/Acc conversion of the object:

- (59) Taro_o-wa daitouryou-ni/*ga/*_o a-e-ru.
Taro-Top president-Dat/*Nom/*Acc meet-can-Pres
'Taro can meet with the president.'

The verb is accompanied by the potential verb but the object must be dative. Given that inherent Case must be assigned, while structural Case does not have to be, (59) confirms that the dative Case assigned by *a* ‘meet’ is inherent.

Now, Bošković (to appear a) observes that from the perspective of Chomsky (1986a), where inherent Case is tied to theta-role licensing, inherent Case should not be assigned the way structural Case is assigned; an argument gets its inherent Case together with its theta-role. According to Bošković (to appear a), this means that with inherent Case, there is no regular process of Case-valuation of the kind Chomsky (2000) proposed for structural Case; inherent Case simply comes together with the theta-role.

Turning now to *dake* ‘only’, as noted by Bošković (to appear a), the current approach to phases then predicts that if a verb assigns *inherent* Case to an object, the

scope of the object should not be restricted to the ν P-domain (since there is no Case-valuation in an inherent Case context). Significantly, as Bošković (to appear a) points out, *dake* ‘only’ in the dative object can take scope over *can*.

- (60) Taro-wa daitouryou-dake-ni a-e-ru.
Taro-Top president-only-Dat meet-can-Pres
'Taro can meet only with the president.' (only > only, can > only)
'It is only the president that Taro can meet with.' (only > only)
'Taro can meet with the president without any other people around.'
(can > only)
(Bošković to appear at)

Dake ‘only’ in the dative object in (60) can take scope over or under *-e* ‘-can’. We have here a rather surprising contrast with accusative objects; dative objects apparently pattern with nominative objects, rather than accusative objects with respect to the scope of *dake*:

- (61) a. John-ga migime-dake-o tumur-e-ru.
John-Nom right.eye-only-Acc close-can-Pres
'John can close only his right eye.' (?*only > can, can > only)
'It is only his right eye that John can close.' (?*only > can)
'John can wink his right eye.' (can > only)

- b. John-ga migime-dake-ga tumur-e-ru.
 John-Nom right.eye-only-Nom close-can-Pres
 ‘John can close only his right eye.’ (only > can, can > only)
 ‘It is only his right eye that John can close.’ (only > can)
 ‘John can wink his right eye.’ (can > only)

As we have discussed, the nominative object, but not the accusative object, can take scope over *e* ‘can’. Thus the dative object in (60) patterns with the nominative object in (61b), not with the accusative object in (61a). These data receive a straightforward account under the current analysis. Since in both (60) and (61b) the lower verb does not assign structural Case, there is no ν P phase created by Case-valuation in the inherent/nominative Case examples. The lower ν P then does not block QR of *dake* ‘only’ in (61b), in contrast to (61a).

To summarize the discussion this section, I have shown that the scope alternation observed in the Nominative/Accusative conversion provides evidence that phases are created via Case-valuation. In particular, I have shown that the QR-analysis of *dake* ‘only’, coupled with an assumption regarding the locality of QR, explains the core data of the Nominative/Accusative conversion in Japanese, as well as the fact that dative objects pattern with nominative objects in the relevant respect. To the extent that the present analysis is on the right track, it supports a particular approach to phases adopted in this chapter. Note in passing that the present analysis is a mixture of the Case-movement analysis and the QR/VP analysis; I assume that Case is the crucial factor in determining the scope of objects with *dake*. However, I also adopt the QR-analysis of *dake*. My analysis can then be considered a hybrid analysis of the two approaches. The crucial

component of the analysis, which the reader should have in mind, is that phasehood is determined by Case-valuation.

2.6 Related issues

In this section I discuss some issues related to the proposals made in this chapter. In particular, I discuss (i) Case-valuation of nominative objects, (ii) QR and scope rigidity, (iii) the landing site of short scrambling, (iv) Case-absorption and cyclic derivation, and (v) data that do not apparently fit the condition on QR introduced above.

2.6.1 Case-valuation via Agree

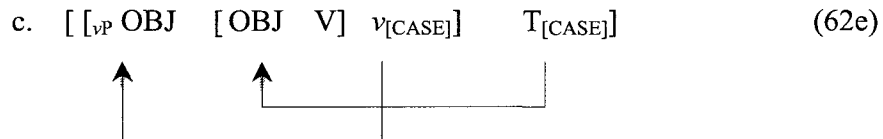
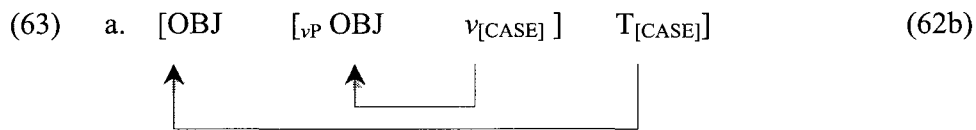
I have assumed with Koizumi (1994a, 1995, 1998, 2008), Nomura (2003, 2005a, 2005b) and Takezawa (1987) that Case of nominative objects is valued by T. More specifically, I assume with Nomura (2003, 2005a, 2005b) and Koizumi (2008) that nominative objects are Case-valued by T via Agree (see Chomsky 2000, 2001, 2004, 2008 for Agree). If Case-valuation determines phasehood, as I have argued in this chapter, we predict that Case-valuation should not take place across phase boundaries due to the PIC. The following observation due to Saito (2009) seems to provide evidence to this effect.²⁸

²⁸ Tada (1992, 1993) also discusses the full paradigm in examples like (54).

- (62)
- | | | | | |
|----|----------|----------|----------|-----------------------|
| a. | Taro-wa | Mary-ni | wain-o | nom-ase-yasu-i. |
| | Taro-Top | Mary-Dat | wine-Acc | drink-cause-easy-Pres |
| b. | Taro-wa | Mary-ga | wain-o | nom-ase-yasu-i. |
| | Taro-Top | Mary-Nom | wine-Acc | drink-cause-easy-Pres |
| c. | Taro-wa | Mary-ga | wain-ga | nom-ase-yasu-i. |
| | Taro-Top | Mary-Nom | wine-Nom | drink-cause-easy-Pres |
| d. | *Taro-wa | Mary-o | wain-o | nom-ase-yasu-i. |
| | Taro-Top | Mary-Acc | wine-Acc | drink-cause-easy-Pres |
| e. | *Taro-wa | Mary-o | wain-ga | nom-ase-yasu-i. |
| | Taro-Top | Mary-Acc | wine-Nom | drink-cause-easy-Pres |
- ‘It is easy for Taro to make Mary drink wine.’

The matrix predicate *yasu* ‘easy’ is a ‘tough’ predicate, which allows nominative objects (see Inoue 1978 and Saito 1982, among others). The matrix predicate *yasui* ‘easy’ selects the causative morpheme *sase* ‘-cause’, which in turn selects a transitive verb *nom-* ‘drink’. As seen above, the causee and the embedded object show Case conversion. (62a) is a base-line example, which does not show any Case conversion. The nominative object can be licensed above the accusative object, as shown in (62b), and both of the arguments can be marked nominative, as shown (62c). (62d) seems to be subsumed under the well-known double-*o* constraint, which roughly states that there cannot be more than one accusative marked element (see Harada 1973, 1975, Shibatani 1973, Hiraiwa 2010, and Poser 2002, among others.). As the precise explanation of this constraint still remains open at this point, I leave the analysis of (62d) open. Importantly, the nominative object

is not licensed under the accusative object, as shown in (62e). This contrast is predicted under the analysis presented in this chapter because of the PIC. The PIC states that an element in a phase X cannot be probed by a functional category in a higher phase Y (unless it is located at the edge of X). Bearing in mind that phases are determined by Case-valuation, consider the following derivation (I omit irrelevant details):



(63a) corresponds to (62b). This derivation converges in the following way. First, the lower object is Case-valued by ν , which creates a ν P phase. Then, the higher object is Case-valued by T. There is no PIC violation here. (63b) corresponds to (62c). Here, both of the objects are Case-valued by T via Multiple Agree (see Koizumi 2008, and Nomura 2003; see also Hiraiwa 2001a for Multiple Agree). There is no PIC violation here, either. (63c) corresponds to (63e). This derivation cannot converge due to the PIC. First, the higher object is Case-valued by ν . At this point, ν P phase is created so that the lower object with unvalued Case is dominated by a phase (and not located at its edge). At the point of the introduction of the T head, this object is then no longer visible to the T head

given the definition of the PIC in (21).

2.6.2 QR in Japanese and scope rigidity

I have so far confined the discussion to *dake* ‘only’. However, as noted above, Nomura (2005a, 2005b) shows that universal quantifiers can also undergo “movement”, occupying different positions for scope interpretation. However, contrary to Nomura’s (2005a, 2005b) claim that nominative objects (optionally) move to TP, Spec, we have already seen that nominative objects cannot merely undergo Case-driven movement, or more precisely, that Case-movement cannot be solely responsible for the different behavior of nominative and accusative objects regarding scope. Nomura’s (2005a, 2005b) observation can now be interpreted as an indication that universal quantifiers, as well as the particle *dake* ‘only’, undergo QR in Japanese. These observations confirm the claim that Japanese, a typical scope rigidity language, also has QR (see Saito 2005 and references therein for Japanese, Sauerland 2001 and Wurmbrand 2008 for German, Oh 2006 for Korean, Fitzgibbons 2010 for Russian). There are at least two issues here, which are related to each other. First, we then have to explain why languages like Japanese typically show scope rigidity, as illustrated by (64) (Kuroda 1970):

- (64) Dareka-ga daremo-o aisitei-ru.
 someone-Nom everyone-Acc love-Pres
 ‘Someone loves everyone.’ (some > every *some > every)

As is well known, sentences like (64) are not ambiguous in Japanese. Second, while, as discussed above, nominative objects can undergo QR and take scope over potential

morphemes, they cannot undergo QR to take scope over subjects (see Futagi 2004 and Yatsushiro 1999). Consider the following example:

- (65) Dono-gakusei-mo koyubi-dake-ga mage-rare-ru.
 which-student-every pinkie-only-Nom crook-can-Pres
 ‘Every student can crook only his pinkie.’
 (*only > every > can, every > only > can, every > can > only)
 ‘It is only his pinkie that every student can crook.’ (*only > every > can)
 ‘For every student, it is only his pinkie that he can crook.’ (every > only > can)
 ‘Every student can crook his pinkie and no other fingers.’
 (every > can > only)

The nominative object in this example can take scope over the potential morpheme, but not over the subject. To explain these puzzles, I adopt the economy principle proposed by Bobaljik and Wurmbrand (to appear) and Wurmbrand (2008):

- (66) Scope Transparency (ScoT):

If the order of two elements at LF is $A \gg B$, the order at PF is $A \gg B$.

(Bobaljik and Wurmbrand to appear)

ScoT is a preference principle which constrains the application of optional, i.e. free movements such as scrambling and QR and requires that LF be reflected in PF representations *whenever possible*. This means that the inverse reading must be obtained via application of (overt) scrambling whenever possible (cf. Kuroda 1970), as in (67),

because this way ScoT can be obeyed (word order reflects the inverse scope):

- (67) Daremo_i-o dareka-ga *t_i* aisitei-ru.
 everyone-Acc someone-Nom love-Pres
 ‘Someone loves everyone.’ (some > every *every > some)

The inverse scope reading can in principle be obtained via application of QR, in which case there is a mismatch between PF word order and scope interpretation. This option is thus allowed only when scrambling is not available (as in English) to obtain the inverse reading. So, subject and object QNPs in Japanese scopally interact with each other but can yield distinct PF representations via overt scrambling. As extensively argued in Bobaljik and Wurmbrand (2008), ScoT predicts the scope rigidity effect for Japanese, because Japanese has scrambling, which allows inverse scope reading to be reflected in word order. Returning to the case where a nominative object takes scope over a potential morpheme, but not over a subject, we can accommodate it under ScoT. Verbal affixes such as the potential morpheme always follow QNPs because Japanese is a head-final language. The LF representation for the inverse reading then cannot be reflected in PF. ScoT, which is a preference principle, then allows QR to take place to obtain the inverse reading. This is in contrast to the LF representation of the reading where the object takes scope over the subject, which can be reflected in PF, as in (68). Hence the QR of the object over the subject is blocked by ScoT, as we saw in (64) and (65).^{29 30}

²⁹ The reconstructed scope in this example can be accommodated by ScoT. See Bobaljik and Wurmbrand (to appear) and Wurmbrand (2008) for details.

³⁰ One might wonder if the following example of Right Dislocation in Japanese might be relevant here:

- (68) Koyubi-dake_i-ga dono-gakusei-mo t_i mage-rare-ru.
pinkie-only-Nom which-student-every crook-can-Pres
‘Every student can crook only his pinkie.’
(every > can > only, every > only > can, only > every > can)

2.6.3 The landing site of short scrambling

Given the Case-phase bounded nature of QR of *dake* ‘only’, we can now investigate the landing site of short scrambling (see Hoji 1985, Kishimoto 2008, Miyagawa 1997, Miyagawa and Tsujioka 2004, Tada 1993, Yatsushiro 1999, 2003, among others, for discussion).³¹ While Kitahara (2002) and Nemoto (1993) argue that short scrambling involves ν P adjunction, Takano (1996, 1998) and Ura (1996, 2000) argue that it involves VP adjunction. Note first that accusative objects in ditransitives must scope under the potential affix while nominative objects in ditransitives can take scope over the potential affix.

-
- (i) Watasi-wa mage-rare-ru-yo, koyubi-dake-ga.
I-Top crook-can-Pres-Part pinkie-only-Nom
‘I can crook only my pinkie.’

Here the nominative object is placed to the right of the complex predicate. We may have here an instance of rightward movement in Japanese (cf. Haraguchi 1973, Simon 1989), which I have assumed to be non-existent in Japanese in the text. The grammaticality status of this example is murky. The wide scope reading of the object (only > can) is available to me but the availability of the narrow scope reading of the object (can > only) requires more examination. Furthermore, the analysis of such constructions has been controversial. In fact, it has been claimed in some works that the construction in question involves two clauses where the second clause is deleted after leftward movement of some phrases, which gives an apparent case of rightward movement (see Abe 1999, Kuno 1978, and Tanaka 2001, among others). I thus leave investigation of this construction with respect to ScoT for future research.

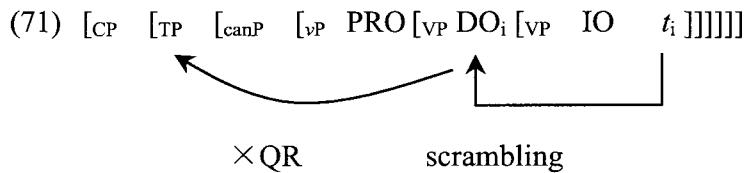
³¹ I simply assume here that the word order permutation in the Japanese ditransitive construction is derived via movement of the direct object, contra Miyagawa’s (1997) and Miyagawa and Tsujioka’s (2004) claim that both the Dat-Acc order and the Acc-Dat order can be base-generated (see Yatsushiro 1999, 2003 for arguments against the base-generation approach). The results discussed in this section can be replicated by the causative construction, where word order permutation must be derived via movement of the embedded object. Thus, I do not go into the discussion of the word order permutation any further here.

- (69) a. Takashi-ga inu-ni niku-dake-ga age-rare-ta.
 Takashi-Nom dog-Dat meat-only-Nom give-can-Past
 ‘Takashi could give the dog only meat.’ (only > can, can > only)
 ‘It is only meat that Takashi could give the dog.’ (only > can)
 ‘Takashi could give the dog meat without any other food (such as dog food).’ (can > only)
- b. Takashi-ga inu-ni niku-dake-o age-rare-ta.
 Takashi-Nom dog-Dat meat-only-Acc give-can-Past
 ‘Takashi could give the dog only meat.’ (?*only > can, can > only)
 ‘It is only meat that Takashi could give the dog.’ (?*only > can)
 ‘Takashi could give the dog meat without any other food (such as dog food).’ (can > only)

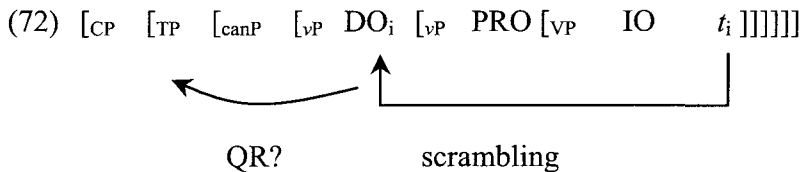
Importantly, if the accusative object undergoes short scrambling, it still cannot take scope over the potential affix:

- (70) a. Takashi-ga niku_i-dake-ga inu-ni *t_i* age-rare-ta.
 Takashi-Nom meat-only-Nom dog-dat give-can-Past
 ‘Takashi could give the dog only meat.’ (only > can, can > only)
- b. Takashi-ga niku_i-dake-o inu-ni *t_i* age-rare-ta.
 Takashi-Nom meat-only-Acc dog-dat give-can-Past
 ‘Takashi could give the dog only meat.’ (?*only > can, can > only)

In (70a), the nominative object is moved above the dative object. The nominative object can take scope over the potential affix. On the other hand, in (70b), the accusative object is moved above the dative object via short scrambling. Here, the accusative object cannot take scope over the potential affix. Given that QR of *dake* cannot take place across the ν P phase, (70b) indicates that the landing site of short scrambling must be below ν P, which then blocks QR of *dake*. It follows that short scrambling involves VP adjunction, rather than ν P adjunction.



Given the phase-bounded nature of QR, QR from the VP-adjoined position can only target ν P. It cannot go beyond ν P. Then, the direct object cannot take scope over the potential suffix. If short scrambling were ν P adjunction, the object would be on a ν P edge position prior to QR. Hence, the object should then be able to QR outside of ν P and take scope over the potential morpheme. This is shown in the derivation in (72)



Note in this respect that if the object clearly moves above ν P, it can take scope over the

potential affix:³²

- (73) Niku-dake-o Takashi-ga inu-ni t_i age-rare-ta.
 meat-only-Acc Takashi-Nom dog-Dat give-can-Past
 ‘Takashi could give the dog only meat.’ ((?)only > can, can > only)

In (73) the accusative object moves above the subject, which is base-generated in the Spec, *canP*. In this case, the accusative object is higher than *vP*, hence, as expected, it can take scope either over or under the potential affix.

To sum up, I have shown that given the Case-phase-bounded nature of QR of *dake* ‘only’, short scrambling must be VP-adjunction, rather than *vP* adjunction.

2.6.4 Some ‘stressing’ issues

In this section, I discuss some remaining issues that will need to be more

³² It is well-known that while clause-internal scrambling affects scope interpretation, long-distance scrambling does not (see Abe 1993, Kuroda 1970, Saito 1992, and Tada 1993, among others). Consider the following examples

- (i) a Dareka-ga daremo-o aisitei-ru
 someone-Nom everyone-Acc love-Pres
 ‘Someone loves everyone’ (some > every, *every > some)
 b Daremo_i-o dareka-ga t_i aisitei-ru
 everyone-Acc someone-Nom love-Pres
 ‘Someone loves everyone’ (some > every, every > some)
- (ii) a Dareka-ga [Hanako-ga daremo-o aisitei-ru to] omottei-ru
 someone-Nom Hanako-Nom everyone-Acc love-Pres that think-Pres
 ‘Someone thinks that Hanako loves everyone’ (some > every, *every > some)
 b Daremo-o_i dareka-ga [Hanako-ga t_i aisitei-ru to] omottei-ru
 everyone-Acc someone-Nom Hanako-Nom love-Pres that think-Pres
 ‘Someone thinks that Hanako loves everyone’ (some > every, *every > some)

(ia) shows that subjects must take scope over objects in transitive sentences. In (ib), where the object is moved above the subject via clause-internal scrambling, the object can take scope over the subject. (iia) shows that matrix subjects must take scope over embedded objects. This does not change after an application of long-distance scrambling, which is shown in (iib). As the example in the text involves clause-internal scrambling, the observation is consistent with the findings in the literature. See Abe (2005), Miyagawa (2011a), Saito (2003, 2005) and references therein for recent discussions of (ii).

comprehensively discussed in future research. I have so far argued that movement of *dake* ‘only’ is phase-bounded. However, there are instances of *dake* which apparently violate this constraint (see Futagi 2004, Harada and Noguchi 1992, Kuno and Monane 1979, Morita 1971, Sano 2002, and Shoji 1986, among others, for discussion):

- (74) Taro-ga sakana-o kosho-de-dake tabe-rare-ru.
Taro-Nom fish-Acc pepper-only-with eat-can-Pres
‘It is only pepper that Taro can eat fish with.’ (?*only > can)
‘Taro can eat fish with only pepper and nothing else.’ (can > only)
- (75) Taro-ga sakana-o kosho-de-dake tabe-rare-ru.
Taro-Nom fish-Acc pepper-with-only eat-can-Pres
‘It is only pepper that Taro can eat fish with.’ (only > can)
‘Taro can eat fish with only pepper and nothing else.’ (*can > only)

In (74) *dake* ‘only’ takes scope under the potential affix, which is predicted under the current analysis given the assumption that the PP is generated below *vP*. In (75) *dake* is placed to the right of the postposition, and surprisingly, it takes scope over *rare* ‘can’. With this contrast in mind, let us now turn to the data in (76) noted by Saito and Hoshi (1998) (see also Saito 2000 and Takano 2003 for relevant discussion):

- (76) Taro-wa me-o 0.001-byoo-dake ake-rare-ru.
 Taro-Top eye-Acc 0.001-second-only open-can-Pres
 ‘Taro can open his eyes only for 0.001 seconds.’ (*only > can, can > only)
 ‘It is only 0.001 seconds that Taro can open his eyes.’ (*only > can)
 ‘Taro has a special ability to open his eyes for a very short period of time, i.e.,
 0.001 seconds.’ (can > only)
 (Saito and Hoshi 1998, pp. 25-26)

There seems to be some disagreement in the literature regarding (76). If *dake* ‘only’ takes scope only under the potential morpheme in (76) as seems to be implied in Saito and Hoshi (1998), we can extend to these examples the analysis of *dake* with accusative objects proposed above. However, Saito (2000) reports that *dake* can take scope over the potential affix in (76).

I suggest that what is relevant here is an observation made by Sano (2002). Sano (2002) notes that when *dake* is not followed by a Case-marker, as in (75), it is characterized by phonetic prominence (see Sano's work for details). Essentially following Sano (2002), I take this to be a realization of an extra focus feature [Foc], and assume that this feature triggers focus-related long distance movement across phase boundaries. I also extend this analysis to (76), where the *dake* phrase lacks a Case marker (hence it is not followed by a Case-marker), which means that (76) can be treated on a par with (75) in terms of focus movement. If the above suggestion is correct, *dake* in (75) and (76) undergoes movement but this movement is not QR, which we have been concerned with. Sano (2002) also suggests that the extra focus is available when *dake* receives emphatic stress. Recall that it has been noted in the literature that even an accusative object can

marginally take scope over the potential morpheme if the object bears emphatic stress (Koizumi 1994a, 1995, 1998). This stress can also be taken to be a realization of an extra focus feature. In other words, what I am suggesting here is a unified account of (75) and (76) and emphatically stressed accusative object cases, where they all involve focus movement. I leave working out the details of the account for future research.³³

2.7 Conclusion

I have argued that a QR type analysis of *dake* ‘only’, where QR of *dake* is phase-bounded, when coupled with the proposal in this chapter that phasehood is affected by Case-valuation (only ν Ps involved in Case-valuation count as phases), gives us the best explanation of the scope facts of Nominative/Accusative conversion. To the extent that the account proposed here is successful, it argues for the notion of phase in general as well as the particular context-sensitive approach to phases adopted in this chapter. I have also pointed out that given the analysis proposed in this chapter short scrambling must involve VP-adjunction, rather than ν P adjunction. Furthermore, the analysis proposed in this chapter has implications for the status of Case. I have provided strong evidence that Case plays a crucial role in the syntax, hence cannot be pushed outside of

³³ Mamoru Saito (personal communication) points out the following data, which suggest that the relevant contrast is observed even with a structural Case-marker:

- | | | | | |
|------|-----------------------------------|------------------|--------------------|-----------------------------|
| (i) | Hanako-wa | dare-mo-o | hihansi-na-i. | |
| | Hanako-Top | person-every-Acc | criticize-Neg-Pres | |
| | ‘He does not criticize everyone.’ | | | (every > not, *not > every) |
| (ii) | Hanako-wa | dare-o-mo | hihansi-na-i. | |
| | Hanako-Top | person-Acc-every | criticize-Neg-Pres | |
| | ‘He does not criticize everyone.’ | | | (*every > not, not > every) |

In (i), *mo* ‘every’ is c-commanded by the Case-marker and takes scope under negation. In (ii), on the other hand, *mo* ‘every’ c-commands the Case-marker and takes scope over negation. As pointed out by Mamoru Saito, scope bearing elements that are outside of their Case-marker seem to take scope at TP (cf. Kuno and Monane 1979; Shoji 1986). The focus analysis suggested in the text may accommodate this observation if we postulate a focus projection above TP (see Shoji 1986).

the syntax.

The crucial proposal in this chapter is that Case determines phasehood. I have demonstrated it with respect to ν Ps in this chapter, arguing that ν P functions as a phase only when its head is involved in Case-valuation. The current approach contrasts with Chomsky's (2000, 2001, 2004, 2008) rigid approach to phases, where ν Ps with external arguments are always phases. I have shown that Chomsky's approach to phases wrongly predicts that ν P complements of causative verbs, which do not assign Case, should be phases. The case in question is straightforwardly handled under the current analysis, where ν Ps whose head is not involved in Case-valuation do not work as phases. However, it would be quite strange if Case were to matter only for the phasehood of ν Ps. In the next chapter I will show that Case matters for other phases, too. In fact, I explore in the next chapter the possibility that all phasehood depends on Case-valuation.

Chapter 3: Further Extensions: CPs, DPs/NPs, PPs and Beyond

3.1 Introduction

I have argued in chapter 2 that Case-valuation determines phasehood. The discussion there concerned a scope puzzle with Nominative/Accusative conversion in Japanese, where Case of an object affects scope of the object. I have argued that this scope puzzle is explained in a principled way once we assume that (i) QR is phase-bounded and that (ii) Case-valuation determines phasehood. In chapter 2 I was mostly concerned with the phasehood of ν P, arguing that ν P is a phase only when its head is involved in Case-valuation. Given that there are other projections that are claimed to be phases, we would expect that Case-valuation should determine phasehood of those projections, too. In this chapter I extend the hypothesis proposed in the previous chapter to phases other than ν P and explore the possibility that the phasehood of phases other than ν P is also determined by Case-valuation. The chapter is organized in the following way. In section 2 I discuss CP, arguing that CP is not always a phase and that its phasehood is crucially determined by Case, based on cases of A-movement out of CPs. In section 3 I discuss phasehood of DPs/NPs. I show that the Case/phase hypothesis, when coupled with anti-locality, correctly predicts patterns of extraction out of NPs/DPs. In section 4 I discuss phasehood of PPs and APs. In section 5 I return to ν P, discussing another case where ν P does not work as a phase when ν does not assign Case. In section 6 I discuss Baker's (1988) government transparency effects (GTC) and show that the Case/phase hypothesis deduces the GTC effects. In section 7 I summarize this chapter.

3.2 CP and phases: A-movement out of CPs and Case

In this section I discuss phasehood of CPs. I show that A-movement, which is generally assumed to be clause-bounded, can take place out of a CP when the C is not involved in Case assignment. I show that this follows from the current proposal given that C is not a phase head when it is not involved in Case-assignment.

Chomsky (2008) proposes a system where formal features that drive syntactic computation are generated in phase heads, e.g. C, from where they are transferred to lower heads (like T). Thus, Chomsky (2008) proposes that T alone cannot assign nominative Case (i.e. T does not have the feature responsible for nominative Case assignment) but needs to be selected by C, which contains the feature responsible for nominative Case assignment. In other words, C and T together assign nominative Case. This indicates that due to the C-T association, C, which is a phase head, is crucially involved in nominative Case licensing (see also Bošković to appear a and Pesetsky and Torrego 2001). We can then have a parallelism between *v*P as phases and CPs as phases. In other words, just like *v*P is a phase only if *v* is involved in Case-valuation, CP is a phase only if C is involved in Case-valuation (i.e. if T that C is associated with assigns Case). To illustrate this, I will first discuss West Ulster English ECM infinitives, which have been claimed to be CPs (see Bošković 2007a, McCloskey 2000 and Tanaka 2004).

Consider first the following data which show that *all* can be stranded under A'-movement in ECM constructions in West Ulster English:

- (1) a. Who did you expect your mother all to meet at the party?
b. *Who did you arrange for your mother all to meet at the party?

(McCloskey 2000: 70)

In (1a) *all* associated with the *wh*-phrase is floated above *to* in the ECM infinitive. However, as shown in (1b), *all* cannot be stranded above *to* in the infinitive headed by the prepositional complementizer *for*. McCloskey (2000) (see also Bošković 2007a) shows the contrast provides evidence for overt object shift, in particular, the contrast is explained if (1a), but not (1b), involves overt object shift of *your mother*. Overt object shift in (1a) leaves enough space for quantifier float in a position above *to*. This is not the case with (1b), where *your mother* is Case-licensed by *for* within the infinitival complement. Crucially, McCloskey (2000) (see also Bošković 2007a) shows that in long distance extraction cases like (2), *all* is stranded in Spec, CPs:

- (2) What do you think (all) that he'll say (all) that we should buy?

(McCloskey 2000: 62)

Under McCloskey's analysis, the infinitive in (1a) then must be a CP, with *all* stranded in CP, Specs. The example then must involve A-movement out of a CP (I am omitting irrelevant details):

- (3) Who_i did you [_{VP} v-expect_j [_{VP} your mother_k *t_j* [_{CP} *t_i* **all** [_{TP} *t_k* to [_{VP} *t_k* I meet at the party *t_i*?]]]]]]

In (3), the ECMed object *your mother* undergoes overt object shift and *all*, which is associated with *who*, is stranded in the specifier of the CP complement. Significantly, we have here a case of A-movement out of CP. While such movement was previously

apparently incorrectly assumed to be impossible, the Case/phase theory proposed in chapter 2 gives us exactly the right result, allowing A-movement out of the CP in the case at hand.

A-movement out of CPs is standardly ruled out as an instance of improper movement (A-A'-A movement. cf. Chomsky 1973). In fact, If we adopt the rigid approach to phases, where CPs are always phases, A-movement out of a CP should always be ruled out. CP is a phase, hence, any element that moves out of a CP must move to Spec, CPs (due to the PIC). Then A-movement out of CP always leads to improper movement (I am omitting irrelevant details here):

$$(4) \quad *[_{VP} NP_i (A) [_{CP} t_i (A') [_{TP} t_i (A) [_{vP} t_i (A)]]]] \quad \text{(CP is a phase)}$$

The NP originates in Spec, vP . As the CP is a phase, an element that is to move out of this CP must move to the CP edge, which is A'-position. Movement from Spec, CP to another A-position is then ruled out as a case of improper movement. Thus, examples like (2) cannot be ruled in under the rigid approach to phases.

However, the current approach to phases, where Case-valuation determines phasehood, can accommodate such cases. Recall that under the current approach, CP is a phase only when C is involved in Case-valuation. When C is involved in Case-valuation, which means that CP is a phase, A-movement of out of the CP is predicted be impossible for reasons discussed above. Significantly, CP does not work as a phase when C is not involved in Case-valuation under the current proposal. If CP is not a phase, then, an NP that is to move out of a non-phasal CP does not have to move to Spec, CP. Then there is no issue of improper movement. What we saw in (3) is schematically represented below.

(5) $[_{VP} \text{your mother}_i (A) [_{CP} [_{TP} t_i (A) [_{vP} t_i (A)]]]]$ (CP is a not phase) (= (1a)/(3))

Notice again that in (3)/(5) *your mother* is not Case-valued within the infinitive, which under the current theory means that the CP infinitive is not a phase. The ECMed subject then does not have to move to Spec, CP. It is then not surprising that A-movement of the ECMed subject *your mother* can take place out of the CP complement.

It should be noted, though, that we don't necessarily predict that in all cases A-movement has to skip Spec, CP. All we have to do to allow A-movement to proceed via the Spec of a non-phasal CP is to assume that while Spec, CP must be an A'-position when CP is a phase, Spec, CP does not have to be an A'-position when CP is not a phase. The ECMed subject in (3)/(5) could then move via the embedded Spec, CP without involving improper movement. Either way, what is important here is that in West Ulster English ECM infinitives, we have A-movement out of a CP, and that precisely in this case such movement is predicted to be possible under the current theory.

Another case of A-movement out of CP comes from the finite ECM-construction in Japanese (see Hiraiwa 2001a, Hiraiwa 2005, Kuno 1976, Takano 2003, and Tanaka 2002 2004, among others for discussion. See also Hong and Lasnik (2010) and Kang (in prep) for Korean ECM).

- (6) a. John-ga Hanako-Acc baka-da-to omot-ta.
 John-Nom Hanako-Acc fool-cop-that think-Past
 ‘John thought that Hanako is a fool.’
- b. John-ga Hanako-ga baka-da-to omot-ta.
 John-Nom Hanako-Nom fool-cop-that think-Past
 ‘John thought that Hanako is a fool.’

The verb *omow-* ‘think’ takes a CP-complement, as indicated by the presence of *-to*, which is standardly assumed to be a complementizer.¹ *Hanako*, which is semantically the subject of the embedded predicate *baka-da* ‘fool’, can receive either accusative Case (cf.(6a)) or nominative Case (cf.(6b)). Importantly, only the accusative NP is located in the higher clause. Consider first the following examples (Kuno 1976).

- (7) a. John-ga Bill_i-o orokanimo [_i tensai-da-to] omot-tei-ru.
 John-Nom Bill_i-Acc stupidly [_i genius-cop-that] think-Prog-Pres
 ‘John thinks of Bill stupidly as a genius.’
- b. *John-ga [Bill-ga orokanimo tensai-da-to] omot-tei-ru.
 John-Nom [Bill-Nom stupidly genius-cop-that] think-Prog-Pres
 ‘Stupidly, John thinks that Bill is a genius.’ (Tanaka 2002: 637-638)

While the matrix adverb *orokanimo* ‘stupidly’ cannot follow the embedded nominative object (cf. (7b)), the adverb does follow the ECMed object (cf. (7a)). This shows that the ECMed object is in the matrix clause.

¹ This is a commonly held position the original reference for which seems to be Nakau (1971). See Kuno (1973), among many others, for discussion of *to* and Saito (2010b) for recent discussion of the CP-system in Japanese.

There are in principle two ways to analyze (6a). We can either base-generate the accusative object in the matrix-clause, which would control PRO in the embedded clause (cf.(8a)), or move the accusative object from the embedded CP (cf. (8b)). Each option is described below:

- (8) a. control [Hanako-Acc [CP PRO] V]
 b. movement [Hanako-Acc [CP *t*] V]

However, there is evidence that the ECM construction should be analyzed in terms of movement (cf.(8b)) rather than control (cf.(8a)). That is, the accusative object in (6a) moves to the matrix clause. Evidence to this effect comes from the Proper Binding Condition (PBC) effects (see Hiraiwa 2005 and Tanaka 2002). Consider first the following examples:

- (9) a. John-ga [Bill-ga sono-hon-o kat-ta-to] it-ta.
 John-Nom [Bill-Nom the-book-Acc buy-past-that] say-past
 ‘John said that Bill bought the book.’
 b. Sono-hon_i-o John-ga [Bill-ga *t_i* kat-ta-to] it-ta.
 the-book_i-Acc John-Nom [Bill-Nom *t_i* buy-past-that] say-past
 ‘The book_i, John said that Bill bought *t_i*.’
 c. [Bill-ga sono-hon-o kat-ta-to]_i John-ga *t_i* it-ta.
 [Bill-Nom the-book-Acc buy-Past-that]_i John-Nom *t_i* say-past
 ‘[That Bill bought the book]_i, John said *t_i*.’

- d. *[[Bill-ga t_i katta-to]_j [sono-hon_i-o [John-ga t_j it-ta]]].
 [[Bill-Nom t_i bought-that]_j [the-book_i-Acc [John-Nom t_j say-past]]]
 ‘[That Bill bought t_i]_j, the book_i, John said t_j .’ (Tanaka 2002: 639)

(9a) is the base-line example, where the matrix verb *i-* ‘say’ takes a finite CP as its complement. (9b) is an instance of long-distance scrambling (see Saito 1992), where the embedded object *sono hon* ‘the book’ moves to the sentence-initial position. In (9c) the clausal complement undergoes scrambling. (9d) involves both long-distance scrambling and scrambling of the clausal complement. This example is ungrammatical. As Tanaka (2002) points out, the ungrammaticality can be easily explained in terms of a PBC effect: the scrambled clausal complement contains an unbound trace of the embedded accusative object. Importantly, this PBC effect emerges even in examples with an ECMed object:

- (10) a. John-ga Bill_i-o [t_i baka-da-to] omot-tei-ru.
 John-Nom Bill_i-Acc [t_i fool-cop-that] think-Prog-Pres
 ‘John thinks of Bill as a fool.’ (Tanaka 2002: 637)
 b. *[[t_i baka-da-to]_j John-ga Bill-o_i t_j omot-tei-ru.
 [t_i fool-cop-that]_j John-Nom Bill-Acc_i t_j think-Prog-Pres
 ‘[t_i as a fool]_j, John thinks of Bill_i t_j .’ (Tanaka 2002: 639)

(10a) is an ECM construction and (10b) involves scrambling of the ECM-complement. The ungrammaticality of (10b) is explained if the scrambled CP contains an unbound trace of the ECMed object *Bill*. In other words, (10b) is treated on a par with (9d).

Importantly, in genuine control constructions, there is no PBC violation when the complement clause is scrambled:

- (11) a. Taro-wa Hanako-ni_j [_{CP} PRO_j Boston-e ik-u-koto]-o meizi-ta.
 Taro-Top Hanako-Dat Boston-to go-Pres-that-Acc order-Past
 ‘Taro ordered Hanako to go to Boston.’
- b. [_{CP} PRO_j Boston-e ik-u koto]-o_i Taro-wa Hanako-ni_j *t_i* meizi-ta.
 Boston-to go-Pres that-Acc Taro-Top Hanako-Dat order-Past
 ‘Taro ordered Hanako to go to Boston.’ (Hiraiwa 2005:169)

(11a) is a control construction, where the dative object controls PRO in the embedded CP. (11b), where the control clause undergoes scrambling, is grammatical. The contrast between (10b) and (11b) thus provides evidence that the ECM construction in (10b) should be treated in terms of movement.

Having seen that ECMed objects in Japanese undergo movement, let us consider what kind of movement is involved in the ECM construction. It has been known in the literature that clause-internal scrambling shows properties of A-movement (see Saito 1992, 2003 and Tada 1993, among others). Thus, an element that undergoes clause-internal scrambling can license a reciprocal anaphor:

- (12) a. ??Otagai_i-no sensei-ga karera-o hihansi-ta.
 each other-Gen_i teacher-Nom they-Acc_i criticize-Past
 ‘Each other_i’s teachers criticized them_i.’

- b. Karera_i-o otagai_i-no sensei-ga *t_i* hihansi-ta.
 they-Acc_i each other-Gen_i teacher-Nom *t_i* criticize-Past
 ‘Them_i, each other_i’s teachers criticized *t_i*.’ (Tanaka 2002: 640)

The subject in (12a) contains a reciprocal *otagai* ‘each other’, which is not bound. The scrambled object in (12b) can bind the reciprocal, which indicates that clause-internal scrambling behaves like A-movement.

On the other hand, it is also well known that long-distance scrambling, as in (9d), shows properties of A’-movement (see Saito 1992, 2003 and Tada 1993, among others). Thus, elements that undergo long-distance scrambling do not create new binding relations:

- (13) a. ??Otagai_i-no sensei-ga [Mary-ga karera_i-o hihansita-to]
 each other-Gen_i teacher-Nom [Mary-Nom they-Acc_i criticize-Past-that]
 it-ta.
 say-Past
 ‘Each other_i’s teachers said that Mary criticized them_i.’
 b. ??Karera_i-o otagai_i-no sensei-ga [Mary-ga *t_i* hihansi-ta-to]
 they-Acc_i each other-Gen_i teacher-Nom [Mary-Nom *t_i* criticize-Past-that]
 it-ta.
 say-past
 ‘Them_i, each other_i’s teachers said that Mary criticized *t_i*.

(Tanaka 2002: 640)

The matrix subject in (13a) contains a reciprocal pronoun *otagai* ‘each other’, which is not bound. In (13b) the embedded object is moved to the sentence-initial position by long-distance scrambling, but this object still cannot bind the matrix reciprocal.

Significantly, “long-distance” scrambling in the ECM construction shows properties of A-movement, which is confirmed by the fact that a scrambled ECMed object can bind an anaphor. Consider the following sentences:

- (14) a. ??*Otagai*_i-no *sensei*-ga *karera*_i-o [*t*_i [*t*_i *baka-da-to*]]
 each other-Gen_i teacher-Nom they-Acc_i [*t*_i [*t*_i fool-cop-that]]
 omot-tei-ru.
 think-Prog-Pres
 ‘Each other_i’s teachers think of them_i as fools.’
- b. *Karera*_i-o *otagai*_i-no *sensei*-ga [*t*_i [*t*_i *baka-da-to*]]
 they-Acc_i each other-Gen_i teacher-Nom [*t*_i [*t*_i fool-cop-that]]
 omot-tei-ru.
 think-Prog-Pres
 ‘Them_i, each other_i’s teachers think of *t*_i as fools.’

(Tanaka 2002: 640)

In (14b) the embedded subject is scrambled above the matrix subject and the former does bind the latter. (14b) thus patterns with (12b), not (13b).

Let us now consider how (14b) can be analyzed under the current system. What is important here is the fact that ECM movement feeds A-scrambling in (14b). Given the ban on improper movement discussed above, we are led to conclude that ECM movement

out of CP must also be A-movement. (14b) is thus analyzed as follows (I only show the relevant traces):

- (15) [TP *they*_i [TP [*each other*'s teacher] [_{vP} *t*_i (A) [CP [TP [_{vP} *t*_i (A)]]]]]]]
└──┘
 (A-scrambling)

As the ECMed subject gets accusative Case from the matrix verb, which means that the embedded C(-T) does not assign Case to the ECMed subject, the embedded CP is not a phase. The ECMed subject can then move out of this CP without improper movement, as discussed above.² The ECMed subject undergoes A-scrambling after it is moved to the matrix Spec, vP by A-movement.^{3 4}

² As discussed above, the movement does not have to stop in CP Spec since the CP in question is not a phase. Recall however that movement via this CP Spec can also be allowed if we assume that CP Spec must be an A' position only when the CP is a phase.

³ However, scrambling out of this kind of CPs behaves as A'-movement:

- (i) a ??Otagai_i-no supai-ga John-o [_{CP} hoka-no dono-meekaa-yori
 each other_i's spy-Nom John-Acc any other maker more-than
 [Nissan-to-Honda-ni]_i kuwasii-to] omottei-ru.
 [Nissan-and-Honda-with]_i familiar-Comp think-Pres
 'Each other_i's spies think of John as more familiar with [Nissan and Honda]_i than any other
 manufacturers.'
 b. ??[Nissan-to Honda-ni]_i otagai_i-no supai-ga John-o
 [Nissan and Honda-with]_i each other_i's spy-Nom John-Acc
 [_{CP} hoka-no dono-meekaa-yori *t*_i kuwasii-to] omottei-ru.
 any other maker more-than *t*_i familiar-Comp think-Pres
 'With [Nissan and Honda]_i, each other_i's spies think of John more familiar than any other
 manufacturers.' (Tanaka 2004)

(ia), where the reciprocal is not bound, is ungrammatical. In (ib), the embedded dative argument, which can potentially bind the reciprocal, is moved to the initial position of the sentence. The sentence is still degraded. Note that the system developed here predicts that A-movement out of CP should be possible, but it does not predict that all instances of movement in the relevant context should be A-movement. While a system that does not allow A-movement out of CP at all faces an insurmountable problem with (14b), additional assumptions can be easily adopted within the current system to block (ib). For example, as discussed by Bošković (2010b), if A-scrambling involves X-feature driven movement, and if finite CPs have X feature, A-scrambling out of finite CPs will be ruled out for reasons completely independent from the current concerns (Attract Closest).

Another case of A-movement out of CP is discussed by Takahashi and Uchibori (2003).⁵

- (16) a. Huziko-ni-(wa) [_{CP} Yawara-ga kin medaru-o to-ru to] omoe-ta.
 Fujiko-Dat-Top Yawara-Nom gold medal-Acc win-Pres that seem-Past
 ‘It seemed to Fujiko that Yawara would win a gold medal.’
- b. Yawara-ga Huziko-ni-(wa) [_{CP} kin medaru-o to-ru to] omoe-ta.
 Yawara-Nom Fujiko-Dat-Top gold medal-Acc win-Pres that seem-Past
 ‘lit Yawara seemed to Fujiko that would win a gold medal.’

(Takahashi and Uchibori 2003: 301-303)

In (16a) the subject of the verb *to(ru)* *Yawara* is located in the embedded clause, which is headed by the complementizer *–to*. In (16b), the subject is dislocated from the embedded verb and placed in the initial position of the sentence. Takahashi and Uchibori dub this construction (16b) *pseudoraising*. The following examples concerning the PBC effect show that pseudoraising involves movement (see Takahashi and Uchibori 2003 for other arguments).

- (17) a. [_{CP} Yawara-ga kin medaru-o to-ru to]_i Huziko-ni-(wa) *t_i*
 Yawara-Nom gold medal-Acc win-Pres that Fujiko-Dat-Top
 omoe-ta.
 seem-Past
 ‘It seemed to Fujiko that Yawara would win a gold medal.’

⁴ Note also that I am not assuming that ECM infinitives are CPs in all languages, so the above discussion of West Ulster English and Japanese would not necessarily extend to other languages.

⁵ See also Uchibori (2000) for much relevant discussion.

- b. *_{[CP t_i kin medaru-o to-ru to]_j Yawara_i-ga Huziko-ni-(wa) t_j}
- gold medal-Acc win-Pres that Yawara_i-Nom Fujiko-Dat-Top
- omoe-ta.
- seem-Past
- ‘lit. Yawara seemed to Fujiko that would win a gold medal.’

The clausal complement in (17a) undergoes scrambling. (17b) shows that the scrambled CP cannot precede the nominative subject, which indicates that there is an unbound trace of the movement in the CP complement. (17a) then can be analyzed on a par with (10b).

Case plays an important role in the pseudoraising construction (see Takahashi and Uchibori 2003). The relevance of Case in pseudoraising can be shown by the fact that the dislocated subject undergoes Nominative/Genitive conversion (see Harada 1971, 1976, Hiraiwa 2001b, 2005, Miyagawa 1993, 2011b, Ochi 2001, 2009, Saito 2004, and Watanabe 1996, and references therein for discussion). It is well-known that subjects in Japanese can bear genitive Case in certain contexts. Relative clauses are one such case:

- (18) a. John-ga/*no odot-ta.
- John-Nom/*Gen dance-past
- ‘John danced.’
- b. Kinoo John-ga/no odot-ta toki
- yesterday John-Nom/Gen dance-Past time
- ‘the time John danced yesterday.’

While the genitive subject is disallowed in (18a), it is allowed once the sentence modifies a noun (cf. (18b)). There has been much debate as to how genitive subjects are licensed (see the references cited above). What is important for our purposes is that some functional head assigns genitive Case to this subject. Turning back to pseudoraising, we can see that only the dislocated subject can undergo Nominative/Genitive conversion:

- (19) a. Kinoo Huziko-ni [_{CP} Yawara-ga/*no kin medaru-o to-ru
 yesterday Fujiko-Dat Yawara-Nom/Gen gold medal-Acc win-Pres
 to] omoe-ta toki
 that seem-Past time
 ‘lit. The time it seemed to Fujiko that Yawara would win a gold medal.’
- b. Kinoo Yawara-ga/no?? Huziko-ni [_{CP} kin medaru-o to-ru to]
 yesterday Yawara-Nom/Gen Fujiko-Dat gold medal-Acc win-Pres that
 omoe-ta toki
 seem-Past time
 ‘lit. the time Yawara seemed to Fujiko that would win a gold medal.’

The subject in (19a) is in the embedded clause and cannot be genitive.⁶ I assume that when the subject remains in the embedded clause, the subject is Case-licensed within the complement CP. The subject in (19b), on the other hand, moves to the matrix clause. This subject can be genitive, which indicates that the subject is Case-licensed in the matrix clause when it moves there. This in turn indicates that the embedded C(-T) is not

⁶ It is well-known that subjects cannot be genitive when they co-occur with an accusative object, as in (21a) (see Bošković 2011b, Harada 1971, Watanabe 1996, Hiraiwa 2001b, 2005, Saito 2004, Ochi, 2009, and Miyagawa 2011b, among many others, for discussion). What is important here is that (21b) is better than typical examples involving such co-occurrence.

involved in Case-valuation, which makes the embedded CP non-phasal under the current analysis.

It is then not surprising that the dislocated subject can bind a reciprocal, just as in the case of the ECM construction (cf. (14b)). This is illustrated by the following data:

- (20) Yawara to Huziko_i-ga otagai_i-no hahaoya-ni [_{t_i} kin
 Yawara and Huziko-Nom each other_i-Gen mother-to gold
 medaru-o to-ru-to] omoe-ta
 medal-Acc win-Pres-that seem-past.
 ‘lit. Yawara and Fuziko seemed to each other’s mothers that would win a gold
 medal.’ (Takahashi and Uchibori 2003: 303)

Here the matrix subject binds a reciprocal, which indicates that the movement in question is A-movement. We then again have a case of A-movement out of CP. And this is again a case where such movement is expected. We have seen in (19) that the embedded C(-T) is not involved in Case-valuation, which means that the embedded CP does not constitute a phase in the system developed here. It is then not surprising that A-movement out of CP is possible here.⁷

⁷ However, Takahashi and Uchibori (2003) observe that scrambling out of these complement CPs behaves as A'-movement:

- (i) *[Yawara-to-Huziko]_i-ni Sayaka-ga otagai-no hahaoya_i-ni-wa
 Yawara-and-Huziko-Dat Sayaka-Nom each.other-Gen mother-Dat-Top
 aitagat-tei-ru-to omoe-ta.
 see-want-Prog-Pres-that seem-Past
 ‘lit. Yawara and Fujiko, Sayaka seemed to each other’s mother that wanted to see.’
 (Takahashi and Uchibori 2003: 317)

In (i), the dative object in the CP-complement is scrambled to the sentence-initial position. This dative object, however, cannot bind the reciprocal. See Boškovic (2010b) and footnote 3 for discussion.

Finally, let us consider certain kinds of scrambling first discussed by Nemoto (1993). We have already seen that scrambling out of finite CPs behaves as A'-movement (cf.(13)). Nemoto (1993) observes that scrambling out of control infinitives behaves as A-movement:⁸

- (21) a. *Joe-ga otagai_i-no yuuzin-ni [PRO Michael to Janet_i-o
Joe-Nom each other-Gen friends-Dat Michael and Janet-Acc
hihansu-ru yooni] tanon-da.
criticize-Pres ask-Past
‘lit. Joe asked each other’s friends to criticize Michael and Janet.’
- b. Michael to Janet_i-o Joe-ga otagai_i-no yuuzin-ni
Michael and Janet-Acc Joe-Nom each other-Gen friends-Dat
[PRO _{t_i} hihansu-ru yooni] tanon-da.
criticize-Pres ask-Past
‘lit. Michael and Janet, Joe asked each other’s friends to criticize.’

(Nemoto 1993: 44)

I assume with Nakau (1971) and Uchibori (2000) that *yooni*, which is the head of the control clause, is C, which indicates that the control infinitive in question is CP. In (21a) the reciprocal is not bound. However, in (21b), the object in the complement clause undergoes long-distance scrambling and binds the matrix reciprocal. Thus, long-distance scrambling out of a control infinitive counts as A-movement. This is also captured under the present hypothesis given that C(-T) in the control clause is not involved in

⁸ But see Takano (2010) for more comprehensive discussion.

Case-valuation. As C(-T) in the control clause is not involved in Case-valuation, in spite of being a CP, the control clause does not constitute a phase. Hence, the fact that A-movement can take place out of such clauses can be accommodated under the current analysis.⁹

To summarize, in this section, I have discussed a number of cases where A-movement takes place out of a CP. Crucially, in all these cases, the CP in question does not work as a phase in the current system, as a result of which the cases in question can be straightforwardly accounted for under the current system. Most importantly, I have shown that just like a *v*P works as a phase only if its head is involved in Case-valuation, CP works as a phase only when its head is involved in Case-valuation.

3.3 NP/DPs and phases: Extraction of nominal complements in Serbo-Croatian

In this section I extend the current proposal to nominal domains, following Bošković's (to appear a) extension of the Case/phase hypothesis proposed in chapter 2. In this section I will summarize Bošković's (to appear a) analysis (see, however, Bošković 2010a for an alternative account). Before we discuss Bošković's (to appear a) analysis, I briefly summarize the findings of chapter 2, which are relevant here.

I argued in chapter 2 that Case-valuation determines phasehood based on an analysis of a scope puzzle in Japanese Nominative/Accusative Conversion. The relevant data are repeated here:

⁹ To the extent the analysis is successful, the current analysis thus argues against the null Case approach to control (see Bošković 1997, Chomsky and Lasnik 1993, and Martin 1996, among others), in which PRO bears null Case. However, if the null Case theory were to be adopted, we could assume that C is not involved in null Case assignment, hence CP would not be a phase here. Null Case would then be treated differently from nominative Case (null Case is anyway treated quite exceptionally in the works cited above).

- (22) a. John-ga migime-dake-o tumur-e-ru.
 John-Nom right.eye-only-Acc close-can-Pres
 ‘John can close only his right eye.’ (?*only > can, can > only)
 ‘It is only his right eye that John can close.’ (?*only > can)
 ‘John can wink his right eye.’ (can > only)
- b. John-ga migime-dake-ga tumur-e-ru.
 John-Nom right.eye-only-Nom close-can-Pres
 ‘John can close only his right eye.’ (only > can, can > only)
 ‘It is only his right eye that John can close.’ (only > can)
 ‘John can wink his right eye.’ (can > only)

As discussed in chapter 2, the nominative object, but not the accusative object, can take scope over *e* ‘can’. I argued that this contrast can be explained once we assume that (i) QR of *dake* ‘only’ is phase-bounded, and that (ii) Case-valuation determines phasehood. Thus, in (22a), *v* assigns accusative Case to the object, which means that *v*P works as a phase. QR of *dake* ‘only’ is bound to *v*P. As a result, *dake* ‘only’ cannot take scope over the potential morpheme, which selects the *v*P complement. On the other hand, in (22b), the object gets Case from C-T, which means that *v* does not assign Case to the object. *v*P is then not a phase here.

Bošković (to appear a) further notes that the proposal predicts that if a verb assigns *inherent* Case to an object, the scope of the object should not be restricted to the *v*P-domain (i.e. there is no *v*P phase created by Case-valuation). The underlying assumption is that inherent Case comes together with theta-role assignment (Chomsky

1986a). Hence, there is no regular Case-valuation in inherent Case contexts (see Bošković 2010a). This prediction was borne out by the following example:

- (23) Taroo-wa daitouryou-dake-ni a-e-ru.
 Taro-Top president-only-Dat meet-can-Pres
 'Taro can meet only with the president.' (only > can, can > only)
 'It is only the president that Taro can meet with.' (only > only)
 'Taro can meet with the president without any other people around.'
 (can > only)
 (Bošković to appear a)

Dake 'only' in the dative object in (23) can take scope over or under *-e* '-can'. Dative objects apparently pattern with nominative objects (cf. (22a)), not accusative objects in the relevant respect (cf. (22b)). This is exactly what is expected under the current system because verbs that assign inherent Case do not project phases, which means that, not being a phase, lower *vP* does not block QR of *dake* in (23). The inherent/structural Case distinction will also be important below.

We are now ready to discuss the SC data in depth. Bošković (2008) observes that there is a fundamental difference between languages where Traditional Noun Phrases (TNPs) have articles and languages where TNPs do not have articles, which is motivated by the following generalizations (see Bošković 2010b for additional generalizations):¹⁰

¹⁰ I refer the reader to Bošković (2008, 2010b) for detailed discussion, which includes illustrations of the generalizations and the definition of the phenomena in question. For example, scrambling in (24b) refers to Japanese style long-distance scrambling (not what is often called scrambling in e.g. German). Note also that what is crucial is the presence/absence of a definite article because Slovenian, which has an indefinite article but lacks a definite article, behaves like article-less languages. See Bošković (2009) for Slovenian.

- (24)
- a. Only languages without articles may allow left-branch extraction.
 - b. Only languages without articles may allow adjunct extraction from TNPs
 - c. Only languages without articles may allow scrambling.
 - d. Multiple-wh fronting languages without articles do not show superiority effects.
 - e. Only languages with articles may allow clitic doubling.
 - f. Languages without articles do not allow transitive nominals with two genitives.
 - g. Head-internal relatives display island sensitivity in languages without articles, but not in languages with articles.
 - h. Polysynthetic languages do not have articles.
 - i. Only languages with articles allow the majority reading of MOST.
 - j. Article-less languages disallow negative raising (i.e strict clause-mate NPI licensing under negative raising); those with articles allow it.

These generalizations, which are syntactic and semantic in nature, show that there is a radical difference in the TNP of languages with and without articles that cannot be reduced to PF (overt v.s. null articles). Bošković (2008, 2010a, 2010b) shows that this can be accounted for and all the generalizations in question are deduced if, in contrast to languages with articles, languages without articles lack the DP projection. I call this analysis NP/DP analysis in this chapter. Bošković's main point is that we simply cannot assume that article-less languages have D(P)s/articles which are not phonologically

realized. I will now briefly discuss (24a) and (24b) and use them as illustrations regarding how the NP/DP analysis deduces the generalizations in (24). (24a) is repeated below:

(25) Only languages without articles may allow left-branch extraction.

(25) can be illustrated by the fact that while English, which has articles, disallows left branch extraction (LBE), SC and Russian, which do not have articles, allow LBE

(26) *Expensive_i he saw [_i cars]

(27) Skupa_i je vidio [_i kola] (SC)

expensive is seen car

(28) Doroguju_i on videl [_i mašinu] (Russian)

expensive he saw car (Bošković to appear a)

Bošković (2005) observes that the only two Slavic languages that have articles, namely Bulgarian and Macedonian, disallow LBE, while other Slavic languages, which do not have articles (e.g. SC, Russian, Polish, Czech, Ukrainian, Slovenian), allow LBE. As for Romance languages, Bošković (2008) notes that Latin, which didn't have articles, did allow LBE, while modern Romance languages, which have articles, disallow LBE. LBE is also allowed in Mohawk, Southern Tiwa and Gunwinjguan languages and they all lack articles (Baker 1996).

Let us now turn to adjunct extraction. The relevant generalization, which is actually due to Stjepanović (1998), is repeated below:

(29) Only languages without articles may allow adjunct extraction from TNPs.

It is well known that English disallows adjunct extractions out of DPs, which is demonstrated by the following examples (see Culicover and Rochemont 1992, Chomsky 1986b, Stowell 1989, Huang 1982, Lasnik and Saito 1992):

- (30) a. Peter met [_{NP} girls from this city]
b. *From which city_i did Peter meet [_{NP} girls *t*_i]?

While Basque, Bulgarian, Dutch, Spanish, and Icelandic, which have articles, disallow adjunct extraction out of DPs hence pattern with English, Hindi, SC, Russian, Slovenian, Polish, Czech, and Ukrainian, which lack articles, do allow adjunct extraction (data are taken from Bošković (to appear a)):

- (31) Iz kojeg grada_i je Petar sreo [djevojke *t*_i]
from which city is Peter met girls
'From which city did Peter meet girls?' (SC)
- (32) Iz kakogo goroda_i ty vstrechal [devushek *t*_i]?
from which city you met girls (Russian)
- (33) *Ot koj grad_i Petko [sreštna momičeta *t*_i]?
from which city Petko met girls (Bulgarian, Stjepanović 1998)
- (34) *¿En dónde robaron [una estatua *t*]?
in where (they)stole a statue (Spanish, Ticio 2003)

(35) *Frá hvaða borg sérð þú stelpur?

from which city see you girls (Icelandic, Gísli Harðarson, p.c.)

Bošković (2005) proposes a unified account of (25) and (29). Bošković (2005) analyzes DPs on a par with CPs, which are phases (see Chomsky 2000 for the phasal status of CPs).¹¹ Given the PIC which states that an element that moves beyond a phase boundary must move to the phase edge, elements extracted out of DP in DP languages must move to the DP edge. There are two additional assumptions adopted in Bošković (2005).

(36) a. Adjectives, as well as, adjuncts are adjoined to NPs.

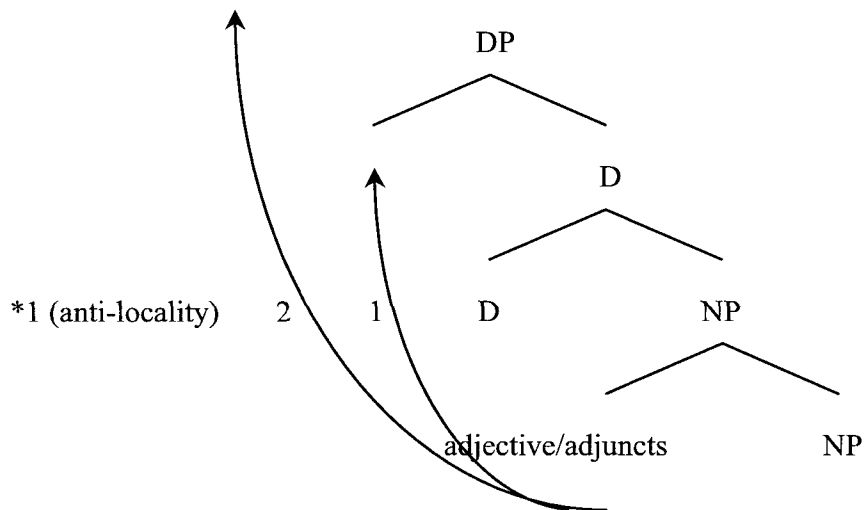
b. Anti-locality hypothesis (see Abels 2003, Beockx 2005, Boeckx and Grohmann 2007, Bošković 1994, 1997, Grohmann 2000, and Saito and Murasugi 1999, among many others).

(36b) states that movement cannot be too short. The version of the anti-locality hypothesis employed by Bošković (2005) dictates that movement needs to cross at least one full phrasal boundary. These assumptions in tandem deduce the generalizations (25) and (29) in a principled way. Consider the following derivation:

¹¹ One might wonder how phasehood of DP can be connected to the Case/phase hypothesis explored in this thesis. One possibility, which is suggested in Bošković (to appear a), is a Legate-style cyclic agreement (see Legate 2005). D, which has an unvalued Case-feature, first establishes a feature-checking relation with N, which also has an unvalued Case-feature (see Frampton and Gutmann 2000 and Pesetsky and Torrego 2007 for claims that a feature checking relation can be established even if both the probe and the goal are unvalued). D later Agrees with *v* or T and N receives the value that the D has received from *v* or T (i.e. D passes along the value to N). D is then crucially involved in Case-valuation here, which makes a DP a phase. See, however, chapter 4 for relevant discussion.

(37) DP-languages

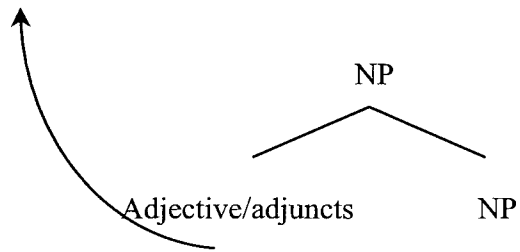
*2 (PIC)



Movement given in 1 violates anti-locality: adjectives/adjuncts are not crossing one full phrase/category (note that that they are dominated only by one segment of the NP which they are adjoined to; what dominates them is a segment, not a full phrase/category). On the other hand, movement described in 2 violates the PIC. Thus, adjectives/adjuncts cannot be extracted in DP languages.

Consider now NP-languages, where the movement in question may be possible. Bošković (2005) analyzes NPs as on a par with TPs, which are not phases (see Chomsky 2000 for the non-phasal status of TPs). Bošković (2005) thus proposes that NPs are not phases:

(38) NP-languages



As there is no DP phase, adjective/adjuncts can move beyond the NP without violating the PIC. LBE and adjunct extraction are thus allowed in NP-languages.

Interestingly, Bošković (2005) observes that LBE is not totally free in SC. SC disallows deep left branch extraction (i.e. LBE out of a nominal complement) (see also Bošković (2010a, to appear a)). Consider the following data:

- (39) a. On je vidio [_{NP} [_{N'} prijatelja [_{NP} njegove [_{NP} majke]]]].
 he is seen friend his(gen) mother(gen)
 'He saw a friend of his mother.'
- b. *Čije_i je on vidio [_{NP} [_{N'} prijatelja [_{NP} *t*_i [_{NP} majke]]]]?
 Whose(gen) is he seen friend mother(gen)
 'Whose mother did he see a friend of?' (Bošković to appear a)

(39b) is ungrammatical due to extraction of the possessor *Čije* 'whose' from the NP.¹² This shows that just like DP blocks LBE out of NP in DP languages, the higher NP blocks LBE out of the lower NP in (39b). In other words, the higher NP in (39b) has the same blocking effect on LBE on SC as the DP does in English in (26).

¹² Bošković treats possessors in SC as NP-adjoined as they behave in every respect like adjectives, which are NP-adjoined (see also chapter 4).

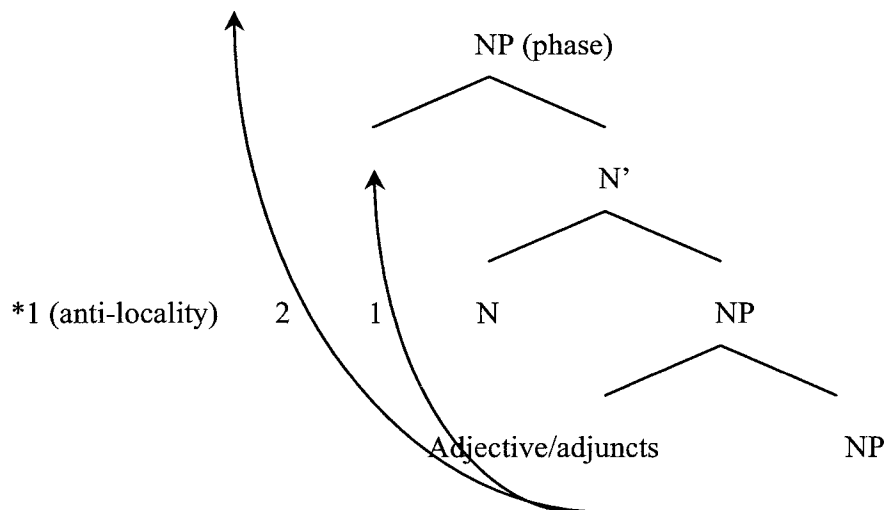
Bošković (to appear a) observes that deep adjunct extraction is also impossible:

- (40) *Iz kojeg grada_i je Petar sreo [prijatelje [djevojke t_i]]
 from which city is Peter met friends girls
 'From which city did Peter meet friends of girls?' (Bošković to appear a)

To account for (39) and (40), Bošković (2010a, to appear a) proposes that NPs are in fact phases in NP languages. Consider the following derivation:

- (41) NP-languages

*2 (PIC)



As the higher N is a phase head, adjectives and adjuncts cannot move to the phase edge (higher Spec, NP) due to anti-locality. Furthermore, they cannot move across the higher NP due to the PIC.

As Bošković (to appear a) discusses, one interesting consequence of the above discussion is that there is no *nP* (at least in SC, see Bošković (2010a, to appear a) for discussion). Given that *nP* is treated on a par with *vP*, it is natural to assume that *nP* would be a phase. To rule in left branch extraction and adjunct extraction, we would then have to assume that adjectives and adjuncts are *nP*-adjoined. If they were NP-adjoined, LBE would be incorrectly ruled out due to the PIC and anti-locality (*nP* would block LBE in SC just like DP blocks LBE in English). However, we then could not rule out deep LBE or deep adjunct extraction because the movement in question would move adjectives/adjuncts across a full phrase (i.e. higher NP):

$$(42) \quad [_{nP} \text{ ADJ } [_{NP} [_{nP} t \text{ } [_{NP} \text{ }]]]]]$$

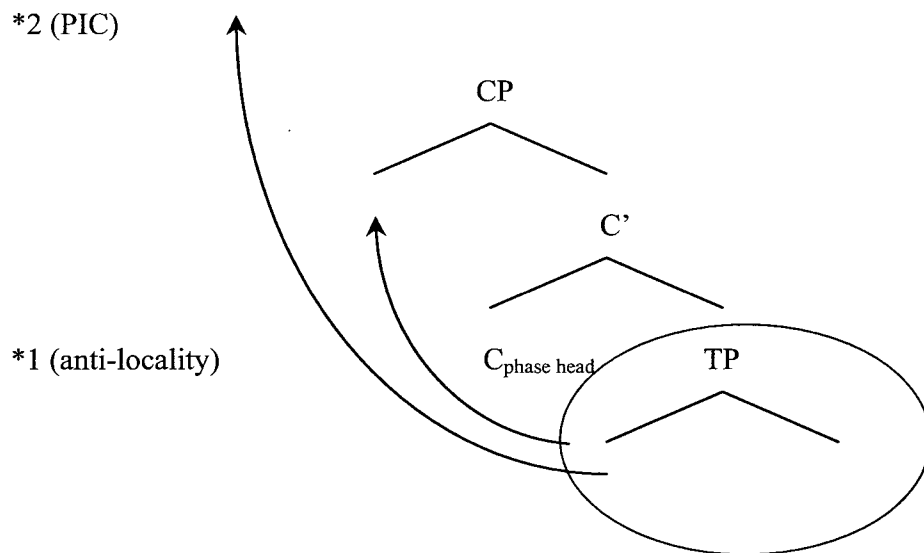
Adjuncts and adjectives are adjoined to the lower *nP*, and move to the higher *nP* edge in (42). This movement does not violate anti-locality (i.e. adjectives/adjuncts move across the higher NP, which counts as a full phrase).

Bošković (to appear a) further motivates the above analysis by examining the behavior of NP complements in terms of their extractability. Of relevance here is Abels's (2003) Stranding Generalization, which says that phase head complements are immobile. Consider the following examples, which show that while CPs can be topicalized, IPs cannot be:

- (43) a. Nobody believes that anything will happen.
 b. That anything will happen, nobody believes.
 c. *Anything will happen, nobody believes that. (Abels 2003:116)

In (43b) the complement CP undergoes topicalization. On the other hand, in (43c) the IP complement of the C head undergoes topicalization, which is impossible. This shows that complements of phase heads are immobile (see Abels (2003) for comprehensive discussion). This generalization can be explained by anti-locality and the PIC:

(44)



The C head in (44a) is a phase head. The TP complement must move to the CP edge. This is impossible due to anti-locality. Furthermore, the TP complement cannot move across the CP due to the PIC. Anti-locality and the PIC thus in tandem derive the Stranding Generalization.

Turning back to the SC NP in (41), given the Stranding Generalization, we predict that the complement NP in (41) should be immobile. Bošković shows that this prediction is in fact borne out. In SC, genitive complements of nouns cannot be extracted (see Zlatić 1997):

- (45) a. ?*Ovog studenta sam pronašla [knjigu t_i]
 this student(gen) am found book
 ‘Of this student I found the book/a book.’
- b. *Koga sam pronašla [knjigu t_i]
 who (gen) am found book
 ‘Of whom did you find the book/a book?’ (Bošković (to appear a))

Thus, the ban on deep left branch extraction, the ban on deep adjunct extraction, and the ban on movement of complement NP receive a unified account. Under this new proposal, simple left branch extraction and simple adjunct extraction are both allowed because adjectives and adjuncts are base-generated at the NP edge, which avoids the violation of the PIC when they move out of an NP.

Notice that in all the cases discussed above, NP-complements are genitive, which is the nominal counterpart of verbal accusative. Bošković (to appear a) in fact treats adnominal genitive Case in SC as a structural Case, which in my system means that genitive-assigning nouns are phase heads.¹³ (45a-b) therefore fall under the Stranding Generalization. Recall that we have seen above that under the current proposal, a verb that assigns inherent Case does not project a phase because the verb is not involved in Case-valuation (cf. (23)). Significantly, just like there are verbs in SC that assign special inherent Case, there are nouns that assign special inherent Case. We then predict that when NP complements bear non-structural Case, extraction should be possible. Bošković (to appear a) shows that this surprising prediction is in fact borne out:

¹³ See footnote 13 for evidence to this effect.

- (46) ?Kakvom_i ga je uplašila pretnja [_i smrću]?
 what-kind-of him is scared threat death(instr)
 ‘Of what kind of death did a threat scare him?’

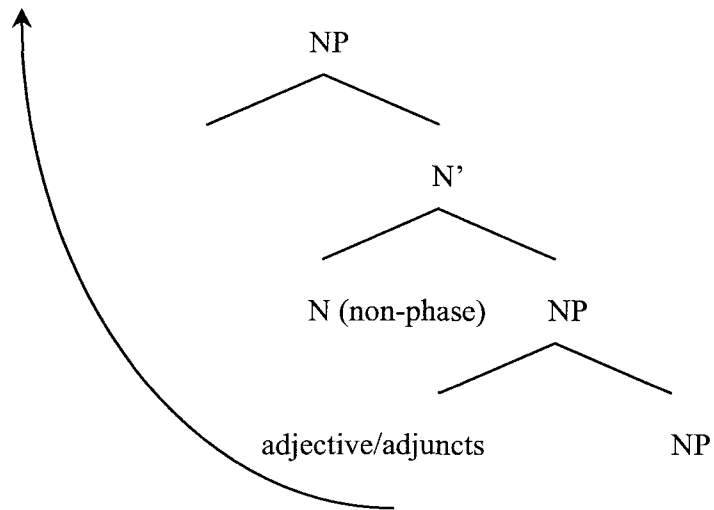
(Bošković to appear a)

- (47) ?Iz kojeg grada_i ga je uplašila pretnja [djevojkama _i]
 from which city him is scared threat girls(dat/instr)

(Bošković to appear a)

(46) is a case of deep left branch extraction with a noun in instrumental Case. (47) is a case of deep adjunct extraction with instrumental/dative Case. Bošković (to appear a) argues that instrumental/dative Case in such constructions is inherent Case that is assigned together with a theta-role, not through regular Case-valuation. That is, *pretnja* ‘threat’ is not a structural Case assigner. Bošković observes that, given the Case/phase hypothesis, this noun then should not project a phase, as a result of which deep LBE and deep adjunct extraction are correctly expected to be possible:

(48)



As the N head does not assign structural Case, it does not project a phase. Thus, adjectives and adjuncts can undergo deep extraction here without violating the PIC.

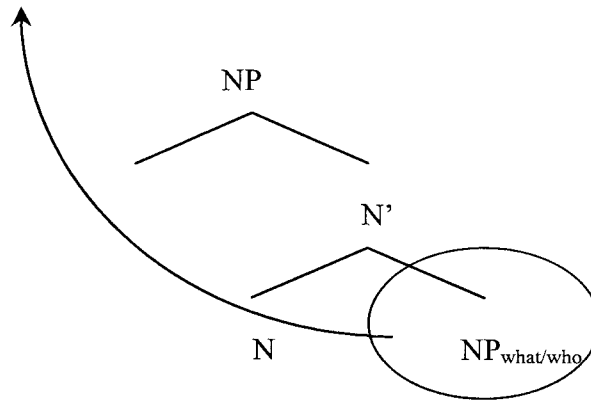
Significantly, Bošković observes that nominal complements that bear inherent Case can also be extracted:

- (49) a. Čime_i ga je [pretnja *t_i*] uplašila?
 what.**instr** him is threat scared
 'The threat of what scared him?'
- b. Kome_i je [otpor *t_i*] bio snažan?
 who.**dat** is resistance been strong
 'Resistance to whom was strong?'

This is again expected under the Case/Phase hypothesis:

(50)

No PIC-violation



As the noun assigns inherent Case to its complement, this NP does not project a phase. The complement thus can be extracted without violating the PIC.

Bošković also observes that the current proposal further predicts that PP complements, which do not bear Case, should also be extractable, which is indeed borne out:

- (51) [O kojem novinaru]_i si pročitao [članak *t*₁]?
 about which journalist are read article
 ‘About which journalist did you read an article?’

As the PP complement does not bear Case, the noun does not assign Case, which means that the NP is not a phase. Extraction of the complement is thus predicted to be possible, just as in (49).

Bošković (to appear a) shows that it is not the case that NP is a phase only in NP languages. The above applies to DP languages, as would be expected under the Case/phase hypothesis because it would be very hard to parameterize it along the DP/NP

lines. Bošković (to appear a) shows this point based on German data. Interestingly, German shows the same pattern as SC, which indicates that German NPs are phases. In German, extraction of genitive complements is impossible:

- (52) a. Ich habe Bilder der Pyramiden gesehen.
 I have pictures the-gen.pl pyramids seen
 ‘I have seen pictures of the pyramids.’
 b. *Wessen hast du Bilder gesehen?
 whose-gen have you pictures seen?
 c. *Der Pyramiden habe ich bilder gesehen.
 d. Du hast Bilder Berlins gesehen.
 you have pictures Berlin-gen seen
 e. **Berlins* hast du bilder gesehen. (Bošković to appear a)

(52b), (52c), and (52e), in which genitive complements are extracted, are all ungrammatical.¹⁴ This can be analyzed on a par with (45). Furthermore, prepositional genitive complements in German can be extracted:

- (53) a. Von Berlin hast du Bilder gesehen.
 of Berlin have you pictures seen
 b. Wovon hast du Bilder gesehen?
 where-of have you pictures seen (Bošković to appear a)

¹⁴ See, however, Bobaljik and Wurmbrand (to appear) regarding the scope of German genitives.

As the underlined elements are PPs, which do not bear structural Case, (53a) and (53b) can be analyzed on a par with (51).

Notice that the data concerning extraction we have seen in this section show a striking parallelism with the data concerning scope of *dake* ‘only’. We saw that QR of *dake* ‘only’ out of ν P is impossible when ν assigns structural accusative Case but it is possible when it assigns dative Case:

- (54) John-ga migime-dake-o tumur-e-ru.
 John-Nom right.eyel-only-Acc close-can-Pres
 ‘John can close only his right eye.’ (??*only > can, can > only)
 ‘It is only his right eye that John can close.’ (??*only > can)
 ‘John can wink his right eye.’ (can > only)
- (55) Taroo-wa daitouryou-dake-ni a-e-ru.
 Taro-Top president-only-Dat meet-can-Pres
 ‘Taro can meet only with the president.’ (only > can, can > only)
 ‘It is only the president that Taro can meet with.’ (only > only)
 ‘Taro can meet with the president without any other people around.’
 (can > only)

In (54), the object gets accusative Case from ν , which means that ν is involved in Case-valuation. *Dake* ‘only’ cannot undergo QR out of ν P hence *dake* must take scope under the potential morpheme. On the other hand, in (55), the object gets inherent dative Case (see above). *Dake* ‘only’ can undergo QR out of ν P (since ν is not involved in Case-valuation). *Dake* can then take scope over the potential morpheme. What we have

seen is then that when a head assigns structural Case, extraction/QR out of its projection is impossible while extraction/QR is possible when the head assigns inherent Case. The Case/phase hypothesis provides a unified account of the data observed above.

In sum, we have seen that NP is a phase only when its head assigns structural Case. The Case/phase hypothesis proposed in chapter 2 provides a unified account of the data regarding extraction from SC and German NPs/DPs and the facts regarding the scope of Japanese *dake* ‘only’, which should be taken as a strong argument for the proposal.

3.4 PPs and phases

In this section I discuss phasehood of PPs. Under the present analysis, when P assigns Case to its complement, movement of the complement of the PP is predicted to be impossible. This prediction is in fact borne out by the SC data discussed in Bošković (2010a). There is evidence that prepositions in SC assign structural Case to their complements. As discussed in chapter 2, Bošković (2006) and Franks (1994), among others, argue that while structural Case does not have to be assigned, inherent Case must be assigned. As a result, when structural Case and inherent Case need to be assigned to a single noun, structural Case is overridden. Consider the following example, where the numeral assigns genitive to *cars*:

- (56) On kupuje pet kola
 he buys five cars_{GEN} (Bošković 2010a)

Kupuje ‘buy’ normally assigns accusative Case in SC. However, the accusative assigned by *kupuje* ‘buy’ is overridden by the genitive Case assigned by the numeral *pet* ‘five’ in

(56). Franks (1994) thus argues that genitive Case assigned by SC numerals is an inherent Case, which cannot be overridden, but accusative Case assigned by verbs in SC is a structural Case, which can be overridden.¹⁵ It is then expected that when two kinds of inherent Case must be assigned to a single noun, the resulting sentence should be ungrammatical. The following data that involve the verb *pomaže* ‘help’ and the numeral illustrate this point.

(57) On pomaže ljudima.

he helps people_{DAT}

(58) *On pomaže pet ljudima.

he helps five people_{DAT}

15 Bošković (2010a) also shows that genitive Case assigned by nouns is structural. In SC numerals 2-4 assign genitive singular. This Case assignment is obligatory:

- (i) a. opis knjiga
description book_{GEN.PL}
b. opis tri knjige
description three book_{GEN.SG}

(Bošković 2010a)

In (ia) *opis* assigns genitive plural to its complement. However, with the numeral *tri* ‘three’, the complement gets genitive singular from the numeral, which indicates that the genitive Case assigned by the noun in (i) is overridden. This means that the genitive Case in (ia) is structural. In contrast, instrumental Case assigned by *pretnja* ‘threat’ is an inherent Case. Evidence to this effect comes from the incompatibility of this Case with genitive of quantification i.e. from the fact that the complement cannot appear with a numeral (see the discussion of (57)-(59))

- (i) Milanova pretnja otkazom je jako uplašila sve zaposlene.
Milan’s threat_{NOM} firing_{INSTR} is very scared all employees_{ACC}
‘Milan’s threat of firing scared all employees very much.’
- (ii) *Milanova pretnja pet otkaza je jako uplašila sve zaposlene.
Milan’s threat_{NOM} 5 firing_{PL/GEN} is very scared all employees_{ACC}
‘Milan’s threat of 5 firings scared all employees very much.’
- (ii) *Milanova pretnja pet otkazima je jako uplašila sve zaposlene.
Milan’s threat_{NOM} 5 firing_{PL/INSTR} is very scared all employees_{ACC}
‘Milan’s threat of 5 firings scared all employees very much.’

Miloje Despić (p.c.)

In (i), *pretnja* ‘threat’ takes a complement, which gets instrumental Case. In (ii) and (iii), there is a numeral 5, which also assigns inherent Case to the following noun. The derivation in (ii) and (iii) cannot converge because the two inherent Cases (one from the *pretnja* and the other from the numeral) cannot be assigned to a single noun (see also the discussion of (57)-(59) in the text).

(59) *On pomaže pet ljudi.

he helps five people_{GEN} (Bošković 2010a)

Pomaže ‘help’ in (57) assigns inherent dative Case to its object. Significantly, this verb is incompatible with genitive of quantification, as shown in (58) and (59). The object in (58) is dative and the object is genitive in (59). This is accounted for given that both the dative Case assigned by the verb and the genitive Case assigned by the numeral are inherent; as a result, neither of them can remain unassigned.

Let us now turn to the discussion of PPs. Interestingly, as Bošković (2010a) observes (see also Franks 2002), PPs in SC assign structural Case.

(60) a. u Londonu/sobi
in London_{LOC}/room_{LOC}

b. u pet soba
in five rooms_{GEN} (Bošković 2010a)

(61) a. prema Londonu/sobi
toward London_{DAT}/room_{DAT}

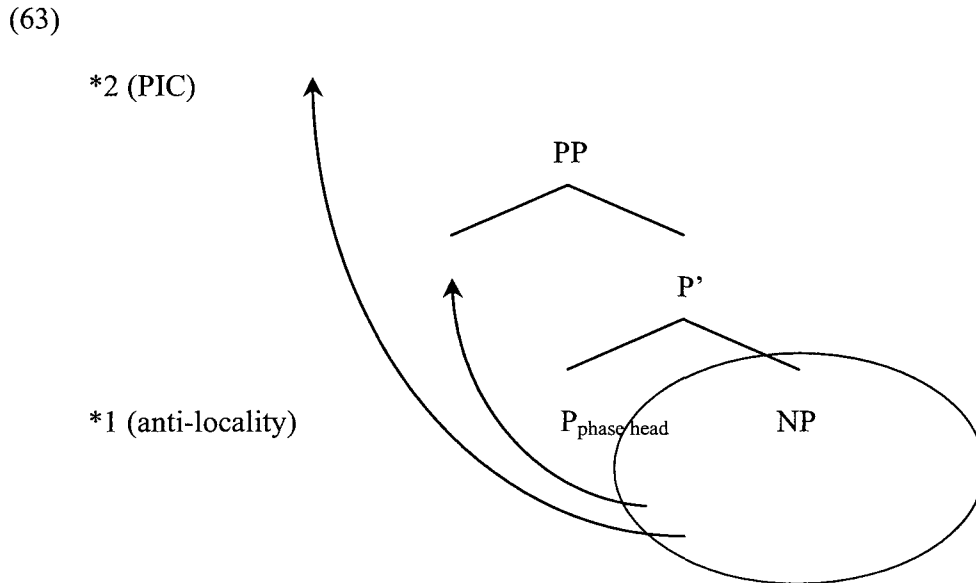
b. prema pet soba
toward five rooms_{GEN} (Bošković 2010a)

In both (61b) and (62b), the numeral overrides the Case that would be assigned to the complement of the prepositions. This shows that Case assigned by prepositions in SC is structural. Given the Case/phase hypothesis and the Stranding Generalization, we then predict that extraction out of PPs should be impossible in SC: as prepositions are phase

heads, movement of NP complements should be impossible due to the Stranding Generalization. This prediction is borne out by the following data:

- (62) a. *Sobu on uđe u (juče).
 room he entered in yesterday
 b. *Njoj on hoda prema.
 her he walks toward
 c. On hoda prema njoj. (Bošković 2010a)

(62a) and (62b) show that extraction of the NP complement of prepositions is impossible. This is exactly what is predicted under the Case/phase hypothesis. This is shown below:



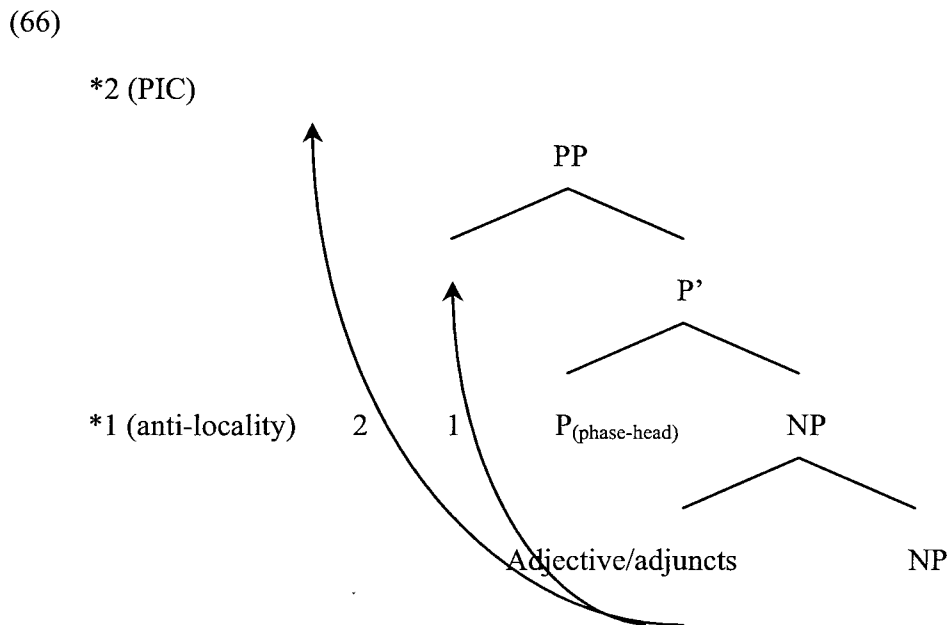
As P is a phase head, extraction of the complement is impossible due to the PIC and anti-locality.

Significantly, as noted by Bošković (2010a), left branch extraction and adjunct extraction are also impossible here:

- (64) *Veliku_i on uđe u [t_i sobu].
 big he entered in room (left branch extraction)
 (Bošković 2010a)

- (65) *Iz kojeg grada_i je on hodao prema [djevojkama t_i]?
 from which city is he walked toward girls (adjunct extraction)
 (Bošković 2010a)

Again, this is exactly as predicted under the present analysis: the PIC and anti-locality in tandem rule out these cases of extraction since the P, which values Case, is a phase head:



(66) thus corresponds to (41).

Let us finally briefly consider extraction out of APs.

- (67) a. *lojalan* studentima
 loyal students_{DAT}
 ‘loyal to students’
- b. **lojalan* pet studenata
 loyal five students_{GEN} (Bošković 2010a)

The adjective *lojalan* ‘loyal’ in (67a) assigns dative Case to its complement and this dative Case is not overridden by the numeral *pet* ‘five’, which indicates that dative Case assigned by adjectives is an inherent Case. Given this, the Case/phase hypothesis in tandem with anti-locality predicts that complements of adjectives should be extractable, deep LBE should be possible, and adjuncts should be extractable. These predictions are indeed borne out:

- (68) ?Studentima_i je on [*lojalan* *t_i*]
 students is he loyal (Bošković 2010a)
- (69) Njegovim_i je on *lojalan* [*t_i* studentima]
 his is he loyal students (Bošković 2010a)
- (70) ?Iz kojeg grada_i je on *lojalan* [studentima *t_i*]
 from which city is he loyal students (Bošković 2010a)

(68), (69), and (70) show that complement extraction is possible, deep LBE is possible and adjuncts can be extracted, respectively. This again follows from the current Case/phase hypothesis because AP does not work as a phase (since the adjective assigns inherent Case). There is thus no violation of anti-locality.

While SC and many other languages do not allow extraction of P-complements, there are languages that allow such extraction. Consider the following English data:

(71) What did you talk about *t* ?

Here, the complement of the preposition *about* undergoes wh-movement. There are at least two possibilities to approach such cases. First, it is possible that Ps in English assign inherent Case (see here Chomsky (1980, 1986a) and Hornstein and Weinberg (1981)). Under this option, English PPs do not project phases as Ps do not assign structural Case. Extraction of P-complements is predicted to be possible because there is no violation of anti-locality. Another option is to assume that English PPs have a richer internal structure. Consider the following:

(72) [_{PP} P [_{FP} F NP]]

I am assuming here a projection between PP and NP. This structure allows extraction of the NP complement because movement of NP to Spec, PP does not violate anti-locality (i.e. movement is crossing FP, which is a full phrase (see Bošković (2010a) for much relevant discussion of the two options noted above).

3.5 Agent extraction in Q'anjob'al

This section adduces another case of phase effects by Case-valuation, which was independently discussed in Coon (2010). Coon (2010) discusses the role of Case-valuation in A'-movement in Q'anjob'al, a Mayan language of Guatemala. Q'anjob'al is an ergative language, which is illustrated by the following examples:¹⁶

- (73) a. Max-**ach** y-il-a'.

ASP-**B2** A3-see-TV

'She saw you.'

- b. Max-ach way-i.

ASP-**B2** sleep-ITV

'You slept.'

(Coon 2010: 1)

A refers to ergative/genitive and B refers to absolutive. Aspectual markers (ASP) head finite eventive predicates in this language, as in other Mayan languages. Verb stems in these languages involve what Coon calls 'status suffix'. Thus, transitive status suffix is *-V'* (cf. (73a)) and the intransitive status suffix is *-i* (cf. (73b)). Interestingly, like other ergative languages, this language shows an asymmetry in A'-movement: while extraction of intransitive subjects and transitive objects is allowed, extraction of transitive subjects is not allowed. This is illustrated by the following examples:

¹⁶ Coon (2010) uses the following abbreviations. 1, 2, 3 – 1st, 2nd, and 3rd person; A – set A (ergative/genitive); ABS – absolutive; AF – agent focus; B – set B (absolutive); AP – antipassive; ASP – aspect marker; CAUS – causative; CL – noun class marker; DET – determiner; DTV – derived transitive suffix; EXT – existential; ITV – intransitive verb; NML – nominal; PL – plural; PREP – preposition; PROG – progressive; RN – relational noun; TV – transitive verb. I use these glosses in this section

(74) Maktxel max way-i? (intransitive subject)

who ASP sleep-ITV

‘Who slept?’ (Coon 2010:2)

(75) *Maktxel max-achs-laq’-a’? (transitive subject)

who ASP-B2 A3-hug-TV

intended: ‘Who hugged you?’ (Coon 2010:10)

(74) and (75) are examples of extraction of intransitive subjects and transitive subjects (agent), respectively. Agent extraction is disallowed.¹⁷ Significantly, A’-movement of agent becomes possible in the agent focus construction:

(76) Maktxel max-ach laq’-on-i?

who ASP-B2 hug-AF-ITV

‘Who hugged you?’ (Coon 2010: 10)

Here, the verb is accompanied by the agent focus marker *-(o)n* and agent extraction is possible. Crucially, (76) involves the intransitive status suffix *-i* even though the verb is thematically transitive (the verb has two arguments and neither of them is represented by oblique Case). Another indication of intransitivity of the above example is that it does not have set A (ergative) marking, which usually appears with transitive subjects (agents).

¹⁷ Patient extraction is allowed in this language:

(i) Maktxel max y-il-a’. (transitive object)

Who ASP A3-see-TV

‘Who did she see?’ (Coon 2010:2)

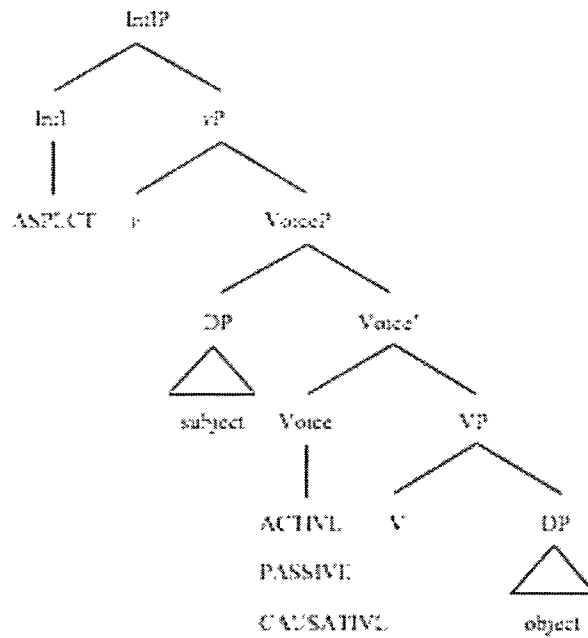
Coon (2010) provides a principled explanation of the data by proposing that ergative-assigning *v* is a phase head.

Let me start with the set of assumptions adopted by Coon (2001). Q'anjob'al is a high-absolutive language, where absolutive elements must appear right after aspect markers. This contrasts with a low-absolutive language like Chol, where the absolutive morpheme follows the verb stem:

- (77) a. Max-**ach** hin-[way-tzene-j]. Q'ANJOB'AL (HIGH-ABS)
 ASP-B2 A1-sleep-CAUS-DTV
 'I made you sleep.'
- b. Tyi k-[wäy-is-ä]-**yety**. CHOL (LOW-ABS)
 ASP A1-sleep-CAUS-DTV-B2
 'I made you sleep.' (Coon 2010: 5)

In (77a), the absolutive morpheme follows the aspect marker while the morpheme in (77b) follows the verb stem. The clause structure Coon (2010) assumes for Q'anjob'al (and Chol) is given below:

(78)



(Coon 2010:5)

Here, the verbal complex is formed by head movement, yielding [root-voice-suffix], which follows from Baker's (1985) Mirror Principle. Furthermore, aspect is realized in Infl. The crucial assumption Coon (2010) makes is given below:

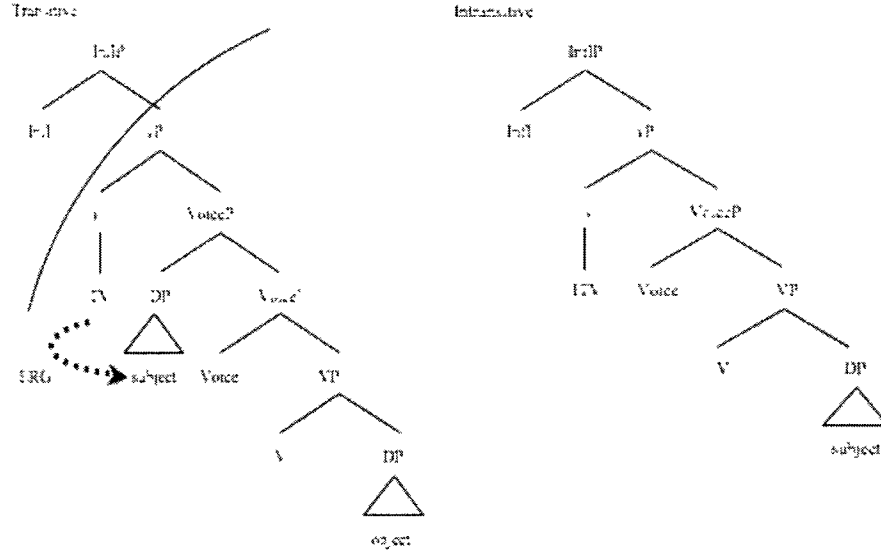
(79) Transitive (ergative-assigning) *v* heads are *phasal*; intransitive *v* is not.

(Coon 2010: 5)

Given that Q'anjob'al has two types of status suffix (transitive and intransitive), we have the following derivations:¹⁸

¹⁸ I set aside the marker for derived transitive verbs. See Coon (2010)

(80)



(Coon 2010: 6)

Here the transitive subject gets ergative Case from *v* and *v* projects a phase. Turning back to the discussion of absolutive Case, recall that the absolutive marker is possible with intransitive subjects and transitive objects. Furthermore, absolutive marker comes right after an aspect marker in Q'anjob'al but it comes after the verb stem in Chol :

- (81) a. Max-**ach** y-il-a'. Q'anjob'
 COM-B2 A3-see-TV
 'S/he saw you.'
- b. Max-**ach** way-i.
 COM-B2 sleep-ITV
 'You slept.'

(Coon 2010: 6)

- (82) a. Tyi y-il-ä-yety. Chol
 PRFV A3-see-DTV-B2
 ‘S/he saw you.’
- b. Tyi wäy-i-yety.
 PRFV sleep-ITV-B2
 ‘You slept.’ (Coon 2010: 6)

(81a) and (82a) are cases of transitive verbs and (81b) and (82) are cases of intransitive verbs. Coon (2011) then proposes the following parameter for absolutive Case licensing:

(83) MAYAN ABSOLUTIVE PARAMETER

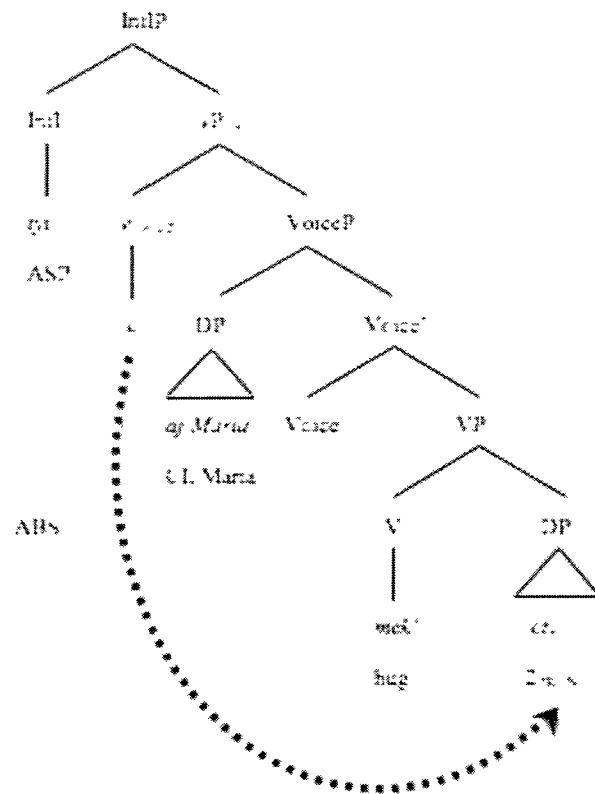
HIGH-ABS (set B realized on the aspect marker) absolutive is assigned byInfl

LOW-ABS (set B realized on the verb stem) absolutive is assigned within vP

(Coon 2010: 6 with slight modification)

This parameter, together with (79), explains the difference between the two languages with respect to the distribution of absolutive arguments, as well as the ban on extraction introduced above. Let us first consider the following Chol example:

- (84) Tyi i-mek'-e-yety aj-Maria. (Chol = low-absolutive)
 ASP A3-hug-TV-B2 DET-Maria
 ‘Maria hugged you.’ (Coon 2010:7)

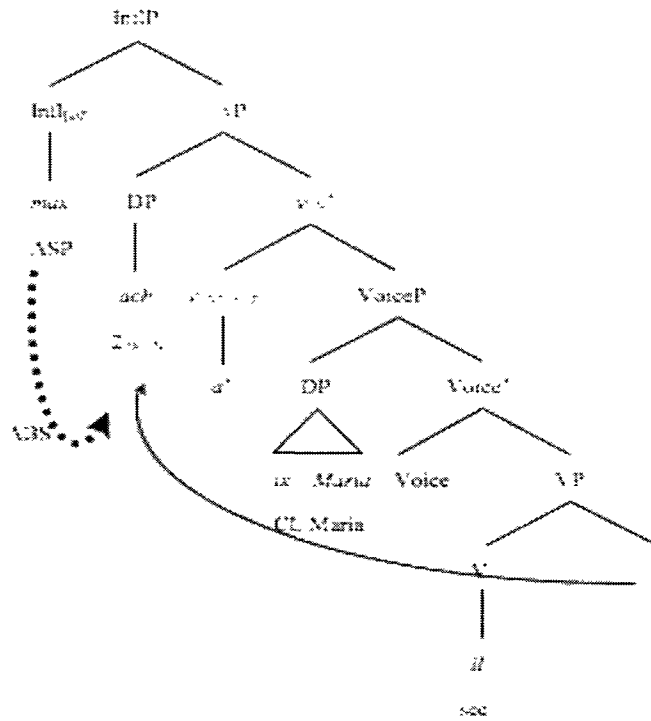


(Coon 2010:7)

Here the absolutive Case is licensed by *v*. Either the external argument or the internal argument can undergo A'-movement.

Let us now consider Q'anjob', which belongs to high-absolutive languages:

- (85) Max-**ach** y-il(-a') ix Malin. (Q'anjob' = high-absolutive)
 ASP-B2 A3-see-TV CL Maria
 'Maria saw you.'



(Coon 2010: 6)

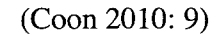
In this language, the absolutive Case cannot be licensed *v*P-internally. However, as *v*P is a phase (because *v* licenses ergative Case), the internal argument must move to the *v*P edge to avoid a derivational crash. Thus, the word order is correctly derived (the internal argument (absolutive DP) follows the aspect marker).

Given this, let us now see why extraction of an external argument is impossible in this language. The relevant example is repeated here:

- (Coon 2010: 9)

(Coon 2010: 9)

(Coon 2010: 9)



Here, the moved object is in Spec, ν P. The subject cannot be extracted since it will have to move via Spec, ν P but the object is already located in that position. If the agent moves to Spec, ν P, the object cannot be licensed.¹⁹ We then predict that in a language in which the object does not move, agent extraction should be possible. This prediction is borne out by the following example of Chol:

- (88) Maxki tyi y-il-ä-yety? Chol
 who ASP A3-see-TV-B2
 ‘Who saw you?’ (Coon 2010: 3)

Recall that Chol is a language in which the object is licensed ν P-internally. Hence, Spec, ν P, is not filled by movement of the internal argument in Chol. As a result, the agent can move to CP, Spec, passing through Spec, ν P as an intermediate landing site.

Let us now return to the agent focus construction, where A'-movement of the agent is possible. The relevant example is repeated here:

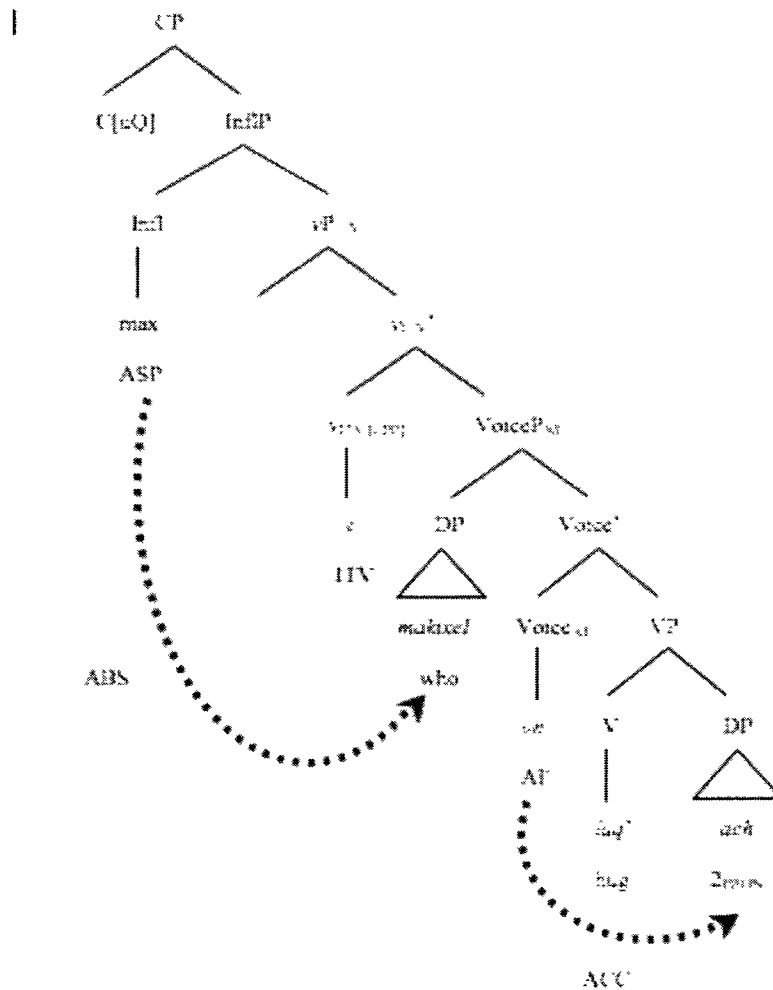
- (89) Maktxel max-ach laq'-on-i?
 who ASP-B2 hug-AF-ITV
 'Who hugged you?' (Coon 2010: 10)

Notice that in these examples, the verb stems are followed by the intransitive marker – *i*. Note also that there is no ergative marking in (89). Coon (2010) claims that in the agent

¹⁹ There is an implicit assumption here that v in this language disallows multiple specifiers or multiple specifiers in this language are disallowed in general.

focus construction, *-on* assigns Case to the internal argument and the external argument gets absolutive Case from Infl. This is shown below:

(90)



(Coon 2010: 12)

Here, the agent focus marker assigns Case to the internal argument and the external argument is Case-licensed by Infl. Coon (2010) suggests that the (in) transitivity of v is determined by its Case property, not full argument structure. This is why we have the intransitive marker on v (and the lack of ergative marking). Furthermore, as v does not assign Case, which in the current system means that v does not project phase, the agent can undergo A'-movement without causing any problems.

As pointed out by Coon (2010), what we see here is a case where there is a vP whose head does not assign Case even though the vP comes with a full set of arguments. Crucially, the vP in question is not a phase. This vP projection strikingly resembles the causative construction we discussed in chapter 2.

Recall that what we have seen in the discussion of causative constructions that such constructions also introduce defective vPs : the vPs in question have both an external argument and an internal argument but v does not assign Case. Crucially, such v does not project a phase. We then have a very interesting convergence here. In particular, Q'anjob' provides another case of thematically complete vPs which do not project phases.

3.6 Remarks on the Government Transparency Corollary

I have so far argued that if a head does not assign Case, the head does not project a phase. I would now like to generalize this effect further and connect it to Baker's (1988) Government Transparency Corollary (GTC):

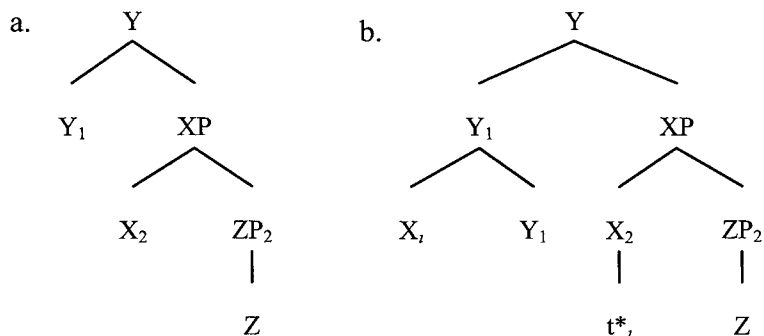
(91) THE GOVERNMENT TRANSPARENCY COROLLARY (GTC)

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

(Baker1988: 64)

Let us consider the following derivation to illustrate (91):

(92)



(92a) is the base-structure, where X governs ZP, but Y does not. In (92b) X is incorporated into Y. The GTC in (91) states that Y governs ZP in (92b); by moving to Y, X basically passes over its government abilities to Y.

I will now briefly introduce three cases which Baker (1988) argues fall under the GTC, returning to these cases more comprehensively below. First, Baker (1988) observes that when a preposition incorporates into a verb, the trace of the preposition can no longer assign Case. Instead, the verb assigns Case to the complement of the preposition. Second, Baker (1988) observes that there are languages like Mohawk where the verb agrees with a possessor only if the noun (which the possessor modifies) incorporates into the verb,

which Baker argues is another instance of a GTC effect.²⁰ Baker (1988) also observes that in a number of languages P-stranding is possible only if the preposition undergoes incorporation, which Baker (1988) shows also falls under the GTC.

I will show now that the GTC effects introduced above can be accommodated under the current theory. Let us first consider Case-assignment with preposition incorporation. Baker (1988) observes that when a preposition incorporates into a verb, the trace of the preposition does not assign Case; instead, the NP is Case-marked by the verb.

(93) P-incorporation:

- a. V [PP P [NP N]] : P assigns Case
 - b. P-V [PP t [NP N]] : P-incorporation, P does not assign Case.
- V assigns Case to the NP.

In (93a), P governs NP hence P assigns Case to the NP. In (93b) P incorporates into the verb. Given the GTC, V now governs the NP, which means that V assigns Case to the NP. Under the Case/phase hypothesis, this can be interpreted in the following way:

(94) P-incorporation:

- a. V [PP P [NP N]] : P assigns Case. PP is a phase
 - b. P-V [PP t [NP N]] : P-incorporation, P does not assign Case.
- P is not a phase. V assigns Case.

In (94a) the preposition assigns Case to its complement, which under the current system

²⁰ See Baker (1988) and Bošković (2011a) for discussion of the relevant patterns.

Let us now turn to agreement with possessors. Under the present system, this can be captured in the following way: when a noun assigns Case to the possessor, the NP is a phase, which means that the verb cannot agree with the possessor due to the PIC.²¹ But when the noun incorporates into the verb, the trace of the noun does not assign Case (see Baker 1988), which under the current theory means that the NP is not a phase. The verb can then agree with the possessor without violating the PIC. We thus capture another GTC effect.

(95) a. Msangalatsi a-ku-yend-a ndi ndodo.
entertainer SP-Pres-walk-Asp with stick
'The entertainer is walking with a stick.'

b. *Ndodo i-ku-yend-edw-a ndi.
stick SP-Pres-walk-PASS-Asp with
'The stick is being walked with.'

²² I am assuming Baker's (1988) analysis of the relevant data. There are however, alternatives; see, e.g., Pylkkänen (2002, 2008) and references therein. See also Bošković (2011a) for another perspective on these data.

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c. Msangalatsi a-ku-yend-er-a ndodo.

entertainer SP-Pres-walk-**with**-Asp stick

‘The entertainer is walking with a stick.’

d. Ndodo i-ku-yend-er-edw-a.

stick SP-Pres-walk-**with**-PASS-Asp

‘The stick is being walked with.’

(Baker 1988:260)

In (95a) and (95b) the preposition *ndi* ‘with’ does not incorporate into the verb. P-stranding is impossible, as shown in (95b). On the other hand, the preposition incorporates into the verb in (95c) and (95d). P-stranding is allowed, as shown in (95d). This pattern, which Baker (1988) analyzed in terms of a GTC effect, can also be captured under the current system. Let us consider the following;

(96) P-incorporation:

a. $V \left[\begin{array}{c} \boxed{[PP \ P \ [NP \ N]]} \end{array} \right] : P \text{ assigns Case. PP is a phase}$

b. $P-V \ [PP \ t \ [NP \ N]] : P\text{-incorporation, P does not assign Case.}$

P is not a phase. V assigns Case.

As we have seen above, when a preposition assigns Case, PP is a phase. We thus have a PP phase in (96a) above. P-stranding is then impossible due to anti-locality and the PIC, as discussed in sections 3 and 4. On the other hand, when the preposition incorporates into the verb as in (96b), the trace of the preposition does not assign Case. The NP can then move out of the PP without violating the PIC or anti-locality.

As noted by Željko Bošković (p.c.), the current system also captures an interesting interaction between incorporation and binding in Mohawk, which Baker (1988) reports as another case of GTC effects:

(97) a. I?_i k-ohres [ne i?_i wak-nuhs-a?].

I 1_SS/3_NO-wash Det I Is-house-Suf

'I_i washed my_i house.'

b. *I?I k-*nuhs*₁-ohres [ne i?I t₁].

I IsS-house-wash Det I

'*I_i washed my_i house.'

Baker (1988: 101; original observation attributed to Postal (1962:332))

In (97a) the noun *nuhs* 'house' does not incorporate and the possessor can be coreferential with the subject. Interestingly, when *nuhs* incorporates into the verb, the possessor cannot be coreferential with the subject, as shown in (97b). This contrast can be captured under the current system once we assume that binding domains reduce to phases (see Canac-Marquis 2005, Despić 2011, Hicks 2006, 2009, Lee-Schoenfeld 2008, Quicoli 2008, and Wurmbrand 2011 for relevant discussion). In (97a), the noun assigns Case to the possessor, which makes the object NP a phase. This means that the object NP is a binding domain. A coreferential pronoun within the NP then does not violate Condition B. On the other hand, in (97b), where the noun incorporates into the verb, the NP is not a phase (the trace of the incorporated noun does not assign Case), which means that the NP is not a binding domain. This results in a Condition B violation.

3.7 Conclusion

In conclusion, in this chapter, I have explored various ramifications of the Case/phase hypothesis proposed in chapter 2. First, I showed that A-movement out of CP is possible when C(-T) is not involved in Case-valuation; this follows from the Case/phase hypothesis, which dictates that CP is not a phase when C(T) is not involved in Case-valuation. This means that the phasehood of CP is also determined by Case. Second, following Bošković (to appear a), I showed that structural/inherent Case distinction crucially affects extraction out of NPs, which provides evidence that the phasehood of NP is also determined by Case, given that only structural Case involves Case-valuation. I have also discussed evidence that the phasehood of APs and PPs is also determined by Case. Furthermore, building on Coon (2010), I have discussed another case (from Q'anjob'al) where ν P works as a phase only when ν is involved in Case-valuation. Finally, I showed that Baker's (1988) GTC effects can be deduced under the Case/phase hypothesis. The major conclusion of this chapter is that not only ν P, but all relevant phrases work as phases only under Case-valuation. We have in fact arrived at a comprehensive picture where all major projections can be phases under Case-valuation (i.e. if their head is involved in Case-valuation).²⁴

²⁴ The reader is also referred to Despić (2011), Kang (in prep) and Wurmbrand (2011) for discussion of the phasehood of CPs. Although these works are quite different from the current one, the main point there is that CP is not always a phase. In particular, for these authors, whether or not CP is a phase depends on the syntactic context in which the CP is found, which is exactly what is argued for in this work.

- (2) Ziro-wa [Taroo-no [NP taido]]-o hihansi-ta ga, Yosio-wa
 Ziro-Top Taro-Gen attitude-Acc criticize-Past though Yoshio-Top
 [DP Hanako-no [NP ~~taido~~]]-o hihansi-ta.
 Hanako-Gen attitude-Acc criticize-Past
 ‘Ziro criticized Taro’s attitude, but Yoshio criticized Hanako’s.’

SM and SLM analyze (1) and (2) as follows: the second clause contains an empty element, which is derived by NP-ellipsis, which in turn is preceded by movement of *Hanako* to Spec, DP. SM and SLM argue that NP-ellipsis is triggered by D, thereby arguing that Japanese has a D projection. The crucial argument that supports their claim is the one that involves an argument/adjunct asymmetry (see below). SL and SLM argue that adjuncts cannot move to Spec, DP, which follows from their assumption that movement to Spec, DP is A-movement. Remnants of NP-ellipsis can then only be arguments. In this chapter I argue for a reinterpretation of SM and SLM under a no-DP analysis of the Japanese NP. In particular, I show that a particular contextual approach to phases, when coupled with some rather straightforward assumptions concerning ellipsis in general, explain the core data in a principled way. To the extent that the analysis is successful, it will provide additional evidence for contextual emergence of phases and for the claim that Japanese lacks D.

A note on the terminology is in order here. In this chapter, I use *NP-ellipsis* to refer to constructions that involve ellipsis of subparts of the traditional NP (TNP), which is shown in (1) and (2). As extensively discussed in the literature, Japanese also employs argument ellipsis, where entire arguments of verbs undergo ellipsis. Thus, the following example is grammatical:

- (3) Ziroo-wa [Taroo-no [NP taido]]-o hihansi-ta. Yosio-mo
 Ziro-Top Taro-Gen attitude-Acc criticize-Past. Yoshio-also
 [DP ~~Taroo~~-no [NP ~~taido~~]]-o hihansi-ta.
 Taro-Gen attitude-Acc criticize-Past
 ‘lit. Ziro criticized Taro’s attitude. Yoshio criticized, too.’

Here the entire object of the second sentence is elided. This chapter does not discuss such cases. I refer the reader to Oku (1998), Takahashi (2008a), Saito (2007), and references therein for discussion.

This chapter is organized in the following way. In section 2 I provide a brief summary of the analysis proposed in SM and SLM. In section 3 I argue, following Abe (2006) and Kadowaki (2005), that adjuncts in fact license NP-ellipsis. In section 4, extending a binding test employed by Despić (2009) to some Japanese data, I show that genitive remnants behave as adjuncts syntactically. In section 5 I propose a new analysis of ellipsis. In section 6 I explore some ramifications of the proposed analysis. In section 7 I discuss some ungrammatical cases discussed by SLM and SM. Section 8 is the summary of this chapter.

4.2 Saito and Murasugi (1990) and Saito, Lin, and Murasugi (2008)

This section provides a summary of SM and SLM. SM and SLM argue that Japanese has NP-ellipsis, which is preceded by movement to Spec, DP (see also Lobeck 1990 for a similar approach to ellipsis).

Before we start the discussion, a note on the genitive marker in Japanese is in order.

I assume with Kitagawa and Ross (1982), SM, and SLM that the genitive marker *–no*, which appears within nominal domains, is a contextual marker (but see below for refinements). It has been known at least since Kitagawa and Ross (1982) that the distribution of the genitive marker *–no* is quite wide. Consider the following examples:

- (4) haha-kara-no tegami (PP)
 mother-from-Gen letter
 ‘a letter from my mother’
- (5) Hare-no hi (nominal adjunct)
 clear-Gen day
 ‘clear days’
- (6) san-satu-no hon (numeral)
 three-CL-Gen book
 ‘three books’

In (4), (5), and (6), the genitive marker *–no* is attached to a PP, a nominal adjunct, and a numeral phrase, respectively. Importantly, (4) and (6) show that the genitive marker can be attached to elements other than nouns. This shows that the genitive Case in Japanese is not a “standard” Case that is assigned to nouns (see the previous chapters for discussion). However, it is also well known that the genitive marker cannot attach to relative clauses. Consider the following example:

- (7) [watasi-ga kinoo at-ta] (*no) otoko
 I -Nom yesterday meet-past-Gen man
 ‘the man I met yesterday’

Here, *otoko* ‘man’ is modified by a relative clause and the genitive marker cannot follow the relative clause. I assume the following rule suggested in SLM, which is a modified version of the rules proposed in Kitagawa and Ross (1982):

- (8) $[_{NP} \dots XP(-tense) N^a] \rightarrow [_{NP} \dots XP(-tense) Mod N^a]$, where $Mod = no$.
 (SLM 2008: 250)

The rule states that the genitive marker is inserted when there are elements within an NP that do not have tense specification. I will return to this rule for further discussion.

Furthermore, it is important to note here that head nouns in NP-ellipsis need to be abstract nouns to avoid the pronominal use of *no*, which roughly corresponds to English *one* (see Kamio 1983, Murasugi 1991, and Okutsu 1974, among others). Let us first consider the following example that involves the pronominal *no*:

- (9) Taroo-ga kat-ta no
 Taro-Nom buy-past NO
 ‘the one Taro bought’

Notice that this instance of *no* cannot be a genitive marker given that the genitive marker cannot be attached to relative clauses (cf. (7)). This provides motivation to posit *no* which

is not a Case-marker. The pronominal *no* analysis has also been extended to examples like (10):

- (10) John-no
 John-NO
 ‘John’s one’

Note, however, that the following example, where we have both the pronominal *no* and the genitive Case marker, is ungrammatical.

- (11) *John-no no
 John-Gen no
 ‘John’s one’

Okutsu (1974) proposes that in cases like (9), two instances of *no* (i.e. the contextual Case marker *no* and the pronominal *no*) are reduced to one *no* by deleting the genitive marker. Thus, (10) has the derivation like the following:

- (12) John-no no → John no
 John-Gen one John one

Given this, let us return to (1) and (2). One potential confound in analyzing NP-ellipsis in Japanese is the possibility that *no* in the remnant of NP-ellipsis is in fact the pronominal *no*. However, this problem is only apparent. As Kamio (1983) points out, the

pronominal *no* cannot be used as a pro-form of an abstract noun, which is demonstrated by the following data.

- (13) a. [NP [RC Taro-ga motteki-ta] **ringo**]-wa amari oisiku-nai **no**
 Taro-Nom bring-Past apple -Top too delicious-not-Pres NO
 dat-ta.
 be-Past
 ‘The apple which Taro brought with him was not so delicious.’
- b. *[NP Taro-no **sinnen**]-wa totemo katai **no** dat-ta.
 Taro-Gen conviction-Top very firm NO be-Past
 ‘lit. Taro’s conviction was a very firm one.’

Arimoto and Murasugi (2005:174)

No in (13a) serves as a pro-form of a concrete noun *ringo* ‘apple’. This example is grammatical. On the other hand, *no* in (13b) is intended to serve as a pro-form of an abstract noun *sinnen* ‘conviction’, but this is not possible. We thus need to use abstract nouns when we consider NP-ellipsis in Japanese to avoid the pronominal use of *-no*. Now, as the head noun in (1) and (2) is an abstract noun *taido* ‘attitude’, *no* attached to the remnants of NP-ellipsis cannot be the pronominal *no*. It must then be the contextual Case-marker discussed above.

We are now ready to return to NP-ellipsis. Consider first the following examples (note that the example involves an abstract noun *taido* ‘attitude’, which excludes the pronominal use of *no*):

- (14) [DP Taro-no [NP taido]]-wa yo-i ga, [DP Hanako-no [NP ~~taido~~]]-wa
 Taro-Gen attitude-Top good-Pres though Hanako-Gen attitude-Top
 yoku-na-i.
 good-not-Pres
 ‘Though Taro’s attitude is good, Hanako’s isn’t.’
- (15) Ziroo-wa [Taro-no [NP taido]]-o hihansi-ta ga, Yosio-wa
 Ziro-Top Taro-Gen attitude-Acc criticize-Past though Yoshio-Top
 [DP Hanako-no [NP ~~taido~~]]-o hihansi-ta.
 Hanako-Gen attitude-Acc criticize-Past
 ‘Ziro criticized Taro’s attitude, but Yoshio criticized Hanako’s.’

SM and SLM analyze (14) and (15) as follows. The second clause contains an empty element derived by NP-ellipsis, which is preceded by movement of *Hanako* to Spec, DP, as a result of which *Hanako* “survives” ellipsis. SM and SLM argue that NP-ellipsis is triggered by D, thereby concluding that Japanese has DP. The crucial evidence that supports the analysis put forth by SM and SLM concerns the argument/adjunct asymmetry. Here I summarize three pieces of data in support of such an asymmetry: (i) nominal adjuncts, (ii) relative clauses, and (ii) numerals. The first case concerns nominal adjuncts:

- (16) *[Hare-no hi]]-wa yo-i ga, [ame-no hi] -wa
 clear-Gen day-Top good-Pres though rain-Gen day-Top
 otikom-u.
 feel.depressed-Pres
 ‘Clear days are OK, but I feel depressed on rainy days.’ (SLM:253)

In this example, contrary to the cases in (14) and (15), NP-ellipsis is disallowed. Notice that in contrast to (14), where the genitive elements are arguments of the head noun, the genitive element in (16) is an adjunct. The NP-ellipsis analysis provides an elegant solution to this puzzle. SLM assume that movement to Spec, DP is A-movement. Hence, adjuncts like *ame* ‘rain’ cannot move to the position. NP-ellipsis is then disallowed.

The second type of adjuncts concerns relative clauses. Relative clauses also disallow NP-ellipsis:

- (17) *[[Taroo-ga kinoo at-ta] hito]-wa yasasi-i ga,
 Taro-Nom yesterday see-Past person-Top kind-Pres though
 [[Hanako-ga kinoo at-ta] ~~hito~~]-wa kowa-i.
 Hanako-Nom yesterday see-Past person-Top scary-Pres
 ‘The person Taroo saw yesterday is kind, but the person Hanako saw yesterday is scary.’ (SLM:256)

SLM assume that relative clauses are adjuncts, in which case (17) can be treated on a par with (16).

Finally, let us consider numerals, which were also discussed by SM and SLM.

Consider the following example:

- (18) *Taroo-wa iti-niti-ni [san-satu-no hon]-o yom-u ga,
Taro-Top one-day-in three-CL-Gen book-Acc read-Pres though
Hanako-wa [go-satu-no ~~hon~~]-o yom-u.
Hanako-Top five-CL- Gen book-Acc read-Pres
'Taro reads three books in a day, but Hanako reads five.' (SLM: 253)

Go-satu 'five-CL' cannot license NP-ellipsis in the second sentence. SM and SLM thus conclude that numerals are also adjuncts.

SLM also note that examples of the following kind are grammatical:

- (19) [Kyoo-no ondo]-wa [kinoo-no ~~ondo~~] -yorimo taka-i
today-Gen temperature-Top yesterday-Gen temperature-than high-Pres
'Today's temperature is higher than yesterday's.' (SLM: 255)

Kinoo 'yesterday' in the second sentence licenses NP-ellipsis. If *kinoo* 'yesterday' is an adjunct, the analysis based on the argument/adjunct asymmetry would not go through. SM and SLM therefore propose that locative and temporal phrases are base-generated in Spec, DP on the basis of an observation that these phrases can occupy Spec, DP in English (see Anderson 1983 for discussion):

- (20) a. yesterday's temperature
b. last year's protest against war
c. Taipei's weather

(SLM: 255)

Locative and temporal phrases in the above English examples occupy Spec, DP. SM and SLM therefore assume that the temporal phrase in (19) also occupies Spec, DP, licensing NP-ellipsis.

Above, I have summarized the SM/SLM analysis, which is supported by the argument/adjunct asymmetry. SM and SLM claim that nominal adjuncts, relative clauses, and numerals disallow NP-ellipsis. SM and SLM argue that they are all adjuncts, hence cannot move to Spec, DP, which under the SM/SLM analysis is a prerequisite for licensing ellipsis. In the next section I show that adjuncts do license NP-ellipsis, which raises a problem for the analysis proposed by SM and SLM.

4.3 Adjuncts license NP-ellipsis

In this section I provide evidence that adjuncts do license NP-ellipsis (see Abe 2006 and Kadowaki 2005 for earlier observations). Furthermore, I discuss an observation made in Watanabe (2010) that numerals like those in (18) can license ellipsis if they are not followed by *no*.

Let us first consider the following case discussed by Kadowaki (2005), where a nominal adjunct licenses NP-ellipsis.

- (21) Sin-no sinnen-wa kavar-anai-ga, nise-no ~~sinnen~~-wa
 true-Gen conviction-Top change-not-though fake-Gen conviction-Top
 sugu kawa-ru.
 easily change-Pres

‘The true conviction never changes, but the fake (one) easily changes.’

(Kadowaki 2005: 194)

Nise ‘fake’ is an adjunct. Significantly, NP-ellipsis is allowed. Based on this, Kadowaki (2005) argues that the argument/adjunct distinction is not the right characterization of the ellipsis paradigm.

Turning now to relative clauses, Miyamoto (2010) observes that when a relative clause is followed by a focus particle *dake* ‘only’, the relative clause can be followed by *-no*. Consider the following example:

- (22) [[Taroo-ga tegami-o uketot-ta]-dake-no] tomodati
 Taro-Nom letter-Acc receive-Past-only-Gen friend

‘the friend from whom Taroo only received a letter’ (Miyamoto 2010: 43)

Here the relative clause is followed by *dake* ‘only’, which is in turn followed by *-no*. Significantly, this kind of relatives do allow NP-ellipsis:

- (23) [[Aisatu-suru]-dake-no] kankei-wa-yo-i-ga
greeting-do-only-Gen] relation-Top-good-Pres-though
[[okane-o kasikari-su-ru]-dake-no] ~~kankei-wa~~
money-Acc borrowing.and.lending-do-Pres-only-Gen relation-Top
yoku-na-i.
good-not-Pres
‘lit. the relation in which they only greet is good, but the relation in which they
only borrow and lend money is not good.’

Here, NP-ellipsis is licensed by a relative clause followed by the focus particle and *–no*. However, Miyamoto (2010) observes the following example, which he takes to indicate that the relative clauses in question do not license NP-ellipsis (the judgment is Miyamoto’s):

- (24) ???[[gakubusei-ga sidookyooiin-ni mise-ru]
 undergraduates-Nom academic.advisor-Dat show-Pres
 amae]-wa taitei yurus-e-ru-ga,
 emotional.dependency-Top most of the time allow-can-Pres-though
 [[Taroo-ga gakusironbun-teisyutsu-maeni itizitekini
 [[Taro-Nom B.A.thesis-submission-before temporarily
 mise-ta]-dake-no ~~amae~~]-wa yurus-e-na-i.
 show-Past-only-Gen emotional dependency-Top allow-can-Neg-Pres
 ‘The emotional dependency that undergraduates show to their academic advisors is
 usually OK, but the emotional dependency that Taro only showed to his academic
 advisor temporarily cannot be tolerated.’ (Miyamoto 2010:44)

Here, the second sentence contains a relative clause. NP-ellipsis yields a slightly degraded result. While I agree with this observation, let me first note that, as Miyamoto (2010) reports, the example is totally unacceptable without *no* and *dake* (the judgment is Miyamoto’s):

- (25) *[[gakubusei-ga sidookyooiin-ni miseru]
 undergraduates-Nom academic.advisor-to show
 amae]-wa taitei yurus-e-ru-ga,
 emotional.dependency-Top most.of.the.time allow-can-Pres-though
 [[Taroo-ga gakusironbun-teisyutsu-maeni itizitekini
 [[Taro-Nom B.A.thesis-submission-before temporarily
 mise-ta]-~~amae~~-wa yurus-e-na-i.
 show-Past-emotional.dependency-Top allow-can-Neg-Pres
 ‘The emotional dependency that undergraduates show to their academic
 advisors is usually OK, but the emotional dependency that Taro only showed
 to his academic advisor temporarily cannot be tolerated.’

(Miyamoto 2010:43)

While (24) is still a little degraded, the contrast between (24) and (25) is quite clear. Furthermore, the grammaticality of the example significantly improves when the relative clause in the first sentence is also followed by the focus particle:

- (26) Yoshio-wa [[musume-ga itizitekini mise-ta]-dake-no
 Yoshio-Top daughters-Nom temporarily show-Past-only-Gen
 amae]-nara yurus-e-ta. Taroo-mo [musume-ga
 emotional.dependency-if allow-can-Past. Taro-also daughter-Nom
 itizitekini mise-ta]-dake-no amae]-nara yurus-e-ta.
 temporarily show-Past-only-Gen emotional.dependency-if allow-can-Past
 ‘Yoshio could allow the emotional dependency that daughters temporarily showed.
 Taro could also allow emotional dependency that daughters temporarily showed.

Here, the first relative clause as well as the second relative clause is followed by *dake* ‘only’. NP-ellipsis is allowed in this context. I therefore assume that the slightly degraded status of (24) is attributed to some kind of a parallelism requirement on remnants of NP-ellipsis and that the relative clauses in question do license NP-ellipsis.

We can further strengthen this point by examining examples that involve a relative clause with a copula. Consider first the following example:¹

- (27) John-ga kougeki-o su-ru-tumori-da.
 John-Nom attack-Acc do-Pres-intend-Cop
 ‘lit. John intends to do an attack.’

¹ The status of *tumori* ‘intend’ is not clear. It may be a noun which takes a sentential complement. Even if this is the case, the point made in the text still goes through with some straightforward modifications (e.g. *no* in (28) would then be a genitive marker; in fact the status of *tumori* in (27) and *dake* in (26) may then be the same).

Here, *tumori* ‘intend’, which takes *su* ‘do’ as its complement, is followed by the copula *da*. Interestingly, the copula is pronounced as *–no* when this type of clause modifies a noun (see Kuno 1973 and Nishiyama 1999, among others):

- (28) [John-ga su-ru-tumori]-no kougeki
 John-Nom do-Pres-intend-Cop attack
 ‘lit. An attack John intends to do’

The head noun *kougeki* ‘attack’ is modified by a relative clause, which is followed by *–no*. Significantly, the relative clause in (28) licenses NP-ellipsis.

- (29) [John-ga su-ru-tumori]-no kougeki-wa seikousu-ru-darou-ga
 John-Nom do-Pres-intend-Cop attack-Top succeed-Pres-probably-though
 [Mary-ga su-ru-tumori]-no kougeki-wa seikousi-na-i-darou.
 Mary-Nom do-Pres-intend-Cop attack-Top succeed-Neg-Pres-probably
 ‘lit. An attack John intends to do will probably succeed, but an attack that Mary
 intends to do probably will not succeed.’

NP-ellipsis in the second sentence is licensed by the relative clause followed by *–no*. This confirms the claim that adjuncts license NP-ellipsis.²

² Note that the noun *kougeki* ‘attack’ is an abstract noun, as shown by the following example:

- (i) *Taroo-no kougeki-wa totemo tuyoi no dat-ta.
 Taro-Gen attack-Top very strong one Cop-Past
 ‘Taro’s attack was a very strong one.’

The pronominal *no* cannot serve as a pro-form of *kougeki* ‘attack’

Finally, let us consider numerals. I show here that one type of numerals allows NP-ellipsis. It has been known since at least Kamio (1983) that there are two types of numerals. One type involves numerals that are used with classifiers, which I will call *counter numerals*. This type was introduced above (cf. (6)). The other type Kamio (1983) discusses involves numerals that describe a property of nouns, which I will call *measure numerals*. Consider the following examples:

- | | | | | |
|------|----|--------------------|----|------------------------|
| (30) | a. | 3-dai-no kuruma | b. | 2-rittoru-no botoru |
| | | 3-CL-Gen car | | 2-liter-Gen bottle |
| | | ‘three cars’ | | ‘bottle of 2 liter’ |

While the counter numeral (30a) is used to count cars, the measure numeral in (30b) is not used to count bottles but to describe a property of the bottle. We have already seen that numerals like those in (30a) do not license NP-ellipsis (cf. (18)). Interestingly, measure numerals like those in (30b) do license NP-ellipsis. Consider the following example:

- (31) Amerikagun-wa nizyu-pun-no kougeki-o keikakusi-ta-ga
 U.S. Army-Top 20-minute-Gen attack-Acc plan-Past-though
 nihongun-wa rokuzyu-pun-no ~~kougeki~~-o keikakusi-ta.
 Japan Army-Top 60-minutes-Gen attack-Acc plan-Past
 ‘lit. the U.S. army planned attack of 20 minutes, but the Japanese army planned
 attack of 60 minutes.’

Here, the second sentence contains a measure numeral *rokuzyu-pun* ‘60 minutes’. NP-ellipsis is allowed in this example. This shows that measure numerals do license NP-ellipsis.

Furthermore, as Watanabe (2010) observes in a response to SLM, counter numerals of the kind we saw in the last section in fact can license ellipsis once the genitive marker *–no* is dropped (see also Moriyama and Whitman 2004). Consider the following examples:

- (32) a. Taroo-wa [yon-satsu-no hon]-o kat-ta ga, sono-uti
 Taro-Top four-CL-Gen book-Acc buy-Past though that-out.of
 ni-satu-o sudeni yomi-oe-ta.
 two-CL-Acc already read-finish-Past

‘Taro bought four books, but he already finished reading two of them.’

(Watanabe 2010: 65)

- b. *Taroo-wa [yon-satsu-no hon]-o kat-ta ga, sono-uti
 Taro-Top four-CL-Gen book-Acc buy-Past though that-out.of
 ni-satu-no-o sudeni yomi-oe-ta.
 two-CL-Gen-Acc already read-finish-Past

‘Taro bought four books, but he already finished reading two of them.’

In (32a), the second sentence contains a numeral, which is not followed by a genitive marker. This sentence, which involves ellipsis, is fully acceptable. This example contrasts with (32b), where the classifier is followed by the genitive marker. The example is ungrammatical, just like the case we have seen above. Interestingly, this seems to also

hold for other quantifiers such as *subete* ‘all’ and *ooku* ‘many’ (see Moriyama and Whitman 2004 for discussion of NP-ellipsis with stranded quantifiers):

- (33) a. Taroo-wa [subete/ooku-no gakusei]-o hihansi-ta ga,
 Taro-Top all/many-Gen student-Acc criticize-Past though
 Hanako-wa subete/ooku-o syoosansi-ta.
 Hanako-Top all/many-Acc praise-Past
 ‘Though Taro criticized all the students/many students, Hanako praised all the students/many students.’
- b. *Taroo-wa [subete/ooku-no gakusei]-o hihansi-ta ga,
 Taro-Top all/many-Gen student-Acc criticize-Past though
 Hanako-wa [subete/ooku-no ~~gakusei~~]-o syoosansi-ta.
 Hanako-Top all/many-Gen-Acc student praise-Past
 ‘Though Taro criticized all the students/many students, Hanako praised all the students/many students.’

Subete ‘all’ and *ooku* ‘many’, which are not followed by the genitive marker in the second sentence, license NP-ellipsis in (33a). On the other hand, when the quantifiers are followed by the genitive marker, NP-ellipsis is disallowed, as shown in (33b). Thus, the pattern discussed by Watanabe (2010) also holds for quantifiers such as *subete* and *ooku* as well as numerals.

To summarize, I have shown that (i) some nominal adjuncts do license NP-ellipsis, (ii) some relative clauses allow NP-ellipsis, and (iii) some numerals allow NP-ellipsis. In other words, for all the ungrammatical cases discussed by SM and SLM where adjuncts

cannot license NP-ellipsis, we have grammatical counterparts. We are then in a conflicting situation. Some adjuncts disallow NP-ellipsis but other adjuncts allow NP-ellipsis. Based on all the grammatical examples, I conclude that adjuncts in principle can license NP-ellipsis. Putting the ungrammatical cases aside for a moment, in the next section I further strengthen this conclusion and argue that *all* genitive remnants of ellipsis are in fact adjuncts.³

4.4 More on remnants of NP-ellipsis

I have shown in the previous section that adjuncts license NP-ellipsis. In this section I discuss syntactic properties of remnants of NP-ellipsis and argue that remnants of NP-ellipsis in fact all behave like adjuncts.⁴ I will first discuss how binding works within Japanese NP, building on Despić (2009, 2011) (see also Bošković 2010b and Cheng 2011).

As discussed in chapter 3, Bošković (2008, 2010a, 2010b) argues that languages without articles, including Japanese, do not have DP based on a number of wide-ranging

³ There are other cases of adjuncts. Thus, An (2009) reports that adjunct PPs cannot license NP-ellipsis. But the data he reports are actually grammatical to me and my informants. Interestingly, similar (but not identical) examples that involve PP adjuncts are reported to be grammatical in Abe (2006). In fact, Abe (2006) presents such examples to show that adjuncts license NP-ellipsis (the judgments below are those reported by the authors cited):

- (i) **ya-de-no koogeki-wa kantan-da ga, [isi-de-no ~~koogeki~~]-wa muzukashi-i*
 arrow-with-Gen attack-Top easy-Cop though stone-with-Gen attack-Top difficult-Pres
 ‘Although the attack with arrows was easy, the attack with stones was difficult.’ (An 2009:10)
- (ii) *Sono basyo-de-no Yamada sensei-e-no hihan-wa yurus-e-ru ga,*
 that place-in-Gen Yamada professor-to-Gen criticism-Top forgive-can-Pres though
kono basyo-de-no ~~Yamada sensei e no~~ hihan-wa yurus-e-na-i.
 this place-in-Gen Yamada professor-to-Gen criticism-Top forgive-can-Neg-Pres
 (Abe 2006: 47)
- lit. ‘I can tolerate in that place’s criticism of Prof. Yamada, but not in this place’s criticism of Prof. Yamada.’

⁴ Note that the definition of adjuncts employed by SM and SLM is based mostly on the semantics of genitive elements, while the discussion in this text focuses on the syntactic properties of genitive phrases.

syntactic and semantic generalizations. The following is the list of some of the generalizations discussed in Bošković (2008, 2010b): ⁵

- (34) a. Only languages without articles may allow left-branch extraction.
b. Only languages without articles may allow adjunct extraction from TNPs.
c. Only languages without articles may allow scrambling.
d. Multiple-wh fronting languages without articles do not show superiority effects.
e. Only languages with articles may allow clitic doubling.
f. Languages without articles do not allow transitive nominals with two genitives.
g. Head-internal relatives display island sensitivity in languages without articles, but not in languages with articles.
h. Polysynthetic languages do not have articles.
i. Only languages with articles allow the majority reading of MOST.
j. Article-less languages disallow negative raising (i.e strict clause-mate NPI licensing under negative raising); those with articles allow it.

Bošković (2008, 2010a, 2010b) furthermore shows that the above generalizations can all be deduced if languages without articles lack DP.

Despić (2009, 2011) provides additional evidence for this view for Serbo-Croatian (SC) based on certain SC/English binding contrasts. Consider the following data:

⁵ I refer the reader to Bošković (2008, 2010b) for discussion, which includes illustrations of the generalizations and the definition of the phenomena in question. For example, scrambling in (34b) refers to Japanese style long distance scrambling. Note also that what is crucial is the presence/absence of a definite article because Slovenian, which has indefinite articles but does lacks definite articles, behaves like article-less languages. See Bošković (2009) for discussion.

- (35) a. His_i father considers John_i highly intelligent.
 b. John_i's father considers him_i highly intelligent. (English)
- (36) a. *Njegov_i najnoviji film je zaista razočarao Kusturicu_i.
 his latest movie is really disappointed Kusturica
 'His_i latest movie really disappointed Kusturica_i.'
 b. *Kusturicin_i najnoviji film ga_i je zaista razočarao.
 Kusturica's latest movie him is really disappointed
 'Kusturica_i's latest movie really disappointed him_i.' (Serbo-Croatian)

Despić (2009, 2011) observes that the contrast between English and SC can be explained by assuming the presence of DP projection in English and the absence of it in SC. The basic idea is that in English the DP projection dominates the projection where the possessor is located (Kayne 1994). (35a) and (35b) then obey Condition C and Condition B, respectively. On the other hand, Bošković (2008, 2010a, 2010b) argues that SC lacks DP and that SC possessors are simply NP adjuncts: (36a) and (36b) then violate the binding conditions. (36a) and (36b) are analyzed in the following way:

- (37) a. *_{[NP Njegov_i [_{NP} najnoviji [_{NP} film]]]} je zaista razočarao Kusturicu_i.
 his latest movie is really disappointed Kusturica
 'His_i latest movie really disappointed Kusturica_i.'
 b. *_{[NP Kusturicin_i [_{NP} najnoviji [_{NP} film]]]} ga_i je zaista razočarao.
 Kusturica's latest movie him is really disappointed
 'Kusturica_i's latest movie really disappointed him_i.' (Serbo-Croatian)

The definition of c-command adopted here is the one adopted in Kayne (1994):

- (38) X c-commands Y iff X and Y are categories, X excludes Y and every category that dominates X dominates Y (X excludes Y if no segment of X dominates Y).

(Kayne 1994: 16)

What is important here is that a segment of a category does not confine the c-command domain of an element that the segment dominates. Returning now to (37), as the underlined element is NP-adjoined, the highest NP node, which is a segment, does not confine the c-command of the underlined element. (36a) and (36b) thus violate the binding conditions.

Despić (2009, 2011) also observes that demonstratives do not project their own projections:

- (39) *_{[NP} Ovaj _{[NP} njegov_i _{[NP} prijatelj_j]]] smatra Marka_i veoma pametnim.

This_{3psg} his_{3psg} friend considers Marko very intelligent

‘This friend of his_i considers Marko_i very smart.’

Here, a demonstrative pronoun is added to the NP that hosts the pronoun. The example is still ungrammatical. Despić (2009, 2011) thus concludes that the demonstrative pronoun in (39) is in fact an NP adjunct. It does not introduce a DP projection which would confine the c-command domain of the pronoun. As a result, the pronoun *njegov* in (39) still c-commands *Marka*.

Despić also observes the following data, which show that quantifiers and numerals project their own projection when they assign genitive Case. As discussed in chapter 3, higher numerals (excluding one) and some quantifiers assign genitive Case to the following noun in SC. Consider the following examples:

- (40) [QP [Q' Mnogo [NP Dejanovih_i [NP prijatelja]]]] je njega_i kritikovalo.
 Many Dejan_i'_{SGEN} friends_{GEN} is him_i criticize_{SG N}
 'Many of Dejan_i's friends criticized him_i.' (Despić (2009))
- (41) [QP Pet [NP Dejanovih_i [NP prijatelja]]] je došlo na njegovo_i venčanje
 five Dejan_i'_{SGEN} friends_{GEN} is came to his_i wedding
 'Five of Dejan's friends came to his wedding.' (Bošković (2010b))

Dejan in (40) and (41) can co-refer with the pronoun, which can be explained once we assume that *mnogo* 'many' and *pet* 'five' require their own projections (QP). Furthermore, the quantifier in (40) has an adjectival counterpart that agrees with the noun and does not assign genitive Case. This form does not project QP and does not improve violations of binding conditions:

- (42) ??[QP Mnogi [NP Dejanovi_i [NP prijatelji]]] su njega_i kritikovali.
 Many_{NOM} Dejan_i'_{SNOM} friends_{SNOM} are him_i criticize_{PL M}
 'Many of Dejan_i's friends criticized him_i.' (Despić 2009)

Thus *Dejan* in (42) cannot co-refer with the pronoun. Despić (2009) therefore concludes that quantifiers and numerals that assign genitive Case, but not those that do not assign

genitive Case, head their own projections (QP). The NP dominated by the projection then does not c-command the pronoun in the object position.

With this in mind, let us return to the case of Japanese. Applying Despić's (2009) test to Japanese, Bošković (2010b) and Cheng (2011) show that Japanese patterns with SC in the relevant respect:⁶

- (43) a. *Karei-no saisin-no eiga-wa hontouni Kurosawai-o rakutansase-ta.
 he_i-Gen latest-Gen movie-Top really Kurosawa_i-Acc disappoint-Past
 ‘His_i latest movie really disappointed Kurosawa_i.’
 b. *Kurosawai-no saisin-no eiga-wa hontouni karei-o rakutansase-ta.
 Kurosawa_i-Gen latest-Gen movie-Top really him_i-Acc disappoint-Past
 ‘Kurosawa_i’s latest movie really disappointed him_i.’

(43a) violates Condition C (cf. (36a)) and (43b) violates Condition B (cf. (36b)).⁷ The analysis adopted here makes certain predictions, which are in fact borne out. First, the analysis predicts that (43a) should still be ungrammatical when *Kurosawa* in (43a) is further embedded. This prediction is borne out by the following data:⁸

⁶ Bošković (2010b) and Cheng (2011) also show that the same holds for Chinese.

⁷ Similar examples have already been discussed in the literature (see Hoji (1985, 1990), among others). I will discuss this in the appendix, which contains a more comprehensive discussion of the binding paradigm under consideration.

⁸ On the other hand, (43b) is grammatical when *kare* ‘he’ is further embedded:

- (i) Kurosawa_i-no saisin-no eiga-wa hontou-ni [karei-o sasae-ta] hito-o
 Kurosawa-Gen latest-Gen movie-Top really he-Acc support-Past person-Acc
 rakutansase-ta.
 disappoint-Past
 ‘Kurosawa’s latest movie really disappointed the people who supported him.’

This is not surprising given that Condition B applies in a certain “domain” (cf. Chomsky 1981), which I assume is the relative clause in (i). The pronoun *kare* ‘he’ is free in the relevant domain, hence, the example is grammatical.

- (44) *Kare_i-no saisin-no eiga-wa hontou-ni [Kurosawa_i-o sasae-ta]
 he_i-Gen latest-Gen movie-Top really Kurosawa_i-Acc support-Past
 hito-o rakutansase-ta.
 Person-Acc disappoint-Past
 ‘His latest movie really disappointed the people who supported Kurosawa.’

In (44), *Kurosawa* is in a relative clause (i.e. the element in []), which modifies the accusative object. *Kare* ‘he’ cannot co-refer with *Kurosawa*. Furthermore, we predict that when *kare* in (43a) and *Kurosawa* in (43b) are further embedded, the sentences should improve. This prediction is also borne out:

- (45) a. [Kare_i-no siki-ga tounyuu-sare-ta] saisin-no eiga-wa
 he_i-Gen money-Nom invest-Pass-Past latest-Gen movie-Top
 hontouni Kurosawa_i-o rakutansase-ta.
 really Kurosawa_i-Acc disappoint-Past
 ‘lit. The latest movie which his_i money was invested into really
 disappointed Kurosawa_i.’
 b. [Kurowasa_i-no siki-ga tounyuu-sare-ta] saisin-no eiga-wa
 Kurosawa_i-Gen money-Nom invest-pass-Past latest-Gen movie-Top
 hontouni kare_i-o rakutansase-ta.
 really he_i-Acc disappoint-Past
 ‘lit. The latest movie which Kurosawa_i’s money was invested into really
 disappointed him_i.’

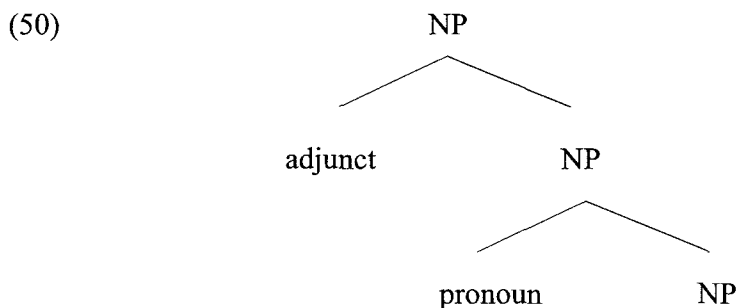
In (45a), the pronoun *kare* is embedded in a relative clause (i.e. the element in []) and *kare* can co-refer with *Kurosawa*. In (45b) *Kurosawa* is embedded in the relative clause. *Kurosawa* can co-refer with *kare*.

Let us now turn to NP-ellipsis in Japanese. I will show that genitive remnants of NP-ellipsis are in fact adjuncts syntactically. We have seen that genitive-marked relative clauses and measure numerals can license NP-ellipsis. We have also seen that possessors and temporal phrases can also license NP-ellipsis. The following data show that these genitive elements do not confine the binding domain of a pronoun:

- (46) *[Hanako-ga hito-kara kii-ta-dake-no] kare_i-no hihan-ga
 Hanako-Nom people-from hear-past-only-Gen he_i-Gen criticism-Nom
 Taro_o_i-o kizutuke-ta.
 Taro_i-Acc diminish-Past
 ‘The criticism of him_i that Hanako only heard from people diminished Taro_i.’
 (relative clause)
- (47) *Kono-naka-de, sanzyuu-senti-no kare_i-no buumeran-ga Taro_o_i-o
 this-among-in thirty-centimeter-Gen he_i-Gen boomerang-Nom Taro_i-Acc
 tyokugeki-si-ta.
 direct.hit-do-Past
 ‘lit. Among these, his_i 30 cm boomerang hit Taro_i directly.’
 (measure numeral)

- (48) *Hanako-no kare_i-no hihan-ga Taroo_i-o kizutuke-ta
Hanako-Gen he_i-Gen criticism-Nom Taroo_i-Acc diminish-Past
‘Hanakos criticism of him_i diminished Taroo_i.’ (possessor)
- (49) *Kinoo-no kare_i-no hihan-ga Taroo_i-o kizutuke-ta.
Yesterday-Gen he_i-Gen criticism-Nom Taroo_i-Acc diminish-Past
‘lit. Yesterday’s criticism of him_i diminished Taroo_i.’ (temporal adjunct)

We have seen that, in all these examples, the underlined elements allow NP-ellipsis (cf. (14), (19), (26), (31)). The above examples show that they are not located in separate projections. Otherwise, there would be no condition C violation in these examples. The ungrammaticality of these examples thus shows that the underlined genitive elements are all adjuncts. We also have evidence here that possessors, which typically survive ellipsis, are also adjuncts. The above observation can be represented in the following way (recall that I am assuming no DP for Japanese):



As shown above, these genitive elements are all adjuncts, hence do not confine the binding domain of the pronoun.

Interestingly, just like SC quantifiers and numerals that assign genitive Case,

counter numerals and quantifiers such as *ooku* ‘many’ void binding violations:⁹

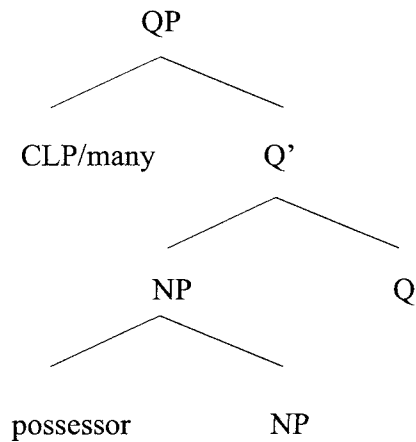
- (51) (Rop-pon-no-uti-de), san-bon-no kare_i-no buumeran-ga Taroo_i-o
 six-CL-Gen-among-in three-CL-Gen he_i-Gen boomerang-Nom Taro_i- Acc
 tyokugeki-si-ta.
 direct.hit-do-past
 ‘lit. Among six, three of his_i boomerangs directly hit Taro_i.’
 (counter numeral)

- (52) (Rop-pon-no-uti-de), ookuno-no kare_i-no buumeran-ga Taroo_i-o
 six-CL-Gen-among-in many-Gen he_i-Gen boomerang-Nom Taro_i-Acc
 tyokugeki-si-ta.
 direct.hit-do-past
 ‘lit. Among six, many of his_i boomerangs directly hit Taro_i.’
 (quantifier)

There is no violation of Condition C in (51) and (52), contrary to (46), (47), and (48). These examples then provide evidence that counter numerals and quantifiers such as *ooku* ‘many’ introduce independent projections. This is structurally represented as follows:

⁹ Elements in the brackets are provided merely to set up appropriate contexts. They are not in the nominal projection.

(53)



Q is a null head and CLP stands for classifier phrase. Spec, QP is occupied either by CLP or a quantifier such as *ooku* ‘many’. This analysis also captures the fact that CLP and *ooku* cannot co-occur:

- (54) **ooku-no san-satu-no hon*
many-Gen three-CL-Gen book
‘many three books’

This example thus provides evidence that CLP and *ooku* ‘many’ compete for a single position (Spec, QP).¹⁰

Turning back to the issue of binding, the structure given in (53) gives us a straightforward explanation of the facts we have observed. As the QP dominates the NP, the former confines the binding domain of the possessor.

To summarize, I have argued in this section (i) that genitive remnants of NP-ellipsis behave like adjuncts and (ii) that numerals and quantifiers, which lack the genitive

¹⁰ This example might also be excluded in the semantics.

marker under NP-ellipsis, require their own projections. The evidence to these effects come from the binding facts in Japanese, which show that genitive phrases do not confine the binding domain of a pronoun.¹¹ I have also shown that some quantifiers do confine the binding domain of a pronoun. The above discussion strengthens the conclusion reached in the previous section that adjuncts in fact can license NP-ellipsis. What we have seen above is that all genitive elements in question are adjuncts syntactically.

4.5 Analysis

We have so far seen that genitive elements that license NP-ellipsis are all adjuncts syntactically, which is inconsistent with SM's/SLM's analysis of NP-ellipsis in Japanese. In this section I will propose an analysis of the observations made in the previous sections. The gist of the analysis is summarized below:

(55) A head with a Case-feature is a phase head.

(56) Only complements of phase heads can undergo ellipsis (Boeckx 2009, Gengel 2009, Takahashi 2002).

(57) Phase heads require edges when phase head complements undergo ellipsis.

(cf. Saito and Murasugi 1990, Saito, Lin, and Murasugi 2008).

Let me explain the above assumptions in detail. (55) is a restatement of what I have argued for in chapter 2 (recall that I argued in chapter 2 and chapter 3 that Case-valuation determines phases)¹² I am extending the hypothesis to Case-assignees (nominals) and

¹¹ Recall that SC and Chinese behave like Japanese in the relevant respects.

¹² I am assuming that both traditional Case assigners and traditional Case assignees have uninterpretable Case-features (see Boškovic to appear b).

assume that a head with a Case-feature is a phase head.¹³ Note at this point that in the cases of NP-ellipsis we have discussed, Case-particles survive ellipsis. This will be crucial for the analysis I will propose below. (56) captures the fact that well-known examples of ellipsis such as sluicing all target complements of phase heads. For example, in sluicing, what is elided is the TP complement of C, which is a phase head.

(57) is a refinement of SM and SLM's generalization, according to which only functional categories that undergo Spec-Head agreement license ellipsis. I assume with Chomsky (2000) that specifiers and adjuncts to a phasal projection count as edges in the relevant respect. Furthermore, as we discussed above, following Bošković (2008, 2010b), Fukui (1986, 1988), and Fukui and Takano (2000), among others, I assume that Japanese does not have DP.

Let us now see how the proposals capture the basic data we have discussed:

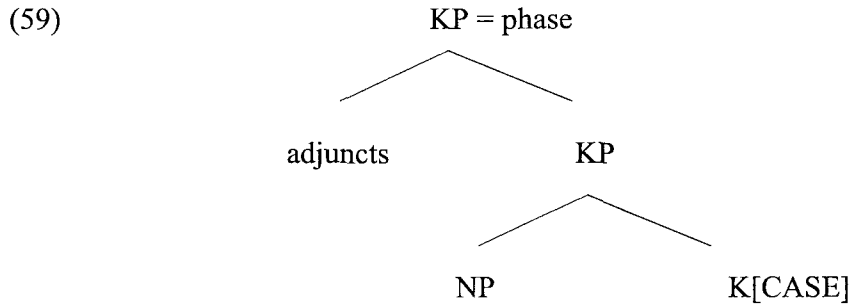
- (58) Ziro-wa [Taroo-no [NP taido]]-o hihansi-ta ga, Yoshio-wa
 Ziro-Top Taro-Gen attitude-Acc criticize-Past though Yoshio-Top
 [Hanako-no [NP-~~taido~~]]-o hihansi-ta.
 Hanako-Gen attitude-Acc criticize-Past
 'Ziro criticized Taro's attitude, but Yoshio criticized Hanako's

The second sentence of (58) contains an ellipsis site, which is followed by a Case-marker. Based on this observation, I propose that K(ase)P is the highest nominal projection in (58).¹⁴ ¹⁵ Given (55), this projection is a phase (see also Bošković 2010a). Furthermore,

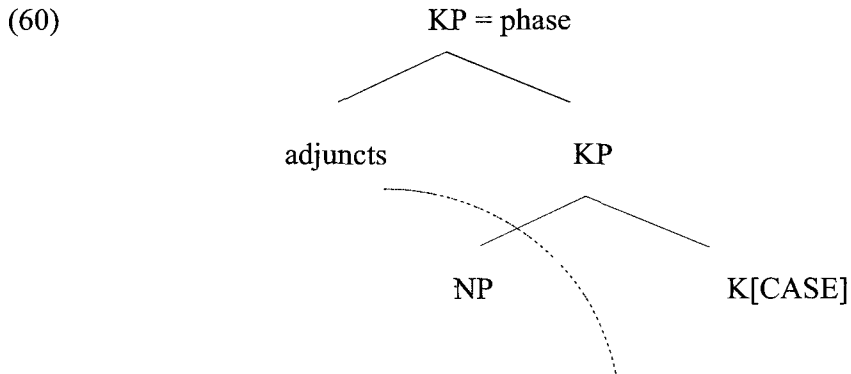
¹³ An alternative formulation is the one adopted by Bošković (2010a), where the highest nominal projections are phases. See also section 8 for a modified version of the Case analysis suggested in the text above.

¹⁴ Note that I am not assuming that KP corresponds to DP in English, which is proposed by Kishimoto

I modify the structure I discussed above and assume that genitive adjuncts are KP-adjoined.¹⁶ Consider the following structure:¹⁷



Here, the KP is a phase as the K head bears a Case-feature (cf.(55)) and a genitive adjunct is base-generated in the KP-adjoined position, as I have proposed above. Let us now consider how NP-ellipsis works under the current analysis:



Here, the KP is a phase (cf.(55)) and the NP complement of the K head (NP) undergoes ellipsis in accordance with (56). (57) is satisfied by the genitive adjunct. Notice that as

(2005), Tateishi (1989), and Tonoike (1991), among others. Note also that I don't assume that KP is necessarily universally present, leaving the issue open.

¹⁵ I am assuming that KP to account for the fact that the Case-marker survives ellipsis (i.e. this is why I am not placing it under NP). If this Case-realization can be dealt within PF, then there may be no need to posit the KP projection. Adjuncts can then be analyzed as NP-adjoined.

¹⁶ Another option for adjunct placement is discussed below.

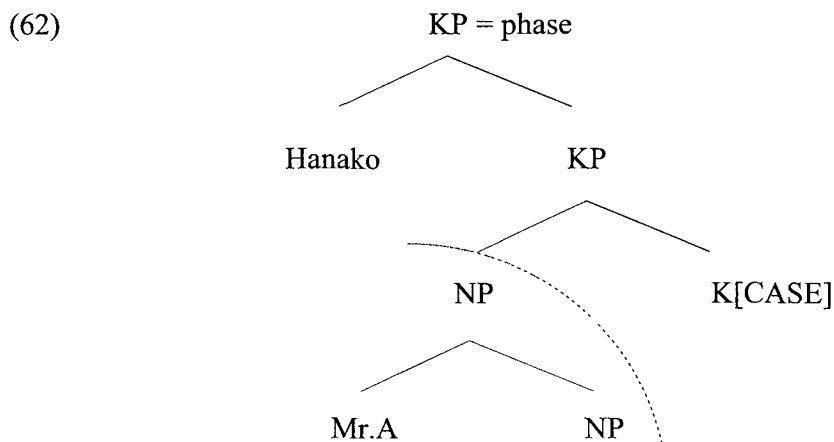
¹⁷ I assume that the topic marker *-wa* is located in K (cf. Tonoike 1991).

adjuncts are KP-adjoined, KP does not confine the binding domain, which captures the binding facts we have observed above.

Let us now turn to the following example, where one adjunct is contained in the ellipsis site:

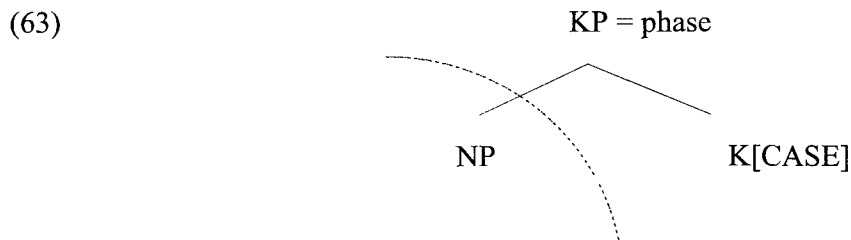
- (61) Hanako-no A-san-no hihan-wa ii ga,
 Hanako-Gen Mr.A-Gen criticism-Top good.Pres though,
 Taroo-no ~~A-san-no~~ ~~hihan~~-wa yoku-na-i
 Taro-Gen Mr.A-Gen criticism-Top good-Neg-Pres
 ‘Hanako’s criticisms of Mr. A is good, but Taro’s criticisms of Mr. A is not.’

Here the genitive adjunct as well as the head noun is elided in NP-ellipsis. Following Bošković (2004a), who shows that adjuncts can be exceptionally placed in constructions involving ellipsis in a number of cases, I propose that the adjunct which is elided is NP-adjoined and that such placement is possible if and only if NP-ellipsis is operative (see Bošković 2004a). Consider the following derivation:



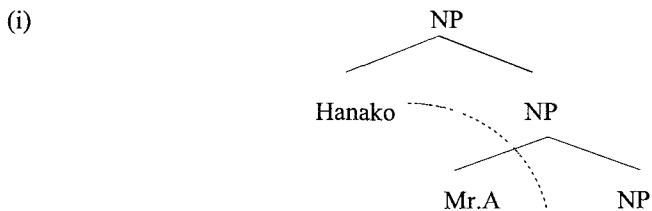
As the NP-complement is elided, *A-san*, which is NP-adjoined, is also elided. Note that the condition on NP-ellipsis in (57) is satisfied because *Hanako* is KP-adjoined.¹⁸

Recall that I assume that phase heads require either adjuncts or specifiers when they license ellipsis. We then predict that NP-ellipsis should not be possible without adjuncts. This is schematically shown below:



Here, KP has no adjunct or specifier. (57) is thus not satisfied. As expected, the relevant example is ungrammatical:

¹⁸ An alternative option under the analysis that does not assume KP (see footnote 15), in which adjuncts are always NP-adjoined, is that the lower segment of the NP is elided, hence only one adjunct survives ellipsis.



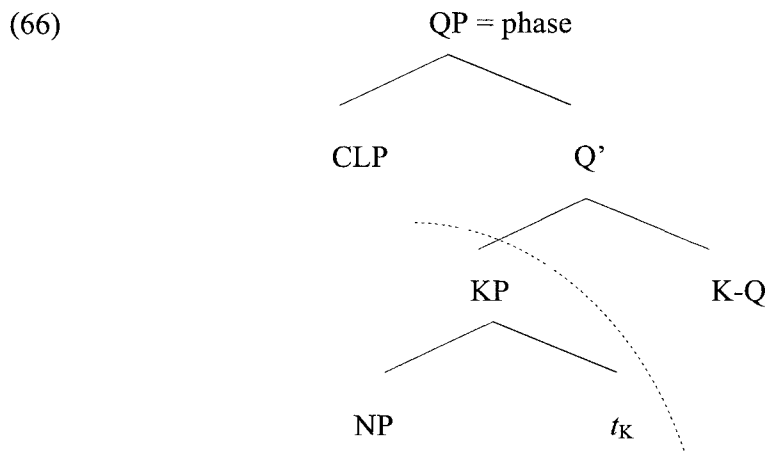
- (64) *Ziroo-wa [Taroo-no [NP taido]]-o hihansi-ta ga, Yoshio-mo
 Ziro-Top Taro-Gen attitude-Acc criticize-Past though Yoshio-also
 [NP ~~taido~~]-o hihansi-ta.
 attitude-Acc criticize-Past
 ‘Ziro criticized Taro’s attitude, but Yoshio also criticized attitude.’

In the second sentence only the case particle survives ellipsis. This sentence is unacceptable, which can be straightforwardly accounted for under the approach to ellipsis adopted here.

Consider now the case of counter numerals, which is repeated below:

- (65) Taroo-wa [yon-satu-no hon]-o kat-ta ga, sono-uti
 Taro-Top four-CL-Gen book-Acc buy-Past though that-out.of
ni-satu-o sudeni yomi-oe-ta.
 two-CL-Acc already read-finish-Past
 ‘Taro bought four books, but he already finished reading two of them.’

The second sentence of this example involves ellipsis. Note again that the Case particle survives ellipsis. Recall further that I concluded based on the binding facts that counter numerals require an independent projection. These facts can be captured by the following structure:



Here the QP dominates the KP, which captures the binding facts we have observed. I propose that the K-head, which is a realization of a Case-feature, undergoes head movement to Q. Since the head of QP now contains a Case-feature, QP then counts as phase here. Another way of looking at this would be to assume that by the K to Q head movement, the phasal property of KP is inherited by QP (see den Dikken 2007, Gallego 2007, and Gallego and Uriagereka 2007, among others for much relevant discussion concerning phase extension/sliding).¹⁹ By (56), the complement KP can now undergo ellipsis because the QP is a phase. (57) is then satisfied because CLP is in the specifier of QP.²⁰

To sum up, I have shown in this section that a particular approach to phases, when coupled with some plausible assumptions, can capture the basic data regarding

¹⁹ Under the alternative formulation by Bošković (2010a), where the highest nominal projection is a phase, we could say that the K-head moves to the Q-head to avoid derivational crash. (The K-head has an interpretable feature. We can assume that because of that feature, which indicates that K must move, K does not make KP a phase before its movement.)

²⁰ Interestingly, Japanese also allows NP to precede CLP, as shown by the following example:

- (i) Taro_o-wa [hon yon-satu]-o kat-ta.
 Taro-Top book four-CL-Acc buy-Past
 'Taro bought four books.'

I set aside examples of this kind. See Watanabe (2006, 2008) and references therein for discussion.

NP-ellipsis in Japanese. It is worth noting that the current analysis is a mixture of two apparently conflicting hypotheses in the literature. Thus, Bošković (2008, 2010a, 2010b), Fukui (1986, 1988) and Fukui and Takano (2000) argue that Japanese lack a D projection, while SL and SLM argue that Japanese does have a D projection. I have shown that the ‘DP effect’ discussed by SM and SLM is best explained by a particular approach to phase/ellipsis and the lack of DP projection.

4.6 Genitive Case, numerals, and adjuncts

This section explores some ramifications of the present analysis. First, I revisit the mod-insertion rule in light of the observations made in the previous sections. Second, I discuss cases where both adjuncts and numerals show up at the edge of a phase. I also explore the possibility that KP can be base-generated above QP.

4.6.1 Genitive Case revisited

In this section I discuss the status of the mod-insertion rule in light of the new observations made in the previous sections. We have seen above that counter numerals and some quantifiers can license NP-ellipsis if they do not bear genitive Case:

- (67) Taroo-wa [subete/ooku-no gakusei]-o hihansi-ta ga,
 Taro-Top all/many-Gen student-Acc criticize-Past though
 Hanako-wa [subete/ooku(-no*) ~~gakusei~~]-o syoosansi-ta.
 Hanako-Top all/many-Gen student-Acc praise-Past

‘Though, Taro criticized all the students/ many students, Hanako praised all the students/many students.’

(67) shows that NP-ellipsis is impossible with a genitive quantifier but is available without the genitive marker. In light of this kind of data, (Watanabe (2010) discusses numerals with a classifier), Watanabe (2010) suggests the following modification of the mod-insertion rule:

(68) Mod-Insertion (revised)

$[_{DP} \dots XP(-tense) N^a] \longrightarrow [_{DP} \dots XP(-tense) Mod N^a],$

where the head noun is overtly realized and Mod = no (Watanabe 2010:66)

The domains of application of this rule are extended projections of the head noun. The above rule captures (67). Furthermore, Watanabe (2010) goes on to suggest that Japanese has structural genitive Case, on the basis of the example where remnants of NP-ellipsis bear genitive Case:

(69) [Taroo-no [_{NP} taido]]-wa yoi ga, [_{DP} Hanako-no [_{NP} ~~taido~~]]-wa
 Taro- Gen attitude-Top good though Hanako-Gen attitude-Top
 yoku na-i.
 good Neg-Pres
 ‘Though Taro’s attitude is good, Hanako’s isn’t’

Here, the remnant of NP-ellipsis bears genitive Case. Watanabe (2010) concludes that the remnant here receives structural genitive Case, which is not subject to the revised mod-insertion rule. While this analysis is quite interesting, we have seen that genitive

remnants under NP-ellipsis are all adjuncts, which are standardly assumed not to bear structural Case. Furthermore, we have seen that elements that are clearly adjuncts (e.g. relative clauses) get *-no* when they license NP-ellipsis. This seems to suggest that *no* assigned to remnants of NP-ellipsis is in fact a contextual Case-marker.²¹ We then have to reconsider the mod-insertion rule. I therefore suggest an addition to the original formulation of the mod insertion rule from Kitagawa and Ross (1982) and SLM:

- (70) $[_{QP/KP} \dots XP(-tense) N^a] \rightarrow [_{QP/KP} \dots XP(-tense) \text{Mod } N^a]$, where $\text{Mod} = no$.
 $\text{Mod} = \phi$ if the entire KP is deleted.

The underlined part states that *-no* cannot be inserted when the KP-complement undergoes ellipsis. This captures the fact that counter numerals and other quantifiers such as *subete* ‘all’ cannot bear genitive Case when KP is elided.

4.6.2 QP and adjuncts

In this section I discuss cases where numerals and adjuncts appear together. I will show that consideration of a wider range of facts provides support for the analysis proposed above. I will also consider here the possibility that both the QP-KP structure, where QP dominates KP, and the KP-QP structure, where KP dominates QP, can be base-generated.

Let us first consider the case where a numeral/quantifier precedes a genitive adjunct. The relevant paradigm is given below:

²¹ I assume that contextual Case-markers are not involved in Case-valuation. See however, section 8 for an alternative treatment of *-no*.

(71) A sensei-wa subete-no Taroo-no tikoku-o yurusi-ta.
 Pro. A-Top all-Gen Taro-Gen tardiness-Acc forgive-Past
 ‘lit. Prof. A forgave all taro’s tardiness.’

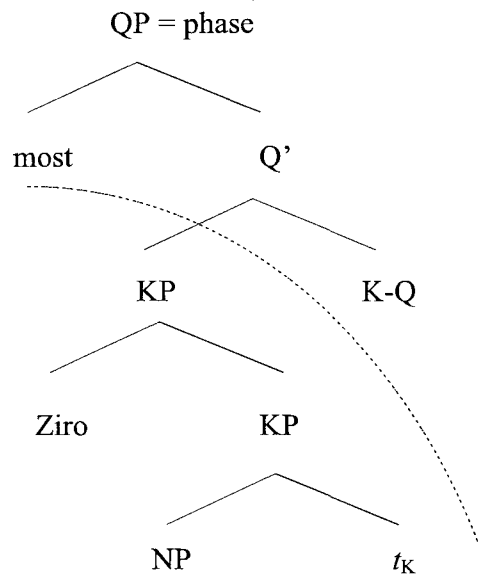
(72) a. *B sensei-wa hotondo-no Ziroo-no ~~tikoku~~-o yurus-anakat-ta.
 Prof.B-Top most-Gen Ziro-Gen tardiness-Acc forgive-Neg-Pat
 ‘lit. Prof. B didn’t forgive most of Ziro’s tardiness.’

b. *B sensei-wa hotondo-no Taroo-no ~~tikoku~~-o yurus-anakat-ta.
 Prof.B-Top most-Gen Taro-Gen tardiness-Acc forgive-Neg-Past
 ‘lit. Prof. B didn’t forgive most of Taro’s tardiness.’

c. B sensei-wa hotondo Taroo-no ~~tikoku~~-o yurus-anakat-ta.
 Prof.B-Top most Taro-Gen tardiness-Acc forgive-Neg-Past
 ‘lit. Prof. B didn’t foriave most of Taro’s tardiness.’

(71) is an antecedent sentence and (72a-c) are sentences involving ellipsis. The quantifier and the genitive adjunct cannot survive NP-ellipsis together (cf.(72a)), the quantifier cannot survive NP-ellipsis with the genitive particle (cf.(72b)), and the quantifier can survive NP-ellipsis if it does not bear the genitive marker (cf.(72c)). The derivation of (72c) is given below:

(73)



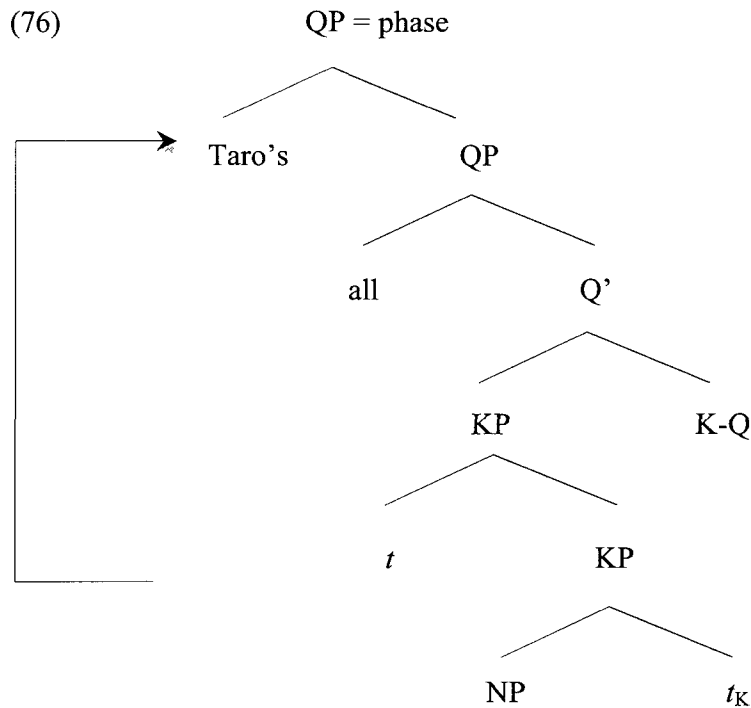
The crucial point of the derivation is that the K-Q complex is a phase head and the KP is a spell-out domain. Let us now consider how the (un)grammaticality of each sentence in (72) can be explained. (72a), where both the quantifier and the possessor are stranded under NP-ellipsis, is ruled out because *Ziroo* is not located at the edge of a phase head (i.e. the edge of QP). As a result, the possessor cannot survive NP-ellipsis. In (72b), the entire NP complement undergoes ellipsis. However, as the quantifier alone survives ellipsis, this quantifier cannot bear the genitive marker, which captures the ungrammaticality of this example. (72c) is predicted to be grammatical under the present analysis because the quantifier that survives ellipsis does not have the genitive marker.

Lets us now turn to the case where the possessor precedes the quantifier:

- (74) A sensei-wa Taroo-no subete-no tikoku-o yurusi-ta.
 Prof.A-Top Taro-Gen all-Gen tardiness-Acc forgive-Past
 ‘lit. Prof. A forgave all taro’s tardiness.’
- (75) a. *B sensei-wa Ziroo-no hotondo-no ~~tikoku~~-o yurus-anakat-ta.
 Prof.B-Top Ziro-Gen most-Gen tardiness-Acc forgive-Neg-Past
 ‘lit. Prof. B didn’t forgive most of Ziro’s tardiness.’
- b. *B sensei-wa Ziroo-no hotondo ~~tikoku~~-o yurus-anakat-ta.
 Pro. B-Top Ziro-Gen most tardiness-Acc forgive-Neg-Past
 ‘lit. Prof. B didn’t forgive most of Ziro’s tardiness.’
- c. B sensei-wa Ziroo-no (~~subete-no~~)—~~tikoku~~-o yurus-anakat-ta.
 Pro. B-Top Ziro-Gen all-Gen tardiness-Acc forgive-Neg-Past
 ‘lit. Prof. B didn’t forgive all of Ziro’s tardiness.’

(74) serves as an antecedent sentence. One immediate question is how we can account for the word order in (74). So far, I have assumed the all/CLP–adjunct order is the basic order. We then have two options to consider: (i) the adjunct-*all/most* order is derived by scrambling (i.e. moving the adjunct), the all/most-adjunct order being the base-generated order or (ii) the adjunct-*all/most* order can be derived by base-generation. Under the latter analysis both the QP > KP order and the KP > QP order can be base-generated.

Let us first consider the scrambling option. The derivation of (74) under this option is given below:



One might wonder if the movement in question should be impossible due to anti-locality; the movement in question does not cross a full phrase (i.e. a full category), hence should violate anti-locality under the definition of anti-locality adopted by Bošković (2005), discussed in chapter 3. To solve the problem, slightly departing from the definition of anti-locality employed in Bošković (2005), I assume that movement must cross more than one segment of a phrase. Under this definition of anti-locality, the movement described in (76) is allowed because the movement crosses two segments (QP and KP). Furthermore, Bošković's (2005) account of extraction out of SC NPs, documented in chapter 3, is not affected.

Let us now consider how we can account for (75a-c). (75a) is ruled out because the quantifier *hotondo* 'most' bears the genitive marker (cf. (70)). (75b) apparently seems to be allowed under the analysis currently pursued because *hotondo* 'most' does not bear the

genitive marker. Nothing we have seen so far seems to rule out this example. However, this example can be ruled out by an independently motivated constraint on ellipsis. It is well-known that scrambling out of ellipsis sites is ungrammatical (see Shinohara 2006 and Takita 2010). In Japanese, clausal complements can undergo argument ellipsis, as shown below:

- (77) a. Taro_o-wa [_{CP} zibun-ga sakini sono teiri-o syoomeisi-ta
 Taro-Top self-Nom first that theorem-Acc prove-Past
 to] syutyoosi-ta.
 that claim-Past
 ‘lit. Taro claimed that self proved the theorem first.’
- b. Ziroo-wa [_{CP} ~~zibun-ga sakini sono teiri-o~~ syoomeisi-ta
 Ziro-Top self-Nom first that theorem-Acc prove-Past
~~to~~] hanronsi-ta.
 that counter-argue-Past
 ‘lit. Ziro counter-argued that self (= Ziroo) proved the theorem first.’
- (Takita 2010: 127)

(77a) serves as an antecedent sentence and (77b) contains an elided CP. This can be verified by the fact that (77b) allows a sloppy interpretation of the embedded subject *zibun* ‘self’, where *zibun* ‘self’ in (77b) can refer to Ziroo. Given that sloppy reading is a hallmark of ellipsis (see Williams 1977, among others), the above data show that ellipsis is operative in (77b). Interestingly, scrambling out of the elided CP-complement is disallowed:

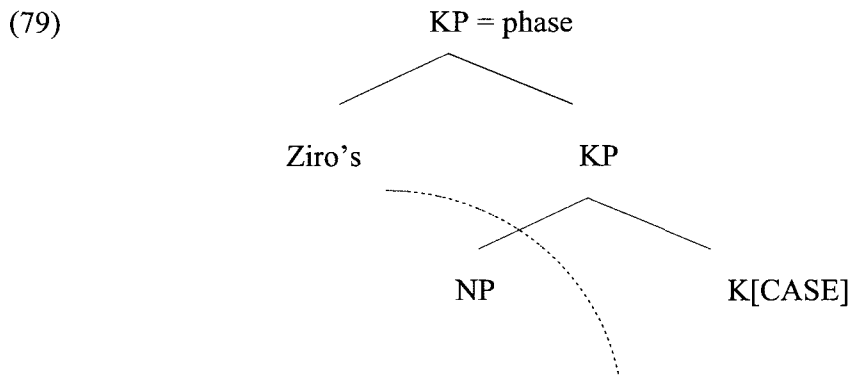
- (78) a. Sono teiri-o_i Taro-wa [_{CP} zibun-ga sakini t_i
 that theorem-Acc Taro-Top self-Nom first
 syoomeisi-ta to] syutyoosi-ta.
 prove-Past that claim-Past
 ‘lit. That theorem_i, Taro claimed [that he proved t_i first]’
- b. Sono teiri-o_j Ziro-wa [_{CP} zibun-ga sakini t_j
 that theorem-Acc Ziro-Top self-Nom first
 syoomeisi-ta to] hanronsi-ta.
 prove-Past that counter-argue-Past
 ‘lit. That theorem_j, Ziro counter-argued [that he proved t_j first]’
- c. *Sono teiri-o_j Ziroo-wa [_{CP} ~~zibun-ga~~ ~~sakini~~ ~~t_j~~
 that theorem-Acc Ziro-Top self-Nom first
 ~~syoomeisi-ta to~~] hanronsi-ta.
 prove-Past that counter-argue-Past
 ‘lit. That theorem_j, Ziro counter-argued [that he proved t_j first]’

(Takita 2010: 128)

(78a) is an antecedent and (78b) involves long-distance scrambling of the embedded object *sono teiri* ‘that theorem’. Significantly, in (78c), the CP-complement undergoes ellipsis and scrambling out of this CP complement is prohibited which shows that scrambling out of an ellipsis site is impossible. Now, turning back to (75b), the ungrammaticality of this example can be treated on a par with the ungrammaticality of (78b). In both cases, scrambling is taking place out of an ellipsis site (see Takita 2010 for

further discussion).²²

Let us now consider (75c). The status of the example is unclear. In particular, factually, it is not clear whether (75c) involves deletion of *tikoku* ‘tardiness’ or deletion of *subete-no tikoku* ‘all tardiness’. Under the scrambling approach we are considering, we are led to conclude that what is elided is *tikoku* ‘tardiness’. This is so because under this analysis, we cannot delete the quantifier (i.e. the quantifier would be at the edge of QP, and NP would be elided). (75c) thus needs to be analyzed in the following way:



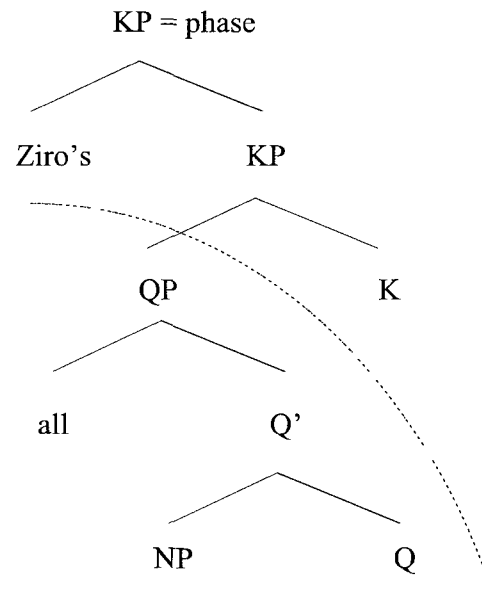
This derivation does not have QP. The genitive adjunct is in the KP-adjoined position and the NP-complement is elided in accordance with the proposals made above.

Let us now discuss the other option to derive the surface word order in (74) namely, base-generation. As discussed above, under this option both the QP > KP order and the KP > QP order can be base-generated.²³ We thus have the following derivation for (75):

²² We may expect that scrambling out of a TP complement which undergoes sluicing should be impossible given that sluicing satisfies the condition on ellipsis proposed in this paper. As the nature of the “sluicing” construction is still under debate (see Saito 2004, Takahashi 1994, and Takita 2010, among many others, for discussion). I leave this issue open at this point.

²³ Under the base-generation analysis, the scrambling of the genitive adjunct needs to be blocked, which can be done by adopting Bošković ‘s (2005) definition of anti-locality (see chapter 3) instead of the definition proposed in earlier in this section.

(80)



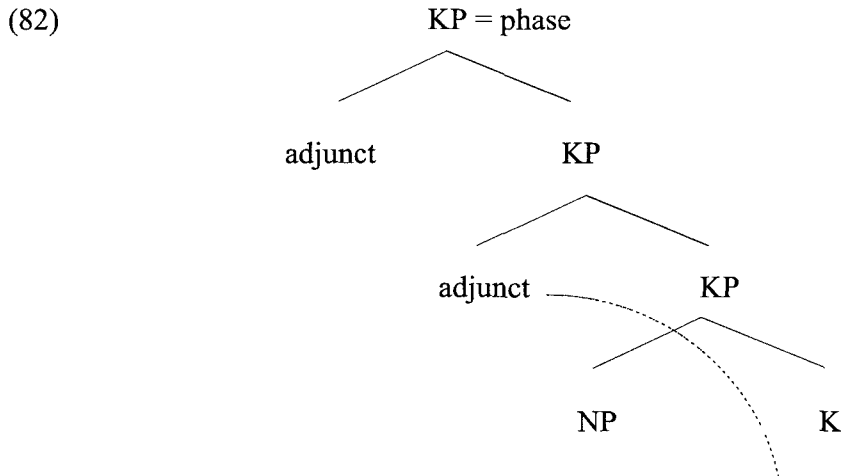
Here, KP is a phase and the QP complement undergoes ellipsis. (75a) again follows from the condition on *no*-insertion we have seen above. (75b) also follows straightforwardly from this analysis because we have to elide the entire QP. (75c) also follows under this analysis because the possessor can be stranded. In fact, (75c) can now be accounted for even if the ellipsis site contains QP (i.e. *hotondo* ‘most’).

The current analysis makes one important prediction regarding remnants of NP-ellipsis. In particular, we predict that if there is more than one KP-adjunct, multiple adjuncts can survive NP-ellipsis. This is in fact borne out by the following observation by Kimura (1994) (see also Abe 2006, Saito and Fukui 1998, and Takahashi 2008b)

- (81) Hanako-no A-san-nitaisite-no taido-wa ii ga,
 Hanako-Gen Mr.A-to-Gen attitude-Top good.Pres though,
 Taroo-no B-san-nitaisite-no ~~taido~~-wa yoku-na-i
 Taro-Gen Mr.B-to-Gen attitude-Top good-Neg-Pres
 ‘Hanako’s attitude to Mr. A is good, but Taro’s (attitude) to Mr. B is not.

(Kimura 1994:163)

There are two adjuncts which survive NP-ellipsis in the second sentence, which can be straightforwardly accommodated under the structure in (82).



KP is a phase here and there are two KP-adjuncts which survive NP-ellipsis. The analysis appears to make a prediction regarding how these adjuncts should scopally interact with each other. More specifically, when both adjuncts are quantified, we might expect to get scope ambiguity: if we assume that scope interpretation is determined based on c-command relations, the adjuncts in the above structure c-command each other. However, this prediction is not borne out:

- (83) Azia-no ik-ka-koku-no taitei-no sosiki-kara-no
 Asia-Gen one-CL-country-Gen most-Gen organization-from-Gen
 dattai-wa mitomer-are-ta
 withdrawal-Top approve-Pass-Past
 ‘One Asian country’s withdrawal from most organizations was approved.’
 (one > most, *most > one) (Takahashi 2008b: 398)

Here, the subject quantifier must take scope over the quantified PP. However, this seems to be a general property of multiple adjunct/specifier configurations in Japanese. It is well-known that Japanese allows multiple subject constructions (see Kuno 1973 and Saito 1982, among others):

- (84) Bunmeikoku-ga dansei-ga ninki-da.
 civilized.country-Nom men-Nom popular-Cop
 ‘It is men of civilized countries that are popular.’

This example has two nominative subjects. To account for this construction, Saito (1982) proposes that the outer subject *bunmeikoku* ‘civilized country’ is adjoined to TP:

- (85) [_{TP} bunmeikoku [_{TP} dansei] ninki-da]

Here the outer subject is interpreted under the aboutness relation. In other words, the lower TP (that men are popular) is a description about the TP adjoined element (civilized

countries). Importantly, in the multiple subject construction, the higher subject must take scope over the lower subject:

- (86) Azia-no ik-ka-koku-ga taietei-no haiyuu-ga ninki-da.
 Aisia-Gen one-Cl-country-Nom most-Gen actor-Nom popular-Cop
 In one Asian country, most of the actors are popular.
 (one > most *most > one)

The higher subject in (86) must take scope over the lower subject. Thus, the scope asymmetry in question holds for the multiple subject construction in Japanese as well. This in turn indicates that the scope rigidity effect holds in multiple adjunct/specifier constructions such as (83) and (86).

The current analysis makes another prediction. Regardless of whether the adjunct-quantifier order is derived by adjoining the adjunct to QP or by base-generating KP, with the adjunct adjoined to KP, above QP, we predict that there should be a Condition B violation if the adjunct precedes the quantifier, in contrast to the examples where the quantifier precedes the adjunct. This prediction is in fact borne out (see Cheng 2011):

- (87) [Kare_i-ga omotyaya-de kat-ta buumeran]-ga Taro_i-o
 he_i-Nom toy.store-at buy-Past boomerang-Nom Taro_i-Acc
 tyokugekisi-ta.
 directly.hit-Past
 ‘The boomerang that he_i bought at a toystore directly hit Taro_i.’

- (88) a. Ooku-no kare_i-no buumeran-ga Taroo_i-o
 many-Gen he_i-Gen boomerang -Nom Taro_i-Acc
 tyokugeki-si-ta
 directly.hit-do-Past
 ‘lit. Many of his_i boomerangs directly hit Taro_i.’ (quantifier)
- b. ?*Kare_i-no ooku-no buumeran-ga Taroo_i-o
 he_i-Gen many-Gen boomerang -Nom Taro_i-Acc
 tyokugeki-si-ta
 directly.hit-do-Past
 ‘lit. Among six, many of her_i boomerangs directly hit Hanako_i.’
 (quantifier)

In (87), the pronoun *kare* ‘he’ is embedded in a relative clause. The pronoun can be coreferential with *Taroo*. In (88a), the pronoun is located below the QP projection and the QP confines the binding domain of the pronoun. However, although the judgment is a bit delicate, when the pronoun is located above QP, the coreference reading is difficult to obtain, as in (88b), which I take to indicate that the pronoun does c-command the referential expression (i.e. object). This contrast between (88a) and (88b) is accounted for under the analysis proposed in this chapter. Consider the following representations (I omit irrelevant details):

- (89) a. [QP many [KP his] bottle] hit Taro
 b. [QP his [QP many] bottle] hit Taro
 c. [KP his [QP many] bottle] hit Taro

In (89a), which corresponds to (88a), QP confines the c-command domain of the pronoun. The pronoun can then co-refer with *Taro*. On the other hand, in (89b), where the pronoun is adjoined to QP by movement and (89c), where the pronoun is adjoined to KP by base-generation, the pronoun c-commands *Taro*, which yields a violation of Condition C. The pronoun thus cannot co-refer with *Taro*.

To summarize, I have explored some consequences of the proposed analysis. First, I suggested an addition to the mod-insertion rule to capture deletion of the genitive Case-marker under NP-ellipsis with numerals. Second, I considered the cases where genitive adjuncts and numerals co-occur in NP-ellipsis and considered the possibility that word order permutation between quantifiers/counter numerals and adjuncts can be captured by base-generation of the two orders, the alternative being that the adjunct-quantifier/numeral order arises via scrambling of the adjunct.

4.7 Why are the ungrammatical cases ungrammatical?

In this section, I turn to the ungrammatical cases where the remnants are identified as adjuncts. SM and SLM address three cases including (i) counter numerals, (ii) nominal adjuncts, and (iii) relative clauses (that are not followed by *-no*). We have already seen that counter numerals do license NP-ellipsis when they are not followed by the genitive particle. In this section I discuss nominal adjuncts and relative clauses.

Let us start with the case of a nominal adjunct, repeated below:

- (90) *[Hare-no hi]-wa yo-i ga, [ame-no hi]-wa
 clear-Gen day-Top good-Pres though rain-Gen day-Top
 otikom-u.
 feel.depressed-Pres
 ‘Clear days are OK, but I feel depressed on rainy days.’

We have already seen that genitive marked remnants are adjuncts. We thus cannot explain the ungrammaticality of the example by simply assuming that *ame* ‘rain’ is an adjunct. There are, however, reasons to think that the noun *hi* ‘day’ behaves differently from other nouns. We have seen above that relative clauses do allow NP-ellipsis when they are followed by *-no*.

- (91) [John-ga su-ru-tumori]-no kugeki-wa seikousu-ru-ga
 John-Nom do-Pres-intend-Cop attack-Top succeed-Pres-though
 [Mary-ga su-ru-tumori]-no ~~kugeki~~-wa seikousi-na-i
 Mary-Nom do-Pres-intend-Cop attack-Top succeed-Neg-Pres
 ‘lit. An attack John intends to do will succeed, but an attack that Mary intends
 to do will not succeed.’

NP-ellipsis in the second sentence is licensed by a relative clause, which is followed by *-no*. With this in mind, let us first consider the following example:

- (92) John-ga kougeki-o su-ru-tumori-no hi
 John-Nom attack-Acc do-Pres-intend-Cop day
 ‘lit. the day when John intends to do an attack.’

The relative clause in this example modifies *hi* ‘day’. Interestingly, the relative clause disallows NP-ellipsis:

- (93) *[John-ga kougeki-o su-ru-tumori]-no hi-wa sittei-ru-ga,
 John-Nom attack-Acc do-Pres-intend-Cop day-Top know-Pres-though
 [Mary-ga kougeki-o su-ru-tumori]-no ~~hi~~-wa sir-ana-i.
 Mary-Nom attack-Acc do-Pres-intend-Cop day-Top know-Neg-Pres
 ‘lit. I know the day when John intends to do an attack but I don’t know the
 day when Mary intends to do an attack.’

The ungrammaticality of this example shows that the adjunct clause, which is headed by *-no*, cannot license NP-ellipsis when the head noun is *hi* ‘day’. The contrast between (91) and (93) is important here. While the relative clause, which is an adjunct, licenses NP-ellipsis in the former, it does not license it in the latter. This indicates that the impossibility of NP-ellipsis should be attributed to the property of the head noun *hi* ‘day’, rather than the property of the modifiers.

Interestingly, nouns like *hi* ‘day’ have been known to be different from regular nouns in that they sometimes obligatorily require modifiers (see Okutsu 1984 for discussion).²⁴ Let us first consider the following examples, which show the defectiveness

²⁴ Other elements of this kind are *tosi* ‘year’, *syuu* ‘week’, and *toki* ‘time’. See Okutsu (1984).

of *hi* ‘day’ :²⁵

- (94) a. Nyuuyooku-ni tui-ta hi-ni ziko-ni at-ta.
 New York-in arrive-Past day-on accident-Dat be.involved-Past
 ‘I/he/she was involved in an accident on the day I arrive at New York.’

(Okutsu 1984: 225)

- b. *hi-ni ziko-ni at-ta.
 day-on accident-Dat be.involved-Past
 ‘I/he/she was involved in an accident on a day.’ (Okutsu 1984: 225)

- c. Doyoubi/mikka-mae-ni ziko-ni at-ta.
 Saturday/three.days-before-on accident-Dat be.involved-Past
 ‘I/he/she was involved in an accident last Saturday/three days ago.’

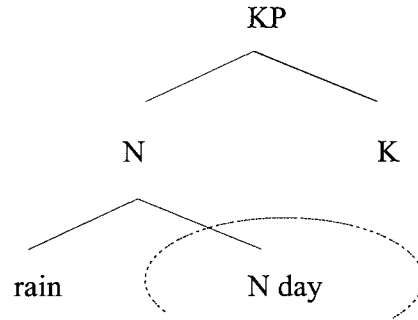
The postposition *-ni* ‘on’ takes temporal expressions such as *doyoubi* ‘Saturday’ and *mikka-mae* ‘three days ago’, which refer to a specific point in a given time interval ((cf.(94c)). *hi* ‘day’ cannot be the complement of this postposition unless it is modified by a modifier ((cf.(94a-b)). Following Kadowaki (2005), I assume that *hi* ‘day’ in the above examples is a noun of type $\langle\langle e, t \rangle \langle e, t \rangle\rangle$, which indicates that the noun obligatorily takes a modifier. I further assume the obligatory modifier cannot move. This gives us the following structure:

²⁵ There are cases where *hi* can stand alone. Consider the following example from Okutsu (1984):

- (i) hi-o aratame-te a-ou.
 day-Acc change-TE meet-let’s
 ‘lit. Let’s meet after changing day (let’s meet later).’ (Okutsu 1984:224)

It is beyond the scope of this chapter to consider such cases.

(95)



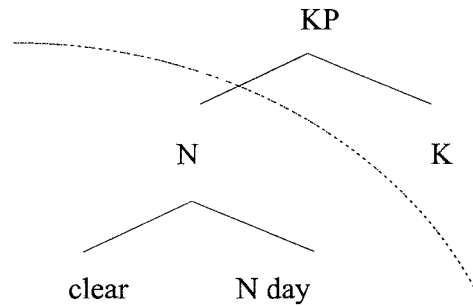
Here *hi* ‘day’ takes a modifier, which is adjoined to N. Importantly, what is elided here is not the complement of the phase head. Rather, only a part of the complement is elided. This ellipsis is impossible under the current approach to ellipsis, where only complements of phase heads can be elided. Furthermore, KP has no edge here, hence, the edge requirement is not satisfied.

Let us now consider the following example, which involve ellipsis of the entire nominal:

- (96) *Taro-wa [hare-no hi]-ga suki-da. Hanako-mo ~~[hare-no hi]-ga~~
 Taro-Top clear-Gen day-Nom like-cop Hanako-also clear-Gen day-Nom
 suki-da.
 like-Cop
 ‘Taro likes clear days. Hanako also likes clear days.’

The second sentence involves ellipsis of *hare-no hi* ‘clear day’. This example is ungrammatical. The nominal which involves ellipsis in (96) is analyzed in the following way:

(97)



As discussed above, the modifier is adjoined to N, which means that the KP has no Specs/adjuncts, as a result of which NP-ellipsis is impossible under the current approach to ellipsis (i.e. the edge requirement is not satisfied).

Recall that the adjuncts we have previously discussed are all KP-adjuncts, that is, they are directly merged to KP. We make a new prediction. If we add genuine KP adjuncts to the above example, NP-ellipsis should be possible. The following examples show that not all adjuncts can combine with *hi* ‘day’ to satisfy its selectional requirement:

- (98) a. ame-no hi b. *Tokyo-no hi
 rain-Gen day Tokyo-Gen day
 ‘rainy days’ ‘days of Tokyo’
- c. Tokyo-no hare-no hi
 Tokyo-Gen clear-Gen day
 ‘clear days of Tokyo’

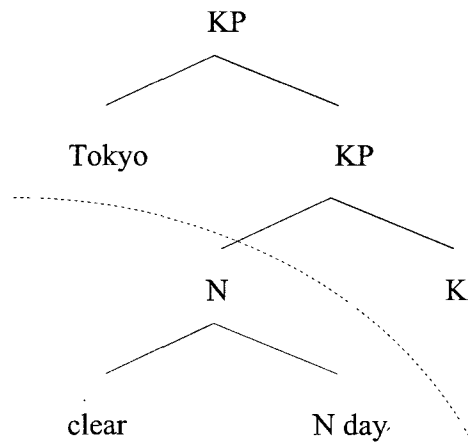
The contrast between (98a) and (98b) is important here. The ungrammaticality (98b)

shows that *Tokyo* cannot satisfy the selectional property of *hi* ‘day’. However, *Tokyo* can modify *hi* ‘day’ when *hi* ‘day’ first combines with *hare* ‘clear’. I take this to mean that *Tokyo* is an unambiguous KP adjunct, which cannot directly combine with *hi* ‘day’. Significantly, examples like (98c) allow NP-ellipsis when KP-adjuncts survive ellipsis:

- (99) Tokyo-no [ame-no hi]-wa yo-i ga, Akita-no
 Tokyo-Gen rain-Gen day-Top good-Pres though, Akita-Gen
 {~~ame-no~~ ~~hi~~}-wa otikom-u.
 rain-Gen day-Top feel.depressed-Pres
 ‘Clear days in Tokyo are OK, but I feel depressed on rainy days in Akita.’

In this example, locative adjuncts precede *ame* ‘rainy’ and they license NP-ellipsis. The derivation of this example is given below:

(100)



Tokyo is base-generated as an adjunct to the KP projection. As predicted, NP-ellipsis is

possible. Recall that I am assuming that in this structure, *hare* ‘clear’ cannot move to KP. We then predict that NP-ellipsis is impossible when both *Tokyo* and *hare* ‘clear’ survive ellipsis. This prediction is borne out by the following data:

- (101) *Tokyo-no ame-no hi-wa yo-i ga, Akita-no ame-no
Tokyo-Gen rain-Gen day-Top good-Pres though, Akita-Gen rain-Gen
~~hi~~-wa otikom-u.
day-Top feel.depressed-Pres
‘Clear days in Tokyo are OK, but I feel depressed on rainy days in Akita.’

This example shows that *ame* ‘rain’ cannot license ellipsis even in the presence of a locative adjunct. This is expected under the current analysis because *ame* ‘rain’ cannot survive ellipsis.

The current analysis makes another prediction. We predict that in non-ellipsis examples the ordering between the locative adjunct and the obligatory adjunct must be rigid. In other words, the locative adjunct should always precede the obligatory adjunct. This prediction is also borne out:

- (102) a. Tokyo-no ame-no hi
Tokyo-Gen rain-Gen day
‘rainy days in Tokyo’
b. *?ame-no Tokyo-no hi
rain-Gen Tokyo-Gen day
‘rainy days in Tokyo’

The ungrammaticality of (102b) shows that word order permutation is impossible in this example, which follows from the current analysis.

To sum up, I have shown that nominal adjuncts discussed by SM and SLM, which cannot survive ellipsis, can also be accommodated under the current analysis. I have also shown that the current analysis makes some new predictions, which are in fact borne out.

Let us finally consider the case of relative clauses repeated here:

- (103) *[[Taroo-ga kinoo at-ta] hito]-wa yasasi-i ga,
 Taro-Nom yesterday see-Past person-Top kind-Pres though
 [[Hanako-ga kinoo at-ta] ~~hito~~]-wa kowa-i.
 Hanako-Nom yesterday see-Past person-Top scary-Pres
 ‘The person Taroo saw yesterday is kind, but the person Hanako saw yesterday is
 scary.’

This example shows that relative clauses (when they are not followed by *-no*) cannot license NP-ellipsis. SLM attribute this observation to the fact that relative clauses are adjuncts. However, we have already seen above that relative clauses do license NP-ellipsis when they are followed by *-no*. Based on this observation, I tentatively suggest the following condition on the phonological realization of KP-edge:

- (104) KP adjuncts must bear genitive Case when they survive ellipsis.

(104) rules out (103) because the relative clause, which is a KP-adjunct, does not bear the

genitive maker. The relative clause in question thus cannot satisfy (104).

(104) is just a descriptive statement. Whether or not it follows from something else is left for future research.

4.8 Deriving the edge requirement: Genitive Case as a structural Case

In this section I briefly explore an alternative analysis of NP-ellipsis in Japanese, where the genitive Case is considered to be a structural Case, which makes it possible to connect the analysis of NP-ellipsis and the Case/phase hypothesis more straightforwardly.

I have argued in chapter 2 and chapter 3 that Case-valuation determines phasehood. I have also argued in this chapter that the K-head bears a Case-feature, which is valued by ν or T, and suggested that this makes KP a phase. However, there is an alternative way to connect the Case/phase hypothesis and the analysis of NP-ellipsis, on which it is not necessary to make any modifications to the way Case affects phasehood from chapter 2.

Let us now consider the following possibility:

(105) Genitive Case assigned within NP is a structural Case assigned by K .

(105) departs from the assumption adopted in the previous sections that genitive Case is a contextual Case-marker (i.e. it is not assigned by Case-valuation) (cf. (68)). One advantage of this alternative proposal is that *no* is now treated as “regular” structural Case. Recall that we have seen above that the distribution of the genitive Case is quite wide, which motivated the following rule of genitive assignment:

(106) $[\text{NP} \dots \text{XP}(-\text{tense}) \text{N}^a] \rightarrow [\text{NP} \dots \text{XP}(-\text{tense}) \text{Mod N}^a]$, where $\text{Mod} = \text{no}$.

$\text{Mod} = \phi$ if KP-complement is deleted.

Furthermore, the underlined statement in (106) states that genitive Case on quantifiers/numerals cannot be phonologically realized when the KP complement undergoes deletion. Under the alternative analysis pursued here, (106) can be restated as follows:

(107) Condition on genitive Case feature assignment

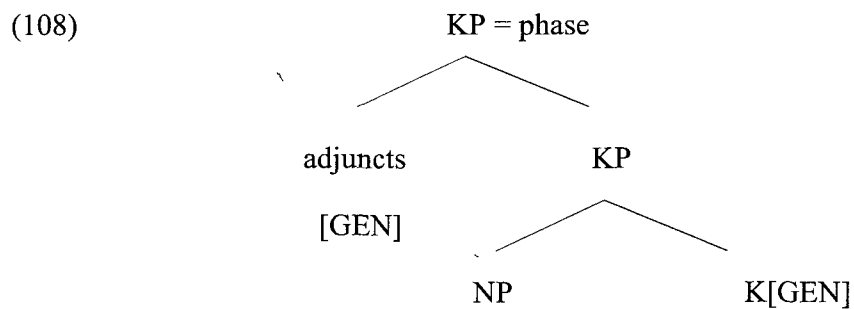
Any phrase that does not have tense can bear a (genitive) Case feature within an extended projection of NP.

Genitive Case cannot be phonologically realized when KP-complement is deleted.

We thus capture the effect of (106) under the alternative analysis.

Lets us now consider the alternative analysis in detail. The relevant structure is given in (108).²⁶

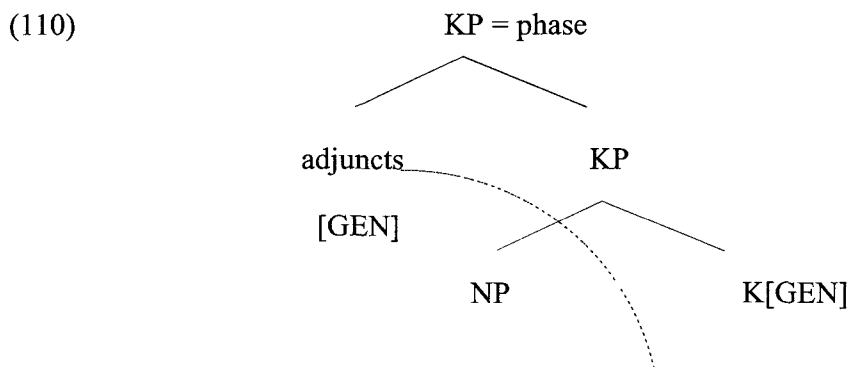
²⁶ Note that it does not matter whether K (or its projection) probes the adjunct or the adjunct probes K (see Bošković 2007a for Case-valuation); what is important here is that K values Case.



I have argued above for the following condition on NP-ellipsis:

(109) Only complements of phase heads can undergo ellipsis.

Thus, the NP undergoes ellipsis in (108) because it is a complement of the K head, which values Case hence counts as a phase head:



One important advantage of this analysis is that it derives the ‘edge’ requirement on NP-ellipsis from Case considerations. The edge requirement I proposed is repeated here:

(111) Phase heads require edges when phase head complements undergo ellipsis.

This condition states that phase heads require edges. Significantly, under the alternative analysis introduced in this section, we can derive (111): the K-head requires adjuncts on the KP edge because only when an adjunct is present K values Case, which makes KP a phase. If the K-head does not value Case of an adjunct (which is what happens when there is nothing on the KP-edge), KP is not a phase, hence NP-ellipsis is impossible due to (109). Therefore, there is no need for (111). I conclude then that while the analysis pursued earlier in this chapter requires the conditions in (55) - (57), repeated here, the analysis pursued in this section needs only (56), the extension of the Case/phase hypothesis from chapter 2 in (55) being unnecessary and (57) being deduced.

(112) A head with a Case-feature is a phase head. (= (55))

(113) Only complements of phase heads can undergo ellipsis. (= (56))

(114) Phase heads require edges when phase head complements undergo ellipsis.
(= (57))

Another advantage of this alternative analysis is that we can straightforwardly capture the parallelism between Japanese NP-ellipsis and English NP-ellipsis. As observed by Jackendoff (1971), NP-ellipsis is possible only with genitive remnants:

- (115) a. I have read Bill's book, but I haven't read [_{DP} John's [_{NP} ~~book~~]]
 b. *I have edited a book, but I haven't written [_{DP} a [_{NP} ~~book~~]]
 c. *I have seen the book, but I haven't had a chance to read [_{DP} the [_{NP} ~~book~~]]

(SLM: 252)

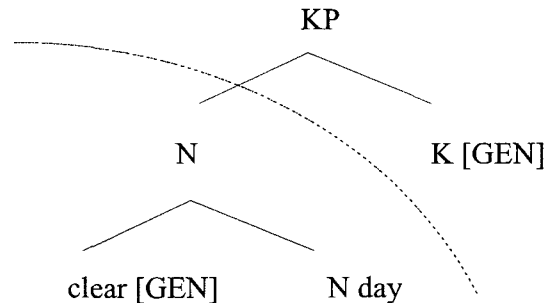
NP-ellipsis is allowed in (115a), where there is a genitive element *John* in Spec, DP. On the other hand, NP-ellipsis is disallowed in (115b-c), where there is no genitive element in Spec, DP. The contrast between (115a) and (115b-c) follows from the alternative analysis pursued here. If D assigns Case to its Spec (more precisely, D first Agrees with an element in the NP complement and the genitive element moves to Spec, DP), DP is a phase, hence NP-ellipsis is possible. On the other hand, if D does not value Case, as in (115b-c), DP is not a phase, hence NP-ellipsis is disallowed.²⁷

One potential issue for this analysis, which needs further investigation, concerns cases where an entire NP with an nominal adjunct is elided. The example is repeated in (116), with the relevant structure given in

- (116) *Taro-wa [hare-no hi]-ga suki-da. Hanako-mo [~~hare-no~~—~~hi~~]-ga
 Taro-Top clear-Gen day-Nom like-Cop Hanako-also clear-Gen day-Nom
 suki-da.
 like-cop
 ‘Taro likes clear days. Hanako also likes clear day.’

²⁷ The analysis is, however, inconsistent with Bošković’s (2005) claim that DP is always a phase in English (see chapter 3).

(117)



Here the K-head assigns genitive Case to the nominal adjunct. However, NP-ellipsis is still impossible.²⁸ I leave an account of this open here, merely noting that the affix status of the K head (i.e. the Stranded Affix Filter) may be relevant here. All other data discussed earlier receive a straightforward account under the alternative analysis.

While the alternative analysis I have briefly sketched above has a lot of welcome consequences, I leave further investigation of this analysis for future research.

3.9 Conclusion

In this chapter I have proposed a reinterpretation of SLM's analysis of NP-ellipsis. First, I showed that adjuncts such as relative clauses in fact license NP-ellipsis. Second, I showed that genitive elements that license NP-ellipsis are in fact all adjuncts. Third, I provided an analysis that crucially relies on the contextual emergence of phases and where Case also plays an important role. The crucial assumption was that only complements of phase heads can undergo ellipsis, where phase heads are determined by Case. I have also suggested a way of deducing SLM's Spec-Head agreement (i.e. edge) requirement on ellipsis. One of the most important aspects of the proposed analysis is that

²⁸ Recall that ellipsis of *hi* 'day' alone is impossible because such ellipsis does not involve ellipsis of the complement of a phase head.

it captures the DP-effect observed by SM and SLM without assuming DP projection, in line with the family of analyses in which Japanese lacks DP.

Appendix: More on binding in Japanese

In this appendix, I examine binding facts discussed in the literature that appear to be inconsistent with the data I discussed in section 3 of this chapter, and suggest an account of the data in question. I also address some possible analyses and their predictions.

As discussed in section 3, applying Despić's (2009, 2011) binding test to Japanese, Bošković (2010b) and Cheng (2011) show that Japanese patterns with SC in the relevant respects:

- (1) a. *Karei-no saisin-no eiga-wa hontouni Kurosawai-o rakutansase-ta.
he_i-Gen latest-Gen movie-Top really Kurosawa_i-Acc disappoint-Past
'His_i latest movie really disappointed Kurosawa_i.'
- b. *Kurosawai-no saisin-no eiga-wa hontouni karei-o rakutansase-ta.
Kurosawa_i-Gen latest-Gen movie-Top really him_i-Acc disappoint-Past
'Kurosawa_i's latest movie really disappointed him_i.'

Following Despić's (2009, 2011) analysis of SC, I treated the possessors in (1a-b) as NP-adjoined.²⁹ Due to the lack of DP on top of NP, (1a) violates Condition C and (1b) violates Condition B.

Examples like (1a-b) have already been addressed in the literature. Thus, Hoji (1985, 1990), among others, gives the following examples as grammatical (the judgments below are Hoji's; see also Whitman 1986³⁰):

²⁹ This was modified later by adopting KP adjunction.

³⁰ Whitman (1986) was originally written in 1982.

- (2) a. [Kare_i-no hahaoya]-ga John_i-o seme-ta (koto)
 he_i-Gen mother-Nom John_i-Acc criticize-Past fact
 'His_j mother criticized John_j.' (Hoji 1985:7)
- b. John_i-no sensei-ga kare_i-o bengosi-ta.
 John_i-Gen teacher-Nom he_i-Acc defend-past
 'John_i's teacher defended him_i.' (Hoji 1990:100)

Among the six speakers (all linguists) I have consulted three of them found (2a) totally ungrammatical and the other three found the example degraded. Importantly, none of them found the example acceptable. This is an important fact that needs to be accounted for. For (2b), I found some variation among speakers. Three of them found the example marginal and the other three found it grammatical.

One interfering factor that may be relevant here is focus. As Bošković (2010a) points out, focus affects the binding facts in SC discussed in section 3 (focalization of the relevant elements improves the SC constructions) and needs to be controlled for. Focus thus could be affecting the binding facts in Japanese, too. Consider in this respect the following data from Whitman (1987), which show that *pro* and overt pronouns do not exhibit uniform behavior with respect to binding:³¹

- (3) a. John_i-no itiban sitasi-i tomodati-ga kare_i-o uragit-ta.
 John_i-Gen most intimate-Pres friend-Nom him_i-Acc betray-Past
 'John_i's most intimate friend betrayed him_i.' (Whitman 1987:354)

³¹ Whitman (1986) attributes (3a) (or examples similar to it) to Mohanan (1981), which I do not have access to.

- b. *John_i-no itiban sitasi-i tomodati-ga *pro*_i uragit-ta.
 John_i-Gen most intimate-Pres friend_i-Nom betray-Past
 ‘John_i’s most intimate friend betrayed him_i.’ (Whitman 1987:366)

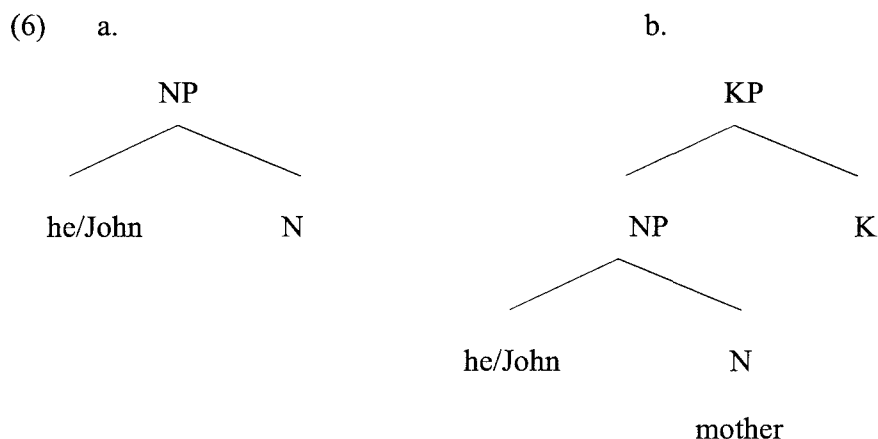
In (3a) the object is an overt pronoun *kare* ‘he’ and in (3b) the object is *pro*. (3b) is ungrammatical with the intended reading. The contrast between the two examples can be explained by focus, given that only the overt pronoun can be focused (*pro* cannot be focused). Furthermore, as Hoji (1985) observes, an intensifier *sae* ‘even’ improves the grammaticality of sentences such as (4), which is another indication of the relevance of focus here (recall that the same holds for SC):

- (4) John_i-no teki-sae-ga *pro*_i aisitei-ru
 John_i-Gen enemy-even-Nom love-Pres
 ‘Even John_i’s enemy loves him_i.’ (Hoji 1985: 382)

Nevertheless, even without focus, (2a-b) seem to be better than (1a-b) and (5a-b):

- (5) a. *[Kare_j-no buumeran]-ga John_j-o tyokugekisi-ta.
 he_j-Gen boomerang-Nom John_j-Acc direct.hit-Past
 ‘His_j boomerang hit John_j directly.’
 b. *?John_i-no buumeran-ga kare_i-o tyokugekisi-ta.
 John_i-Gen boomerang-Nom he_i-Acc direct.hit-past
 ‘John_i’s boomerang him_i directly.’

The head noun in these examples and (1a-b) is inanimate and the examples are worse than the comparable examples in (2). Interestingly, as far as I can see, most of the examples discussed in the literature involve *relational nouns* such as *titioya* ‘father’ and *hahaoya* ‘mother’, which are often claimed to take an argument to represent possessive relations (see Partee and Borshev 1998, among others). If this is correct, the contrast between (2a-b) and (5a-b) is in fact expected under the current analysis. In (2a-b) the genitive noun is an argument of the noun. I take this to mean that the genitive NP is a complement of the head noun.³² If this analysis is correct, the NP node, projected by the head noun, confines the c-command domain of the genitive NP, voiding violations of the binding conditions.³³ Consider (6), involving a relational noun (To allow for easier comparison with the discussion in section 3, I give both a structure that does not adopt KP and a structure that assumes KP):

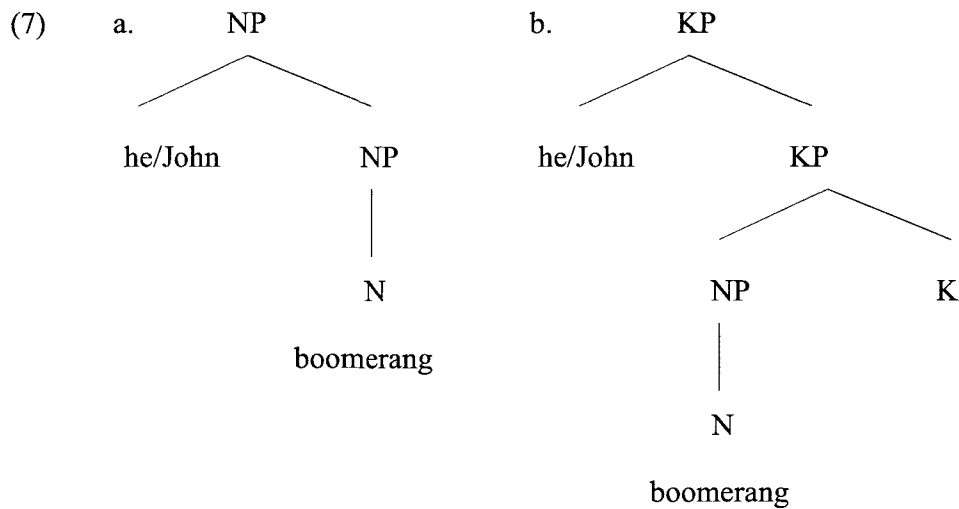


Here the NP-projection prevents *kare/John* from c-commanding out of the TNP (traditional noun phrase) in question, which captures the grammaticality of (2a-b). On the

³² The genitive NP can be also be a specifier. Nothing hinges on the assumption made in the text.

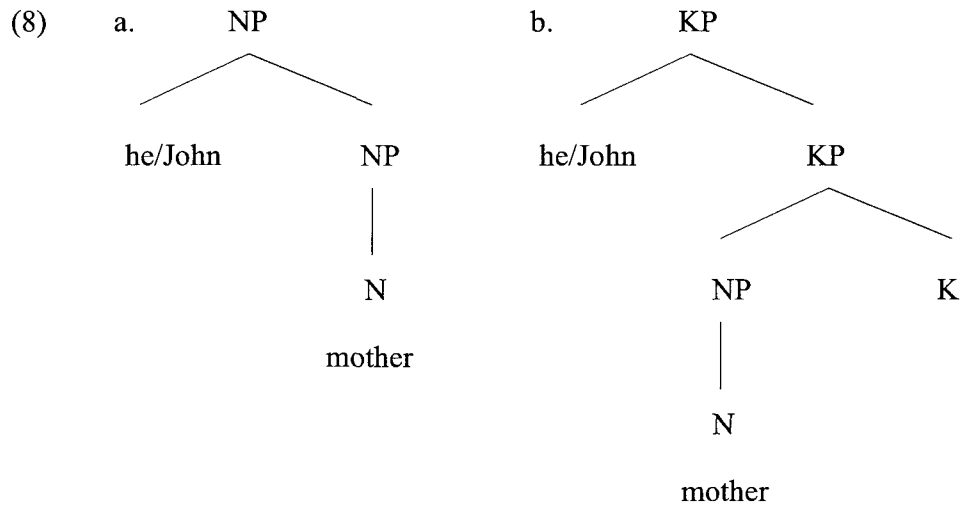
³³ Note that this option is apparently unavailable or marginal for many speakers.

other hand, the noun *buumeran* ‘boomerang’ is not a relational noun. Hence, the genitive noun is an adjunct, which means that the NP/KP node, which the adjunct is adjoined to, does not confine the c-command domain of the genitive NP, as we have seen in this chapter:



As *kare/John* c-command out of the NP/KP projection, (5a-b) violate the binding conditions.

However, the above discussion shows that a possessor of relational nouns *can* be a nominal complement, not it *must* be a complement. One possibility that should be considered is that possessors of relational nouns can get either argument or adjunct treatment, i.e. that both options are in principle available for them, including the adjunction to NP/KP option.



Let us now focus on the KP analysis since KP is crucially involved in ellipsis. Notice that the genitive possessor in (8b) is on the KP edge. This configuration conforms to the condition on NP-ellipsis I have argued for which states that the K head requires an edge to license NP-ellipsis in (8b). This is so because the K head has an edge (i.e. adjunct). If the adjunct option is available, we would then expect that arguments of relational nouns should license NP-ellipsis. However, this expectation is not borne out:

- (9) *John-no hahaoya-wa yasasi-i-ga Tomu-no [_{NP} ~~hahaoya~~]-wa
 John-Gen mother-Top kind-Pres-though Tom-Gen mother-Top
 kibisi-i.
 strict-Pres
 ‘John’s mother is kind but Bill’s is strict.’

The second sentence is ungrammatical as a sentence with NP-ellipsis. The sentence can only be interpreted with the pronominal *–no*, which in this context implies a derogatory

attitude of the speaker (see Kamio 1983, McGloin 1985).³⁴ The unavailability of NP-ellipsis in (9) can be explained if we assume that the adjunction option in (8), where the NP/KP-adjoined genitive argument is stranded in NP-ellipsis, is not available for relational nouns. In other words, the ungrammaticality of (9) can be taken as an argument, in fact, a rather strong argument that possessors of relational nouns are unambiguously arguments; we would then have a simple, unified account of (2a) and (9). However, the following sentence, in which a clear adjunct is added in order to license NP-ellipsis with a relational noun *tomodati* ‘friend’, is also ungrammatical.

- (10) **[Tomu-ga a-u tumori]-no itoko-wa yasasi-i-ga*
 Tom-Nom meet-Pres intend]-Cop cousin-Top kind-Pres-though
[John-ga a-u tumori]-no [_{NP} ~~itoko~~]-wa *yasasiku-na-i.*
 John-Nom meet-Pres intend]-Cop cousin-Top kind-Neg-Pres
 ‘The cousin Tom intends to meet is kind but the cousin John intends to
 meet is not.’

Here, the adjunct clause, which is a KP-adjunct, modifies the relational noun *itoko* ‘cousin’. NP-ellipsis is impossible in the second example (the derogatory pronominal use of *–no* is possible here). This example may be taken to indicate that relational nouns generally do not allow NP-ellipsis. We then may need to conclude that the

³⁴ The pronominal *–no* yields a derogatory attitude of the speaker toward what is being replaced when used with an animate noun:

- (i) a. *Taro-no sensei-wa yasasi-i.*
 Taro-Gen teacher-Top kind-Pres
 ‘Taro’s teacher is kind.’
 b. *Taro-no-wa yasasi-i.*
 Taro-one-Top kind-Pres
 ‘Taro’s one (= teacher) is kind.’ (the speaker has a derogatory attitude toward the teacher)

ungrammaticality of (9) does not necessarily exclude (8) as an option: NP-ellipsis is anyway unavailable with relational nouns. Note also that adjunct clauses of the kind we used in (11) can license NP-ellipsis if the head noun is an abstract noun, as seen section 3 of this chapter:

- (11) [John-ga su-ru-tumori]-no kougeki-wa seikousu-ru-darou-ga
 John-Nom do-Pres-intend-Cop attack-Top succeed-Pres-probably-though
 [Mary-ga su-ru-tumori]-no ~~kougeki~~-wa seikousi-na-i-darou.
 Mary-Nom do-Pres-intend-Cop attack-Top succeed-Neg-Pres-probably
 ‘lit. An attack John intends to do will probably succeed, but an attack that Mary
 intends to do probably will not succeed.’

Here, the head noun is an abstract noun *kougeki* ‘attack’ and the adjunct clause licenses NP-ellipsis.

We can also run a binding test to see if (8) is available. We make the following prediction: if we force “arguments” of relational nouns in subject positions to be KP-adjoined, they should yield violations of binding conditions (i.e. since they would c-command out of KP) (I use the term “argument” as neutral with respect to the adjunct/argument treatment of possessors of relational nouns). We can test this prediction by considering examples where relational nouns have a genuine KP-adjunct, as well as an “argument”. Consider the following structure (ADJUNCT indicates a true, unambiguous adjunct):

- (12) a. [KP ADJUNCT [NP he/John mother]]
 b. [KP he/John [KP ADJUNCT [NP mother]]]

In (12a) the ADJUNCT precedes the “argument” of the relational noun. The “argument” can then be treated as a true argument. In (12b), where the “argument” precedes the ADJUNCT, the “argument” must be KP-adjoined, given that the ADJUNCT is KP-adjoined.

Assuming the KPs in (12a-b) are in subject positions, we then predict that *he/John* in (12a) can be coreferential with a noun or a pronoun in the matrix clause *he/John* should not be able to be coreferential w(i.e. the NP projection would confine the c-command domain). On other hand, ith a noun or a pronoun in the matrix clause in (12b) (i.e. the KP projection would not confine the c-command domain of *he/John* here).

Let us now consider the following examples:

- (13) a. [KP kirei-na [NP kare-no hahaoya]]
 beautiful he-Gen mother
 'His beautiful mother'
- b. [KP kare-no [KP kirei-na]] hahaoya
 he-Gen beautiful mother
 'His beautiful mother'

Here we have an adjective, which I assume is a KP-adjunct. (13a) corresponds to (12a), where the adjective precedes the pronoun. The pronoun thus can be located within the NP. On the other hand, (13b) corresponds to (12b), where the adjective follows the pronoun.

The pronoun here should be KP-adjoined. We then predict that (13a), but not (13b), should yield a binding condition violation. This prediction is borne out:

- (14) a. [_{KP} Kirei-na [_{NP} kare_j-no hahaoya]]-ga John_j-o seme-ta.
 beautiful he-Gen mother-Nom John-Acc criticize-Past
 'His_j beautiful mother criticized John_j.'
- b. ??[_{KP} Kare_j-no [_{KP} kirei-na hahaoya]]-ga John_j-o seme-ta.
 he-Gen beautiful mother-Nom John-Acc criticize-Past
 'His_j beautiful mother criticized John_j.'

In (14a), the pronoun is within the NP, which prevents the pronoun from c-commanding out of the NP. On the other hand, in (14b), the pronoun is KP-adjoined, as a result of which the pronoun c-commands the referential expression. The contrast here is a bit delicate, though, but (14a) is better than (14b).

One question that needs to be addressed, though, is whether the pronoun in (14b) is base-generated as a KP-adjunct or moved to the KP-adjoined position by scrambling from the complement position of the NP. I leave this issue open here, merely noting that on the latter analysis, possessors of relational nouns can be unambiguously treated as arguments, which by itself may favor this analysis.

Chapter 5: On Restructuring Infinitives in Japanese: Adjunction, Clausal Architecture, and Phases

5.1 Introduction

I have so far argued that Case plays a significant role in syntax. In particular, I have argued in the preceding chapters that Case determines phasehood. Evidence to this effect comes from the analysis of the scope puzzle in Nominative/Accusative conversion in Japanese presented in chapter 2, which is extended to various phenomena in chapter 3, and the analysis of NP-ellipsis presented in chapter 4. In this chapter I provide another piece of evidence for the significant role of Case in syntax. In particular, I show that adjunction in certain cases is constrained by Case. Furthermore, I provide another piece of evidence that ν P does not work as a phase when ν does not assign Case. I also suggest another way of creating phases.

The discussion in this chapter concerns ‘restructuring’ constructions in Japanese. ‘Restructuring’ (i.e. clause-downsizing) has been extensively discussed in the generative literature, with a variety of approaches proposed to capture the phenomenon. Thus, Cinque (2006) argues that all ‘restructuring’ verbs are functional heads. On the other hand, researchers like Hoshi (2006), Saito (2000), and Saito and Hoshi (1998), for example, argue that ‘restructuring’ involves complex predicate formation via direct merger of the verbs. Wurmbrand (2001), on the other hand, argues that there are degrees of ‘restructuring’, which are determined by the size of infinitival complements (CP, TP, ν P, VP), where the various sizes of infinitival complements correlate with various (non-) ‘restructuring’ phenomena.

One of the goals of this chapter is to resolve this tension from the perspective of

Japanese. There is considerable literature on ‘restructuring’ in Japanese (see Asano 2007, Hoshi 2006, Kageyama 1993, Koizumi 1994a, 1995, 1998, Kuno 1973, Matsumoto 1996a, Miyagawa 1987, Nakatani 2004, Nishigauchi 1993, Nomura 2003, 2005a.b, Saito 2000, Saito and Hoshi 1998, Shibatani 1978, Sugioka 1984, Tada 1992, Terada 1990, Tomioka 2006, Tsujimura 1993, Ura 1996, 1999, 2000, Yumoto 2004, and Zushi 1995, 2008, among many others). However, to the best of my knowledge, most of the important paradigms in the context of restructuring have been addressed only partially in this literature. Hence, previous studies on Japanese restructuring constructions have failed to draw a comprehensive picture that should have emerged from the observed data. I take up this issue seriously and provide a more comprehensive description of ‘restructuring’ constructions in Japanese. I show that Japanese data lead us to posit a three-way distinction in ‘restructuring’ configurations, which is broadly consistent with Wurmbrand’s (2001) proposals concerning restructuring infinitives.

Another theoretical concern of this chapter, which was mentioned above, is a restriction on adjunction found in restructuring contexts. I argue that there is a ban on adjunction to complements of lexical verbs, which is derived through an interaction of the contextual emergence of spell-out domains (i.e. phases) argued for in the preceding chapters and obligatory late insertion of adjuncts within spell-out domains (see Stepanov 2001). I also argue that the constraint is a general constraint, which yields a unified account of the distribution of adverbs, quantifiers, and adjectives. Furthermore, I will suggest another way of creating phases, which will provide a rather strong argument for the contextual approach to phasehood.

This chapter is organized in the following way. In section 2, mainly based on the observations made in the literature (see Bobaljik and Wurmbrand 2007, Matsumoto

5.2 Restructuring infinitives in Japanese and adverbs

(1) John-ga gakkoo-ni sono hon-o kai-ni it-ta. (PE)
 John-Nom school-to the book-Acc buy-NI go-Past
 ‘John went to school to buy the book.’

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- (2) Taroo-ga gakkoo-de sono hon-o yon-de it-ta. (SE)
 Taro-Nom school-at the book-Acc read-TE go-Past
 ‘Taro read the book at school and went (somewhere).’

The infinitive in (1) is followed by *-ni* while the one in (2) is followed by *-te*.² As we will see below, both constructions involve optional clause-union effects (i.e. restructuring). However, the two constructions show different syntactic behavior in other respects, which will be addressed in the following sections.

An indication of clause union effects with the constructions under consideration comes from nominative marking of objects (see Bobaljik and Wurmbrand 2007, Koizumi 1994a, 1995, 1998, Kuno 1973, Nomura 2003, 2005a.b, Saito 2000, Saito and Hoshi 1998, Tada 1992, Takezawa 1987, and Ura 1996, 1999, 2000, among many others). Consider the following sentences:

- (3) Taroo-ga eigo-o/ga hanas-e-ru.
 Taro-Nom English-Acc/Nom talk-can-Pres
 ‘Taro can speak English.’
- (4) Boku-ga Mary-ni Taroo-ga eigo-o/*ga hanasu-to
 I-Nom Mary-Dat Taro-Nom English-Acc/Nom speak-that
 i-e-ru.
 say-can-Pres
 ‘I can say to Mary that Taro speaks English.’

² *Te* is pronounced as *de* when the former is preceded by a verb stem with a voiced consonant (Kuno 1973). Kuno (1973) and Martin (1975) define *-te* as a gerundive marker. I will not discuss the nature of *-te* in this paper. See Nakatani (2004) and references cited therein for discussion of *-te*.

In (3), the object is marked nominative in the presence of the potential suffix *-e* 'can'. In (4), on the other hand, there is a clausal boundary between *-e* 'can' and the object. Here, the object cannot be marked nominative. This shows that nominative Case-licensing of objects is clause-bounded.

The PE construction and the SE construction can involve (optional) restructuring. This is supported by the fact that the embedded objects in these constructions can be nominative when the matrix verbs are accompanied by the potential morpheme (see Miyagawa 1987 and Tsujimura 1993, among others). I assume that this (apparent) non-local Case dependency is an indication of restructuring following a number of researchers (see Bhatt 2005 and Bobaljik and Wurmbrand 2005, among others). This is further supported by typical distributional properties of restructuring, namely the requirement that restructuring infinitives must be adjacent to the matrix verbs (see Miyagawa 1987, Wurmbrand 2007 and Wurmbrand and Bobaljik 2005, among others):³

- (5) a. Boku-ga tosyokan-ni hon-o/ga kaesi-ni ik-e-ru. (PEs)
 I-Nom library-to book-Acc/Nom return-NI go-can-Pres
 'I can go to the library to return a book.'
- b. Boku-ga [hon-o/*ga kaesi-ni] tosyokan-ni ik-e-ru.
 I-Nom book-Acc/Nom return-NI library-to go-can-Pres
 'I can go to the library to return a book.'

³ See Wurmbrand (2007) and Wurmbrand and Bobaljik (2005) for relevance of adjacency in restructuring. It is shown there that the adjacency requirement of restructuring constructions cannot tease apart different approaches to restructuring phenomena.

- (6) a. Hanako-ga atode tosyokan-de zassi-o/ga kaesi-te (SEs)
 Hanako-Nom later library-at magazine-Acc/Nom return-TE
 ik-e-ru.
 go-can-Pres
 ‘Hanako can return a magazine at the library and go (somewhere) later.’
- b. Hanako-ga [tosyokan-de zassi-o/*ga kaesi-te] atode
 Hanako-Nom library-at magazine-Acc/Nom return-TE later
 ik-e-ru.
 go-can-Pres
 ‘Hanako can return a magazine at the library and go (somewhere) later.’

When the infinitival clause is adjacent to the matrix verb, the embedded object can be marked nominative, as shown in (5a) and (6a). Here, the clausal boundary between the matrix and the embedded clauses is transparent for nominative Case-licensing. On the other hand, in (5b) and (6b) the infinitival clause is not adjacent to the matrix verb. Here, the embedded object cannot be nominative, which indicates that restructuring is not possible.

In the remainder of this section, I show based on the previous literature that the three restructuring constructions differ regarding the distribution of adverbs. In particular, it will be shown that (i) the potential construction with a nominative object allows both matrix and embedded modification, (ii) restructuring PEs allow only matrix modification, and (iii) restructuring SEs allow only embedded modification.

Let us first consider the potential construction. This construction allows two durative adverbs.

- (7) Taroo-wa terebi-ga 1-nen-kan 3-zikan mi-re-ru.
 Taro-Top TV-Nom one-year-for three-hour watch-can-Pres
 ‘For one year, Taro can watch TV for 3 hours.’

(Bobaljik and Wurmbrand 2007:33)

The intended interpretation of this sentence is the one in which the adverb *1-nen-kan* ‘for one year’ modifies the potential verb while the adverb *3-zikan* ‘(for) three hours’ modifies the embedded verb. This example clearly shows that the potential construction allows both matrix and embedded modification.

Let us now consider restructuring PEs. As shown in the non-restructuring PE examples in (8) and (9) (cf. the accusative on the object), the adverb *10-pun-de* ‘in ten minutes’ modifies the event of eating a lobster and the adverb *3-zikan-de* ‘in 3 hours’ modifies the event of going to Boston. Note that the interpretation is identical in the two examples, independently of the position of the matrix modifiers.^{4 5}

- (8) Hanako-wa [10-pun-de robusutaa-o tabe-ni] 3-zikan-de Bosuton-ni
 Hanako-Top 10-minutes-in lobster-Acc eat-NI 3-hours-in Boston-to
 ik-e-ru.
 go-can-Pres
 ‘Hanako can go to Boston in 3 hours to eat a lobster in 10 minutes.’

⁴ Notice here that the example contains three verbs, namely the potential verb, the motion verb, and the embedded verb. As the potential verb is an atelic verb, the adverbs used here, which only modify telic verbs, cannot modify the potential verb.

⁵ Note that a clear prosodic break between the motion verb and the embedded verb is needed to make sure that the construction under consideration is a non-restructuring construction (the prosodic requirement blocks the adjacency requirement). To enforce this point, an adverb can be inserted between the two verbs.

- (9) (?)Hanako-wa 3-zikan-de Bosuton-ni [10-pun-de robusutaa-o tabe-ni]
 Hanako-Top 3-hours-in Boston-to 10-minutes-in lobster-Acc eat-NI
 (kuruma-de) ik-e-ru.
 car-by go-can-pres
 ‘Hanako can go to Boston in 3 hours to eat a lobster in 10 minutes (by car).’

The situation is different in a restructuring context. As shown in (10) and (11), restructuring is impossible with two durative adverbs; only one adverb can appear (cf. (10)). Crucially, the adverb must modify the matrix predicate (cf. (11)).

- (10)*Hanako-wa 3-zikan-de Bosuton-ni 10-pun-de robusutaa-ga
 Hanako-Top 3-hours-in Boston-to 10-minutes-in lobster-Nom
 tabe-ni ik-e-ru.
 eat-NI go-can-Pres
 ‘Hanako can go to Boston in 3 hours to eat a lobster in 10 minutes.’

- (11) Hanako-wa 3-zikan-de Bosuton-ni robusutaa-ga tabe-ni
 Hanako-Top 3-hours.in Boston-to lobster-Nom eat-NI
 ik-e-ru.
 go-can-Pres
 ‘Hanako can go to Boston in 3 hours to eat a lobster.’

Some clarifications are in order here. First, the above observation indicates that the restriction on adverbial modification is syntactic in nature, not semantic. Consider again (11). This example is actually felicitous in the context where Hanako can go to Boston in

3 hours to eat lobsters in 10 minutes, unless the adverb *10-pun-de* ‘in 10 minutes’ appears in the sentence. This indicates that the ungrammaticality is not caused by a semantic incompatibility.

The same distribution holds for SEs: (12) shows that two adverbs are possible in the non-restructuring version; (13) and (14) show that only one adverb can appear in the restructuring context. In contrast to PEs, however, the adverb must modify the embedded predicate.

- (12) (?)Hanako-wa 3-zikan-de Bosuton-ni [10-pun-de robusutaa-o tabe-te]
 Hanako-Top 3-hours.in Boston-to 10-minutes-in lobster-Acc eat-TE
 (kuruma-de) ik-e-ru.
 (car-by) go-can-Pres
 ‘Hanako can eat a lobster in 10 minutes by car and go to Boston in 3 hours (by car).’

- (13) *Hanako-wa 3-zikan-de robusutaa-ga 10-pun-de tabe-te
 Hanako-Top 3-hours-in lobster-Nom 10-minutes-in eat-TE
 ik-e-ru.
 go-can-Pres
 ‘Hanako can eat a lobster in 10 minutes and go (somewhere) in 3 hours.’

- (14) Hanako-wa 3-zikan-de robusutaa-ga tabe-te ik-e-ru.
 Hanako-Top 3-hours-in lobster-Nom eat-TE go-can-Pres
 ‘Hanako can eat a lobster in 3 hours and go (somewhere).’

This difference between PEs and SEs is further supported by the distribution of

instrumental adverbs.⁶ As shown in (15a), instrumental adverbs are possible in restructuring SEs. However, they are impossible in restructuring PEs (cf. (15b)). As shown in (16), both constructions are grammatical when the embedded object is changed to accusative—i.e., when the structure is a non-restructuring configuration.

- (15) a. Hanako-wa robusutaa-ga hasi-de tabe-te ik-e-ru. (SE)
 Hanako-Top lobster-Nom chopsticks-with eat-TE go-can-Pres
 ‘Hanako can eat a lobster with chopsticks and go (somewhere).’

- b. *Hanako-wa robusutaa-ga hasi-de tabe-ni ik-e-ru. (PE)
 Hanako-Top lobster-Nom chopsticks-with eat-NI go-can-Pres
 ‘Hanako can go to eat a lobster with chopsticks.’

- (16) a. Hanako-wa [robusutaa-o hasi-de tabe-te] (SE)
 Hanako-Top lobster-Acc chopsticks-with eat-TE
 (kuruma-de) ik-e-ru.
 car-by go-can-Pres
 ‘Hanako can eat a lobster with chopsticks and go somewhere (by car).’

- b. Hanako-wa [robusutaa-o hasi-de tabe-ni] (PE)
 Hanako-Top lobster-Acc chopsticks-with eat-NI
 (kuruma-de) ik-e-ru.
 (car-by) go-can-Pres
 ‘Hanako can go to eat a lobster with chopsticks (by car).’

Exactly the opposite situation holds for matrix modification: while restructuring PEs

⁶ See Matsumoto (1996a), Nakatani (2004), Shibatani (2007) and Tsujimura (1993), among others, for relevant discussion.

allow a matrix adverb (cf. (17a)), restructuring SEs prohibit matrix adverbs (cf. (17b)).

Non-restructuring configurations, again, allow matrix adverbs in both cases.

- (17) a. Hanako-wa zitchensya-de robusutaa-ga tabe-ni ik-e-ru. **(PE)**
 Hanako-Top bike-by lobster-Nom eat-NI go-can-Pres
 ‘Hanako can go to eat a lobster by bike.’
- b. *Hanako-wa zitchensya-de robusutaa-ga tabe-te ik-e-ru. **(SE)**
 Hanako-Top bike-by lobster-Nom eat-TE go-can-Pres
 ‘Hanako can eat a lobster and go (somewhere) by bike.’
- (18) a. Hanako-wa (zitchensya-de) [robusutaa-o tabe-ni] **(PE)**
 Hanako-Top (bike-by) lobster-Acc eat-NI
 (zitchensya-de) ik-e-ru.
 (bike-by) go-can-Pres
 ‘Hanako can go to eat a lobster by bike.’
- b. Hanako-wa (zitchensya-de) [robusutaa-o tabe-te] **(SE)**
 Hanako-Top (bike-by) lobster-Acc eat-TE
 (zitchensya-de) ik-e-ru.
 (bike-by) go-can-Pres
 ‘Hanako can eat a lobster and go (somewhere) by bike.’

To summarize, we have seen that (i) the potential construction allows both embedded and matrix modification, (ii) restructuring PEs only allow matrix modification, and (iii) restructuring SEs only allow embedded modification. The results are shown in (19)

below:⁷

⁷ Interestingly, however, (19) is not the whole story. There are restructuring ‘SEs’ that are identical on the surface but show quite different syntactic behavior from the restructuring SEs we have been discussing. We have seen above that restructuring SEs disallow matrix modification but allow embedded modification. With this in mind, consider first the following examples:

- (i) Hanako-wa zītensya-de [robusutaa-o mot-te] ik-e-ru.
 Hanako-Top bike-by lobster-Acc hold-TE go-can-Pres
 ‘Hanako can hold a lobster and go (somewhere) by bike
 (= Hanako can bring a lobster by bike).’
- (ii) Hanako-wa zītensya-de robusutaa-ga mot-te ik-e-ru.
 Hanako-Top bike-by lobster-Nom hold-TE go-can-Pres
 ‘Hanako can hold a lobster and go (somewhere) by bike
 (= Hanako can bring a lobster by bike).’

The embedded verb in these examples is *mot* ‘hold/have’ and both non-restructuring and restructuring examples are grammatical. Notice that embedded modification is also available in the restructuring context:

- (iii) Hanako-wa te-de robusutaa-o mot-te ik-e-ru.
 Hanako-Top hand-by lobster-Acc have-TE go-can-Pres
 ‘Hanako can hold a lobster with hands and go (somewhere).’
- (iv) Hanako-wa te-de robusutaa-ga mot-te ik-e-ru.
 Hanako-Top hand-by lobster-Nom have-TE go-can-Pres
 ‘Hanako can hold a lobster with hands and go (somewhere).’

Here the adverb modifies the embedded predicate *mot* ‘have’. Both restructuring and non-restructuring examples are acceptable. Thus, the two ‘restructuring SEs’ differ in the availability of matrix modification. To distinguish the SEs I have been discussing throughout and the construction I have just introduced, I will refer to the former as restructuring SEs and to the latter as restructuring complex motion verbs (CM). One crucial difference between restructuring SEs and restructuring CMs is that while the complement of the former can be an antecedent of VP-anaphora, that of the latter cannot be (see Hinds 1973, Koizumi 1994a, Nakau 1971, Shibatani 1973 and Tateishi 1991. See also Hasegawa 1980, Kageyama 1993, Koizumi 1995 and Saito 2001 for VP anaphora in complex predicates). Consider first the following examples:

SE

- (vi) Hanako-wa robusutaa-ga tabe-te ik-e-ru.
 Hanako-Top lobster-Nom eat-TE go-can-Pres
 ‘Hanako can eat a lobster and go (somewhere) after.’
- (vii) Ziroo-mo soo si-te ik-e-ru.
 Ziroo-also so do-TE go-can-Pres
 ‘Ziroo can also do so and go (somewhere).’

(vi) is a restructuring sentence and (vii) involves an anaphor, whose antecedent is the complement VP of the motion verb in (vi). These examples show that the *soo-su* ‘do so’ anaphora in Japanese can take a complement of restructuring SEs as its antecedent. Now, consider the following examples involving CMs:

CM

- (viii) Hanako-wa robusutaa-ga mot-te ik-e-ru.
 Hanako-Top lobster-Nom hold-TE go-can-Pres
 ‘Hanako can hold a lobster and go (somewhere).’
- (ix) *Ziroo-mo soo si-te ik-e-ru.
 Ziroo-also so do-TE go-can-Pres
 ‘Jiroo can also do so and go (somewhere).’

(19)	Potential	PE	SE
number of durative adverbs:	two	one	one
Embedded adverbs:	yes	no	yes
Matrix adverbs	yes	yes	no

(19) strongly suggests that we need a three-way distinction among restructuring configurations, contrary to the claims that are at least implicitly made in some works (see Cinque 2006, Hoshi 2006, Saito 2000, Saito and Hoshi 1998, among others). Thus, Cinque (2006) argues that all restructuring configurations are functional configurations, assuming a single structure for all of them.⁸ If we take this view, the results we have obtained in the previous section are difficult to account for because we would have only one type of configuration. A problem also arises if we were to attempt to extend Hoshi's (2006)/Saito's (2000)/Saito and Hoshi's (1998) analysis to cover all the cases we have discussed. This is so because this analysis also assigns a single structure to all restructuring configurations. In their analysis, all 'restructuring' configurations are obtained by directly merging 'matrix' verbs and 'embedded' verbs (see section 5 for further discussion of this approach). In the next section, I therefore propose a new analysis of the pattern in (19).

(viii) is an example of CMs, which involves an antecedent VP. However, (ix) with an anaphora is ungrammatical in contrast to (vii) (see Matsumoto 1996a). One difference that may be relevant here is that restructuring CM verbs like *mot-te ik*, but not restructuring SE verbs, have idiosyncratic interpretations (cf. Matsumoto 1996a). Thus, *mot-te ik* is better translated as 'bring' rather than 'hold and go'. In this respect, CM verbs behave as if they were words, which may be what blocks the application of VP-anaphora. I have to leave an analysis of restructuring CMs for future research in light of the surprising properties of this construction noted above.

⁸ See also Zushi (2008) for critical discussion of Cinque (2006) based on Japanese data and Wurmbrand (2004) based on German data.

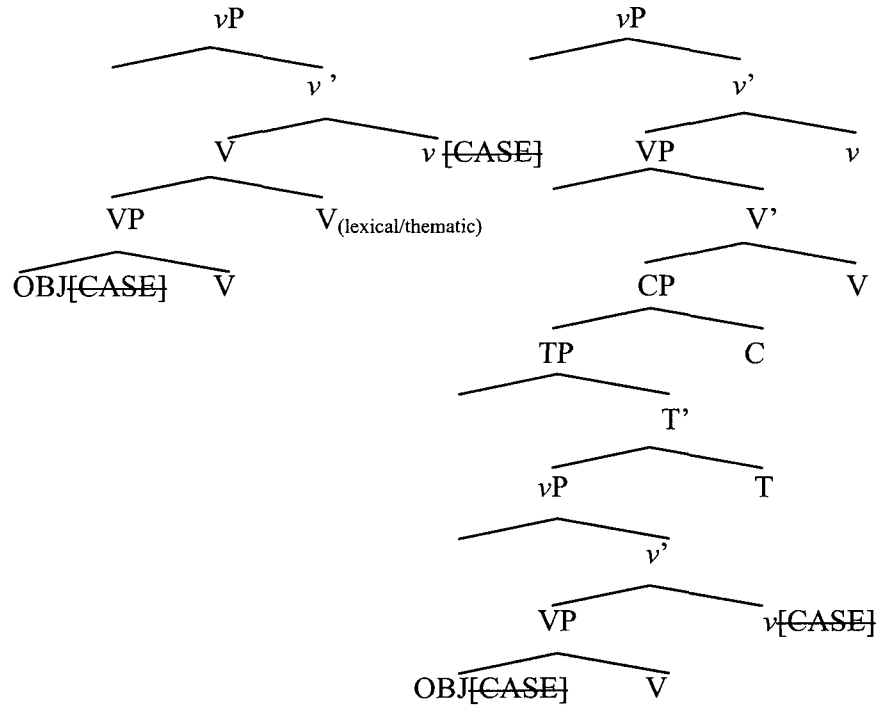
5.3 Analysis

To account for the distribution of adverbs in restructuring infinitives, I essentially adopt Wurmbrand's (2001) approach to restructuring infinitives, though I will depart from her proposals in some crucial respects. In particular, I propose that matrix modification is constrained by the thematic properties of verbs and that embedded modification is constrained by syntactic restrictions on adjunct insertion. I start with an introduction of relevant proposals in the literature.

5.3.1 Matrix modification

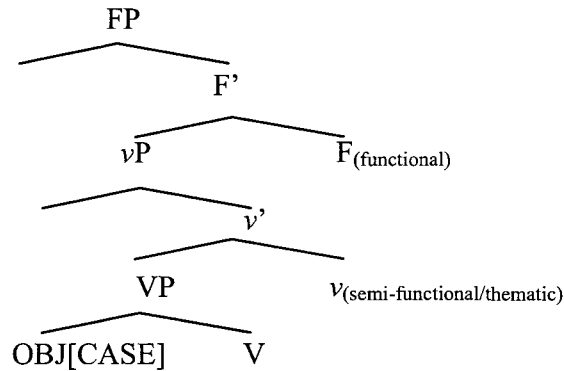
Wurmbrand (2001) argues that 'restructuring' is not a uniform phenomenon but that there are two types of restructuring configurations: lexical and functional restructuring. Lexical restructuring verbs are fully thematic verbs (Vs) (i.e. they assign theta roles) that take very small complements (bare VPs). Crucially, in this configuration, infinitival complements lack a Case-assigning head (v) (they also lack a subject). Embedded objects are thus Case-licensed by a higher functional head (v or T), yielding an (apparent) long-distance Case-licensing (see (20a)). If lexical verbs take larger complements such as CPs, TPs, and v Ps, the resulting configurations are non-restructuring configurations (though not necessarily full clausal complements), in which embedded objects are Case-licensed by v within the infinitive (see (20b)). This is shown below:

- (20) a. lexical restructuring b. non-restructuring



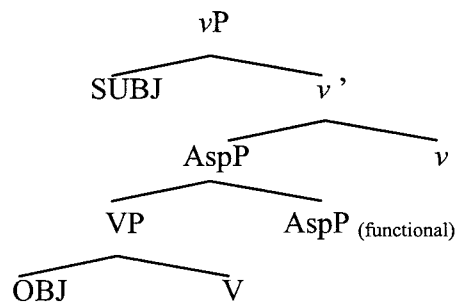
On the other hand, functional restructuring is a direct consequence of clausal architecture. Thus, functional heads (in the verbal domain) such as modals are functional restructuring verbs, which take infinitival complements (see (21)). The infinitival complement is the main predicate of the clause. Wurmbrand (2001) also proposes that functional restructuring verbs need to be classified into (purely) functional predicates, which do not establish thematic relationships with arguments (see FP in (21)), and semi-functional predicates, which behave like purely functional heads syntactically but take an external argument (i.e. they assign the subject theta-role) and may assign Case to an internal argument (see *vP* in (20a-b) and (21)).

(21) (semi)-functional restructuring



I assume this clausal architecture in this chapter. Furthermore, I assume that what is typically referred to as vP consists of several sub-projections. Specifically, I assume that, as shown in (22), there is a vP -layer which corresponds to the v -head introducing an external argument, and a lower Aspect projection (see Cinque 2006, MacDonald 2006, Pylkkänen 2002, 2008, and Travis 2010 for relevant discussion).⁹

(22) functional categories below vP

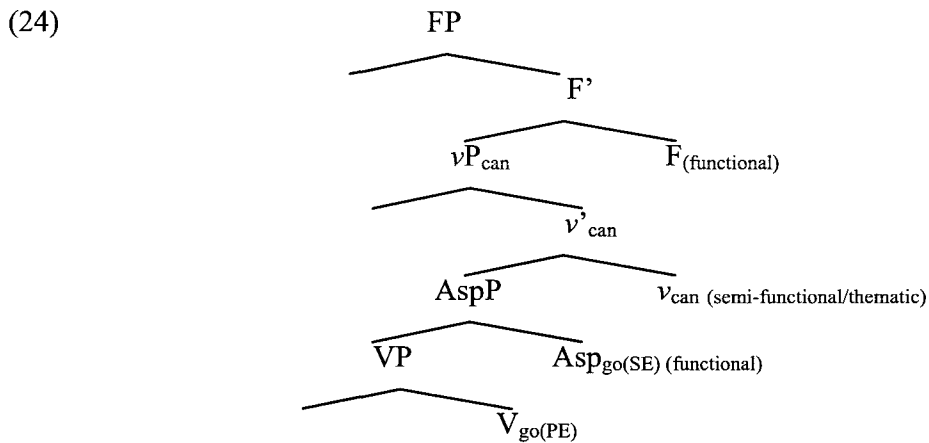


The inflectional domain and the verbal domain are thus structured as in (23).

⁹ v in (22) can be further decomposed into several heads (see Pylkkänen 2002, 2008 and Travis 2010, among others). However, I will not discuss this issue here.

- (23) functional restructuring verb (non-thematic) > semi-functional restructuring
verb (thematic) > aspectual functional head (non-thematic) > lexical verb (thematic)

In what follows, I will argue that PEs are thematic lexical verbs (cf. (20a)), SEs are purely functional lower aspect heads (cf. (22)), and the potential is a semi-functional *v* head (cf. (21)). This is shown in the following structure¹⁰



To begin with, I show that the three types of restructuring verbs occur in the hierarchical order: potential > V_{SE} > V_{PE} . As shown in (25), V_{SE} can appear higher than V_{PE} , but not vice versa.

- (25) a. John-ga hon-o/ga kai-ni-it-te-ko-re-ru. ($V_{SE} > V_{PE}$)

John-Nom book-Acc/Nom buy-NI-go-TE-come-can- Pres

‘John can go to buy books and come.’

¹⁰ I argued in chapter 2 that the potential morpheme selects another *vP* (see the discussion of the causative construction in chapter 2). I am omitting this *vP* complementation in this chapter just for the sake of exposition. What is needed here is an articulation of the *vP* layer (see Pyllkänen 2002, 2008 for discussion).

- b. *John-ga hon-o/ga kat-te-iki-ni-ko-re-ru. ($V_{PE} > V_{SE}$)
 John-Nom book-Acc/Nom buy-TE-go-NI-come-can-Pres
 ‘John can come to go to buy books and go (somewhere).’

Furthermore, as shown in (26) and (27), the potential can appear higher than both V_{PE} and V_{SE} , but not vice versa.

- (26) a. John-ga hon-o/ga kai-ni-ik-e-ru. (potential > V_{PE})
 John-Nom book-Acc/Nom buy-NI-go-can-Pres
 ‘John can go buy books.’
- b. *John-ga hon-o/ga ka-e-ni-ik-u. ($V_{PE} > \text{potential}$)
 John-Nom book-Acc/Nom buy-can-NI-go-Pres
 ‘lit. *John goes to can buy books.’
- (27) a. John-ga hon-o/ga kat-te-ik-e-ru. (potential > V_{SE})
 John-Nom book-Acc/Nom buy-TE-go-can-Pres
 ‘John can buy books and go (somewhere).’
- b. *John-ga hon-o/ga ka-e-te-ik-u. ($V_{SE} > \text{potential}$)
 John-Nom book-Acc/Nom buy-can-TE-go-Pres
 ‘lit. John can buy books and go (somewhere).’

The ordering restrictions among the potential verb, V_{PE} , and V_{SE} provide support for the assumption that these verbs are base-generated in different positions in the clausal architecture, as laid out in (23).

To account for the (im)possibility of modifying a restructuring predicate, I make the

following assumption: only thematic projections can be modified. This immediately accounts for why SEs, but not the potential and PEs, prohibit matrix modification (see Cardinaletti and Giusti 2001, Cinque 2006, Napoli 1981, Rochette 1998, 1990, Rosen 1989, 1990, and Tsujimura 1993, among others). This proposal is further supported by the fact that the V_{PE} can take arguments, while the V_{SE} cannot take arguments.

Let us first consider V_{SE} . In a non-restructuring sentence, the motion verb can take a locative argument. However, in a restructuring sentence, V_{SE} cannot take a locative argument (cf. Shibatani 2007):

- (28) Hanako-ga tosyokan-ni zassi-o/*ga kaesi-te ik-e-ru.
 Hanako-Nom library-to magazine-Acc/*Nom return-TE go-can-Pres
 ‘Hanako can return a magazine and go to the library.’

Tosyokan-ni ‘to the library’ is disallowed when the object is nominative. Based on this observation, I conclude that restructuring SE verbs do not take arguments. The following data show that the restructuring V_{SPE} can take a locative argument:

- (29) Hanako-ga tosyokan-ni zassi-o/ga kaesi-ni ik-e-ru.
 Hanako-Nom library-to magazine-Acc/Nom return-NI go-can-Pres
 ‘Hanako can go to the library to return a book.’

Here, the matrix verb can take a locative argument regardless of the Case of the embedded object.

To summarize, I have proposed above that (i) the potential morpheme is a

semi-functional verb, (ii) restructuring V_{SPE} are lexical restructuring verbs, and (iii) restructuring V_{SE} are functional aspectual heads below νP . The distinction between restructuring V_{SPE} and restructuring V_{SE} is supported by the fact that while the former can take arguments, the latter cannot take arguments.

5.3.2 Embedded modification and restructuring verbs

In this section, I provide an account of the distribution of embedded adverbs. The observation we have to account for is that while the potential morpheme and the restructuring SE verbs allow embedded modification, restructuring PE verbs do not. We cannot extend the account based on the lack of thematic properties to restructuring PEs I presented in the previous section because all the embedded verbs under consideration take a (nominative) object, which indicates that these verbs take arguments (i.e. they are lexical verbs). This means that these verbs do have thematic properties.

Following Wurmbrand (2001), I assume that restructuring PE verbs are *lexical restructuring verbs*. In other words, they are lexical verbs (Vs). However, contrary to Wurmbrand (2001), who claims that complements of lexical restructuring verbs must be bare VPs, I assume that complements of these verbs are headed by ν , which does not assign Case (see chapter 2 and Bhatt 2005 for relevant discussion).¹¹ I also assume, following what I have argued for in chapter 2, that ν works as a phase head only if it assigns Case. Given this assumption, the complement νPs in question are not phases. The core assumptions that I adopted in Takahashi (2011) for the ban on embedded modification in restructuring PEs are given in (30) and (31):

¹¹ Evidence for this claim will be provided later in this chapter.

(30) Lexical verbs (Vs) are phase heads.¹²

(31) Adjunction to XP is impossible if XP contains an unvalued Case-feature.¹³

These assumptions explain the ban on adjunction to complements of restructuring PEs in a principled way.

(30) is inspired by a proposal in Bobaljik and Wurmbrand (2005), who provide an analysis of what they dub anti-reconstruction effects, which are observed cross-linguistically (see below for discussion).¹⁴ While I am following their insights, I am interpreting them in terms of the phase theory advanced by Chomsky (2000, 2001, 2004, 2008) and propose that the lexical verbs under consideration are phase heads. Below I will provide a justification for the status of lexical verbs as phase heads, which will be part of a more general pattern that will be applied to other elements as well and on which lexical verbs do not always head phases; their phasehood in fact will depend on their syntactic context. The ultimate picture regarding phasehood here will thus be quite different from Bobaljik and Wurmbrand (2005). What is important for our purposes now is that the matrix VP in the construction currently under consideration is a phase. This in turn indicates that the vP complement of a lexical verb is a spell-out domain in the construction under consideration. Spell-out domains are domains across which Agree is blocked (see Chomsky 2000, 2001, 2004, 2008 for Agree). Thus, if there are any elements in a spell-out domain that are still not Case-licensed, they must move out of the domain to avoid a derivational crash (cf. Bošković 2007a). We then have a derivation like

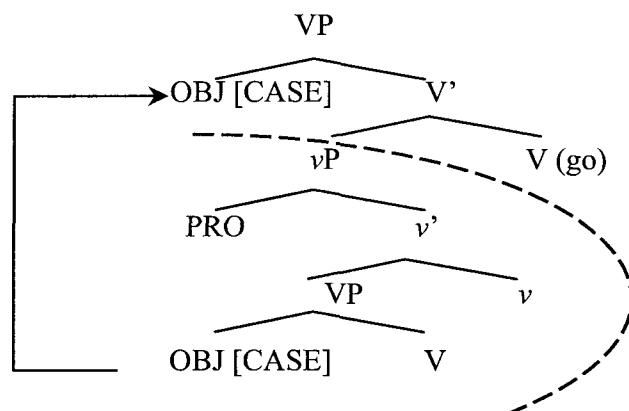
¹² This is a tentative proposal, which will be revised below. The analysis here is potentially problematic in light of the analysis of QR of *dake* 'only' proposed in chapter 2. If V is a phase head and QR of *dake* 'only' is phase-bound, QR of *dake* 'only' from an object position, which is a complement of a phase head, should be impossible (i.e. QR should be VP-bound here). I will come back to this point later and provide a more refined analysis, as well as justification for considering lexical verbs to be phase heads.

¹³ See footnote 19 for a possible deduction of (31).

¹⁴ Bobaljik and Wurmbrand (2005) call the relevant domains *agreement domains*.

the following for restructuring PEs:¹⁵

(32)

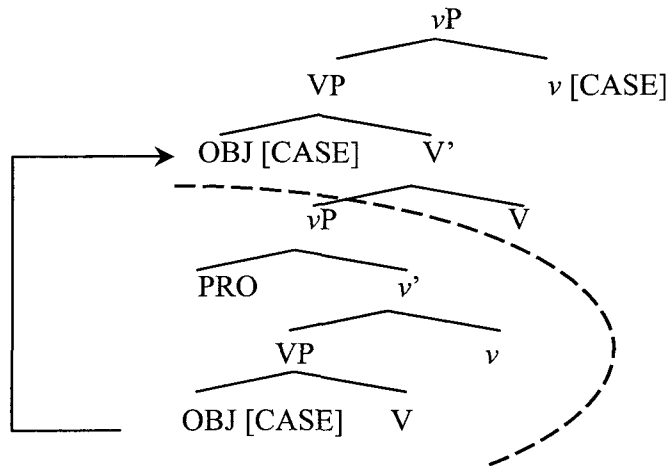


The vP -complement of the lexical verb in (32) is a spell-out domain. However, the object in the spell-out domain cannot be Case-licensed within the spell-out domain.¹⁶ The object then has to move to the Spec, VP to avoid a derivational crash at the point of the introduction of the higher V (see Bobaljik and Wurmbrand 2005 and Bošković 2007a for technical details). Once the matrix v is introduced into the derivation, the moved object is Case-valued in the Spec, VP:

¹⁵ I assume that the infinitival marker *-ni* is inserted at PF.

¹⁶ This is the crucial point of the derivation that distinguishes the derivation of restructuring PEs from that of transitive sentences. I will come back to this point below.

(33)



Here, the object in the Spec, VP is Case-valued by the matrix *v* and the derivation converges.¹⁷

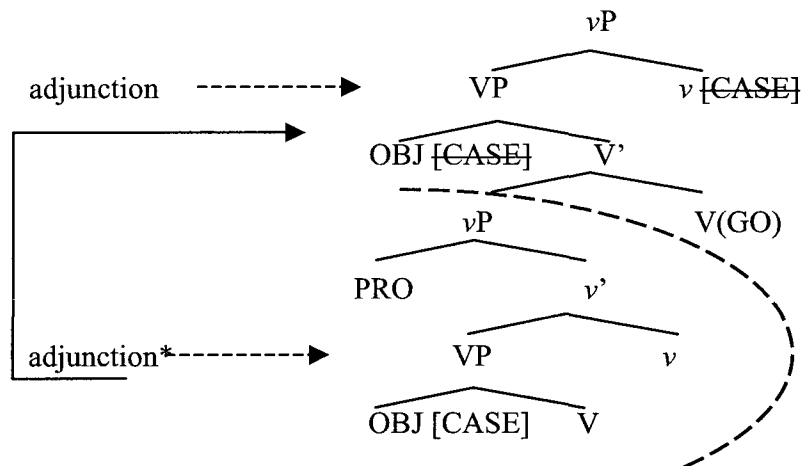
Turning now to (31), the goal of (31) is to force adjunction to take place late; in its effect, it is similar to Stepanov's (2001) conclusion that adjunction must be performed counter-cyclically. Stepanov's work appeared before the advent of the phase theory (Chomsky 2000, 2001, 2004, 2008). He concludes that adjunction must take place after all other syntactic operations are done (in other words, adjunction not only can be but must be late). Given the current assumption that each derivation proceeds in a phase-by-phase manner, it seems reasonable to restate his conclusion by forcing adjunction to take place counter-cyclically within a spell-out domain. However, it should be noted that the effect of obligatory late adjunction is implemented differently in Stepanov's (2001) work and the present analysis. While Stepanov (2001) derives obligatory late adjunction from a condition on phrase structure building, I am appealing

¹⁷ A caveat is in order. If the object is marked nominative, the Case of the object may come from T (see Koizumi 1994a, 1995, 1998, Nomura 2003, 2005a, 2005b, and Takezawa 1987, among others). Then, the object in Spec VP is Case-valued by T via Agree (see Nomura 2003, 2005a, 2005b for discussion). I will come back to this point below.

to Case considerations in the current analysis (see the discussion below).

Having laid out the crucial assumptions for my analysis, let us now see how they interact to exclude adjunction to complements of lexical motion verbs.¹⁸

(34)



The complement vP is a spell-out domain here because it is selected by a lexical verb, which is a phase head. Thus, at the point of the introduction of the matrix V , the object must move to Spec, VP . I assume that conditions are evaluated only based on the elements in a spell-out domain. Note that the vP complement, which is a spell-out domain, contains a ‘trivial’ chain, i.e. only one copy of the moving object represented as OBJ [CASE] in the complement position of V . Then, adjunction to this embedded vP is impossible due to (31).¹⁹

¹⁸ I am assuming here that adverbs are VP -adjoined just for the sake of the exposition (another option is vP adjunction).

¹⁹ In Takahashi (2010b), I suggested a deduction of the effect of the proposal in (31) building on the proposal made in Hornstein (2009) and Hornstein and Nunes (2008) that adjunction lacks labeling. I assumed with Hornstein (2009) that (a) adjunction lacks labeling; (b) movement dependencies are computed in terms of paths (projections that dominate the moving element). Given this, the cyclic adjunct insertion derivation, where the adjunct is adjoined before object movement, is prohibited for the case at hand: as a result of the adjunction, VP lacks a label, which makes object movement dependency illegitimate (I assumed that adjuncts are VP -adjoined). The other derivation to be excluded involves adjunct

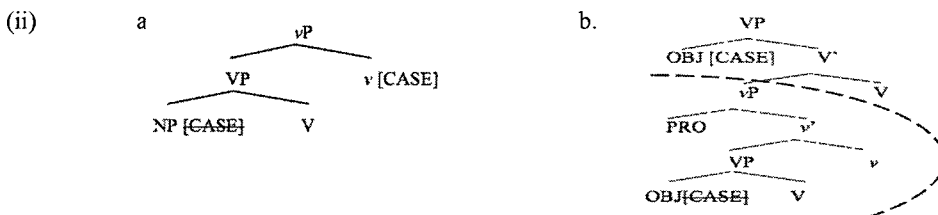
The analysis proposed here predicts that matrix modification should be possible in restructuring PEs because the embedded object is Case-licensed in the matrix clause. When this higher VP is spelled-out, the ‘trivial’ chain is now the higher copy of the object which is Case-valued. Recall that under the current analysis, adjuncts are inserted counter-cyclically after Case-valuation. Adjunction is then predicted to be allowed. Note also that counter-cyclic adjunction to the embedded *v*P is impossible, since this *v*P is already spelled-out when the object is Case-valued.

A question remains as to how the derivations converge under the proposed analysis given that the spell-out domain contains a copy of the moving element that is not Case-valued. I assume, essentially following Nunes (2004), that unvalued features of lower copies of the object are deleted at the point of the transfer to the interfaces.²⁰ My intention here is to implement Nunes’s (2004) formal feature (FF) deletion under the model that assumes Multiple Spell-out, which Nunes does not assume. Nunes (2004) assumes that the FF-deletion process takes place in the phonological component to avoid

insertion *after* the object movement. The derivation can’t be excluded by the lack of labeling in adjunction because the path of object movement can be computed before adjunct insertion. To block the derivation, I adopted a modified version of Chomsky’s (2000) definition of the cycle given in (i):

(i) Start a new cycle Z when a projection of Z is created which does not directly involve X, which is a cyclic domain.

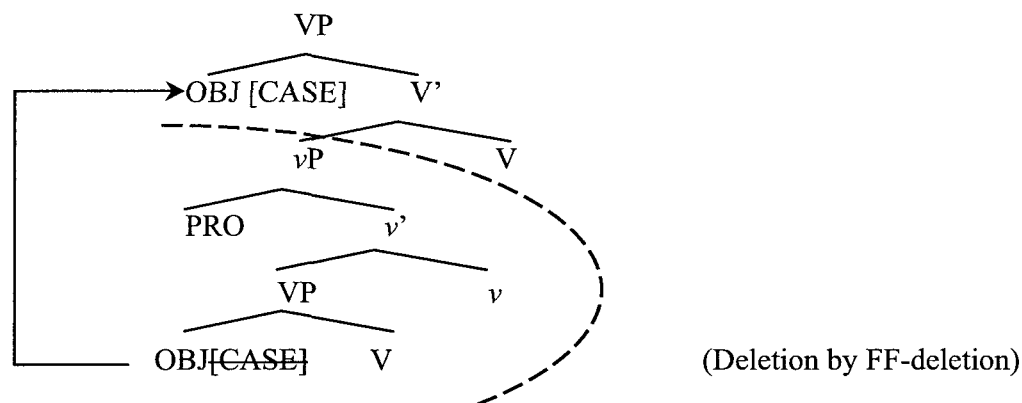
While this definition of the cycle allows VP adjunction in simple transitive structures like (iia), to be discussed in more detail later (it disallows adjunction to the lower VP in restructuring PE constructions like (iib) (note that the matrix V’ does not directly involve the embedded VP)



²⁰ I thus depart from Chomsky (2001) and assume that lower copies of a chain in a spell-out domain can be deleted independently of feature checking on the top of the chain. In other words, unlike Chomsky’s (2001) system, in a non-trivial chain X_1, X_2, X_3 , deletion of a feature in X_1 does not affect the feature in the lower copies.

PF crash. Slightly departing from his original proposal, I assume that unvalued features of lower copies in spell-out domains are always deleted by FF-deletion at the point of transfer. This is shown below:

(35)



The unvalued Case-feature in (35) disappears before it reaches the LF and PF interfaces. The derivation then does not crash.

However, we have to make sure that FF-deletion takes place only if the unvalued features are those in the copy left behind by movement. In other words, if FF deletion were always possible, the object in the structure under consideration may not have to move out of the spell-out domain. I assume, essentially following Bošković (2007b), that the computational component looks at the whole phase (i.e. VP phase in (35)) at the point of transfer and propose that the availability of FF-deletion in a spell-out domain can be determined on the basis of the elements at phase edges. Once the moving element in the phase edge and the copy of the moving element in a spell-out domain are detected, the unvalued feature of the lower copy is deleted at the point of transfer by FF deletion. The derivation then does not crash. In (35), the unvalued Case-feature of the object in the

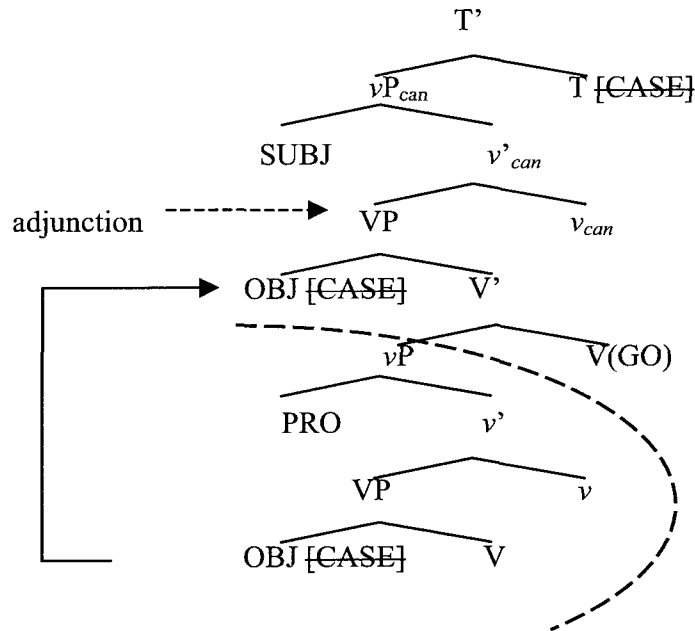
spell-out domain is deleted because there is a copy of the object in the VP edge. An important point in the above discussion is that the unvalued feature of the lower copy in the spell-out domain is not deleted before transfer. As a result, the adjunction operation under consideration (i.e. insertion of adverbs), which is performed in the syntax counter-cyclically, but crucially before transfer to the interfaces, is blocked by (31).

Let us now consider how the current analysis captures matrix modification in restructuring PEs. The relevant data are repeated here:

- (36) Hanako-wa zitchensya-de robusutaa-ga tabe-ni ik-e-ru.
 Hanako-Top bike-by lobster-Nom eat-NI go-can-Pres
 ‘Hanako can go to eat a lobster by bike.’

Here the adverb *zitchensya-de* ‘by bike’ is intended to modify the matrix verb *ik* ‘go’. The object is marked nominative. I assume with Koizumi 1994a, 1995, 1998, Nomura 2003, 2005a,b, and Takezawa 1987, among others, that the nominative object is then Case-licensed by T. Specifically, I assume with Nomura 2003, 2005a,b that the nominative object is Case-valued by T via Agree. Here, the moved object in Spec, VP is then Case-valued by the matrix T. Furthermore, as discussed extensively in chapter 2 and chapter 3, I assume that *v* is a phase head only if it assigns Case. Consider now the following step of the derivation:

(37)



Here, the embedded object moves to the matrix Spec, VP once the motion verb is merged. The matrix v_{can} is then merged but crucially, this v_{can} does not assign Case (see Ura 1996, 1999, 2000). Given the second assumption that v is a phase head only if it assigns Case, the matrix vP_{can} is not a phase. This in turn indicates that there is no spell-out domain between the object and T. The nominative object can then be Case-valued by T via Agree. Adjunction is then predicted to be allowed. Nothing changes if the nominative object moves to Spec, TP (as in Koizumi 1994a, 1995, 1998, and Nomura 2003, 2005a.b) because the object can move *after* Case-valuation. This is different from the case of the embedded vP in (35) where the object must move *before* Case-valuation. The crucial point in the derivation of the embedded vP in (35) is that there is a phase before the introduction of the matrix Case-licenser.

At this point, it is worth discussing some examples that are potentially problematic for the analysis I am pursuing. Here I provide a modification of one aspect of the analysis

I provided in Takahashi (2011) introduced above. First, the proposed analysis may incorrectly predict that embedded modification should be impossible in restructuring SEs and the potential construction. The relevant data are repeated below:

(38) Taro-ga robusutaa-ga hasi-de tabe-rare-ru. (**potential**)

Taro-Nom lobster-Nom chopsticks-with eat-can-Pres

‘Taro can eat a lobster with chopsticks.’

(39) Hanako-wa robusutaa-ga hasi-de tabe-te ik-e-ru. (**SE**)

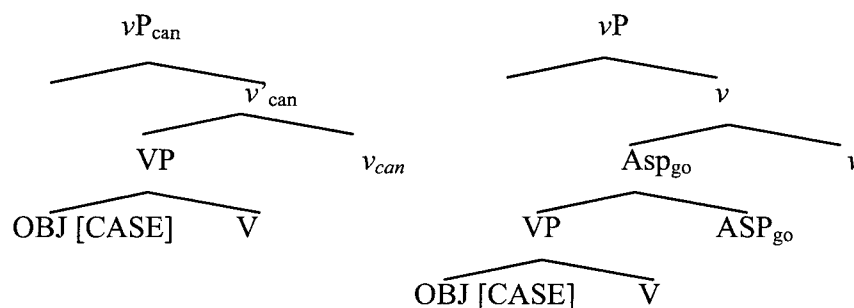
Hanako-Top lobster-Nom chopsticks-with eat-TE go-can-Pres

‘Hanako can go to eat a lobster with chopsticks.’

In both of the above examples, the adverbs modify the embedded verbs. Consider the following derivation for the potential construction and restructuring SEs (recall that restructuring V_{SE} are located below the potential verb):

(40) a. potential construction

b. restructuring SE



If the VP were a phase in (40), the object should have to move out of the VP for Case. As

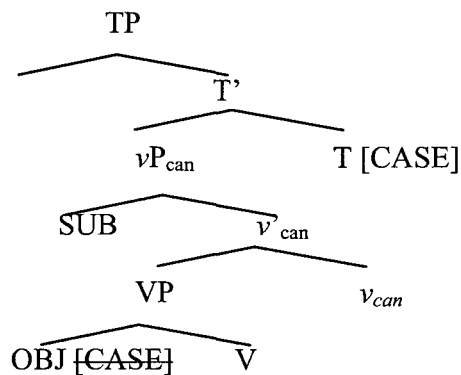
a result, adjunction to VP (and adverbial modification) should be impossible (due to the unvalued Case feature of the object copy within VP), contrary to fact.²¹

In a similar vein, the following example including *dake* and a potential morpheme is potentially problematic:

- (41) John-ga migime-dake-ga tumur-e-ru.
 John-Nom right.eyel-only-Nom close-can-Pres
 ‘John can close only his right eye.’ (only > can, can > only)
 ‘It is only his right eye that John can close.’ (only > can)
 ‘John can wink his right eye.’ (can > only)

Here the nominative object can take scope over the potential morpheme. The derivation of this sentence is represented below:

- (42) potential construction²²



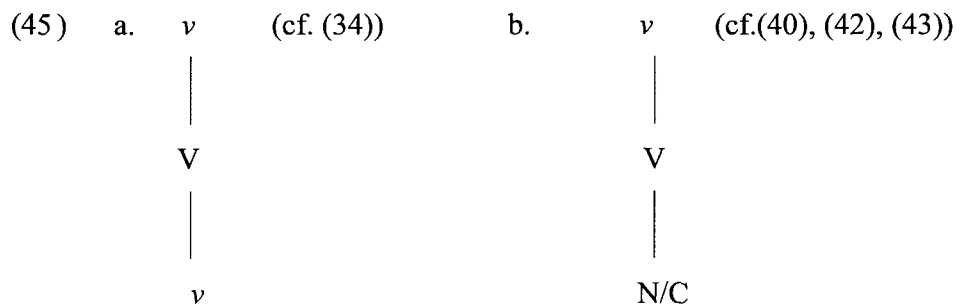
²¹ The same question arises with respect to the lower VPs in (32), (33) and (34); however, it was not really relevant there, hence I have ignored it earlier. I will return to this issue below.

²² Again, I am omitting in this chapter the νP complement of the potential morpheme, which is the landing site of QR when *dake* ‘only’ takes scope under the potential morpheme. See chapter 2.

Notice now that the potential construction in (40a)/(42), the restructuring SE in (40b), and the ECM construction in (43), on one hand, and the lexical restructuring construction we have been discussing, on the other hand, are different in their structures. In the cases where adjunction is impossible ((cf. (34)), V is “sandwiched” by two *vs*. In other words, V selects a *v*(P) and is itself selected by *v*(P). On the other hand, in the case of the restructuring SEs (cf. (40b), the potential construction (cf. (40a)), and the ECM construction (43), V is not “sandwiched” by *vs*. Here, V does not take a *v*P complement even though the VP is selected by *v*. Based on this difference, instead of the proposal in (30), I propose the following:

- (44) Merger of a higher *v* forces transfer of a *v*P complement of a lexical verb.²⁴

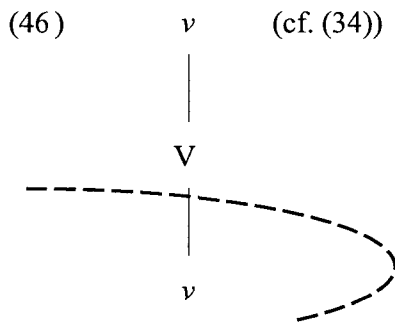
To see the reasoning behind the proposal, let us consider the following structures:



In (45a), which represents the configuration of lexical restructuring, V is sandwiched by *vs*. On the other hand, in (45b), which represents the structure of the potential

²⁴ This analysis, as well as the reasoning behind it to be discussed below, was suggested me by Željko Bošković (p.c.).

construction, restructuring SEs, and the ECM construction, V is not sandwiched by *vs*. I propose that (45a) is an ‘offending’ configuration which forces transfer of the lower *v*P. Let me spell out the intuition behind the proposal. Suppose that V undergoes feature checking with *v* (after all, V is assumed to move to *v*). But in (45a), there are two *vs* with which V can establish a checking relation, which I suggest is an ambiguity that cannot be tolerated. I suggest that this offending structure causes transfer of the lower *v*P, leaving V in the same spell out domain with only one *v* (the intuition here is that the transfer “breaks” the ambiguous configuration). This point is described below:



As soon as the higher *v* is introduced into the derivation, the lower *v*P is spelled out to avoid the ambiguous structure. This captures the desired effect that matrix VPs in lexical restructuring infinitives are phases (*v*P-complements of Vs are transferred because of the ambiguous configuration), as discussed above. However, the transfer does not always take place with lexical Vs. Only *v*P complements of Vs are transferred because of the ambiguous configuration described in (45a).²⁵ Thus, the complement of V in (45b) is not transferred because there is no ambiguous configuration. I emphasize here that this way of creating a VP phase provides another case where phases are determined

²⁵ The effect in question may in fact be more general, excluding X-Y-X configuration quite generally even when there is no feature checking.

contextually. In fact, it is the clearest example of contextual emergence of phasehood discussed in this dissertation. The phasehood of VP crucially depends on the context in which the VP is found.

We are now ready to analyze the potentially problematic cases I have laid out. Turning back to the potential construction (cf. (40a); (42)) and the restructuring SEs (cf. (40b)), the NP complement of the V is not transferred and the VP does not work as a phase here; there is no ambiguous configuration (cf. (45b)). Then, the object in (40) does not move out for Case. The object can then be Case-valued *in situ* via Agree. Embedded modification is then predicted to be possible. In the same vein, QR of *dake* ‘only’ (42) is not VP-bound because the VP is not a phase. Hence *dake* ‘only’ can take scope over the potential morpheme. The matrix VP in the ECM example in (43) also does not involve the ambiguous configuration (the matrix verb selects CP, hence the V is not sandwiched by *vs*). In other words, while complements of ECM verbs are CPs, those of the restructuring PEs and *wasure* ‘forget’ (which will be discussed below) are *v*Ps. Furthermore, the lowest VP in (43) does not involve an ambiguous configuration either (V selects *John*). We thus correctly capture the fact that embedded modification is possible here. This difference in the size of the infinitival complement is related to the definition of spell-out domains here. In other words, complements of lexical verbs must be ‘small enough’ (i.e. *v*P, not CP/TP) to create an ambiguous configuration.²⁶

Let us finally consider a simple transitive sentence:

(47) John ate sushi with chopsticks.

²⁶ Note also that the lower VPs in (32), (33) and (34) are thus non-phasal because they dominate nominal complements.

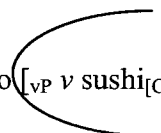
Here, the object is Case-valued by v , and adjunction is apparently allowed, given that the adjunct *with chopsticks* does not cause ungrammaticality. What is important here is that VP is a spell-out domain given that vP is a phase (i.e. VP is not a phase). The question is then why VP adjunction is possible here under the proposals made in this chapter. Consider the following derivation:

(48) John [v , v -atc_i [_{VP} t_i sushi_[CASE] [with chopsticks]]].

Here, the complement of the VP is not a transferred (i.e. VP is not a phase) because there is no ambiguous configuration from (45a) as in the case of the nominative object construction. Recall, however, that vP is a phase here. As noted above, I assume that vP constitutes a derivational phase only if v assigns Case. This in turn indicates that spell-out domains, which are complements of phase heads, emerge only at the point of Case-valuation. At the point when the object in the above example is Case-valued in its base-generated position, the VP that contains it is then still not a spell-out domain. Adjunction thus takes place after Case-valuation, but crucially before transfer.

On the other hand, in the case where the adjunction is banned (45a), hence adverbial modification is impossible, the ambiguous configuration emerges at the point of the introduction of the matrix v . Consider the following derivation including a restructuring PE:²⁷

(49) [v [_{VP} go [_{VP} v sushi_[CASE] [with chopsticks]]]].



²⁷ I am adopting the head initial structure and English words for the sake of exposition.

Assuming that the derivation proceeds in a bottom-to-top manner, the embedded ν P becomes a transfer domain (due to the existence of an offending ambiguous configuration) at the point of the merger of the matrix ν . Thus, the Case-feature of the embedded object necessarily remains unvalued if the object does not move out. The object then moves out to avoid a derivational crash, which as discussed above, blocks adjunction modification.

To summarize, I have argued in this section that the ban on adjunction to complements of certain restructuring verbs can be explained in terms of spell-out domains and the timing of adjunction within spell-out domains. In particular, I have suggested that VPs work as phases only when they are “sandwiched” by ν s. Note that this way of creating phases crucially depends on the context where VPs are found, hence, provides another case of contextual emergence of phases. In the next section, I explore further ramifications of the proposed analysis and show that other adjunction operations (adjective insertion, quantifier raising) also obey the proposed constraint.

5.4 Further extensions

I have so far argued that there is a ban on adjunction to complements of lexical restructuring motion verbs and that the ban follows from the two assumptions, where (50) has a more general source (see the previous section):

(50) Merger of a higher ν forces transfer of the ν P complement of a lexical verb.

(51) XP cannot be a target of adjunction if it has an unvalued Case-feature.

If these assumptions are correct, we would expect to observe a similar ban on adjunction in other constructions. In this section, I argue that this is indeed the case. The discussion concerns infinitival complements of *wasure* ‘forget’ and Japanese light verb constructions. The former gives us a case of QR and the latter gives us a case of adjective insertion.

5.4.1. Infinitives with *wasure* ‘forget’: The Case of QR

In this section I discuss infinitives with *wasure* ‘forget’ and demonstrate that the ban on adjunction is observed in these restructuring infinitives. *Wasure*-infinitives show the anti-reconstruction effect, which motivated the analysis in terms of agreement domains in Bobaljik and Wurmbrand (2005) briefly noted above. A relevant example is given in (52):

(52) Taro-wa ringo-dake-o tabe-wasure-ta.

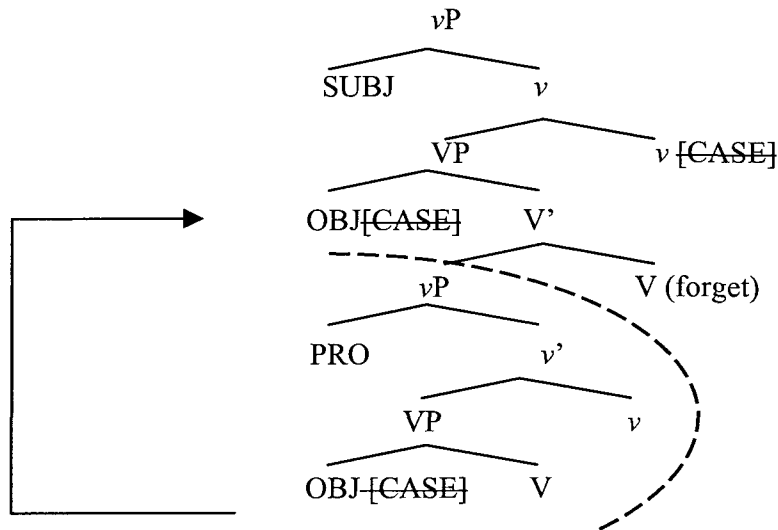
Taro-Top apple-only-Acc eat-forget-Past

‘Taro forgot to eat only apples.’ (only > forget, *forget > only)

(Koizumi 1995: 56)

(52) shows that the embedded object must take scope over the matrix predicate (see Koizumi 1995 and Yumoto 2004). Under the current proposals, the example has the following derivation:

(53)



The complement of *wasure* ‘forget’ is a spell-out domain hence the object has to move to the matrix VP. The moved object is Case-licensed by the matrix *v* after movement. This object necessarily takes scope over *wasure* ‘forget’ because it is located above *wasure* ‘forget’ when the former is in the domain of *wasure* ‘forget’. The analysis predicts that the ban on adjunction to complements of *wasure* should be at work. This is indeed the case. As observed in Tomioka (2006) and Yumoto (2004), embedded modification is banned in infinitival complements of verbs such as *wasure* ‘forget’. Consider the following context and examples cited from Tomioka (2006):

(54) Context: Taro planned to do a number of things during his first trip to Montreal.

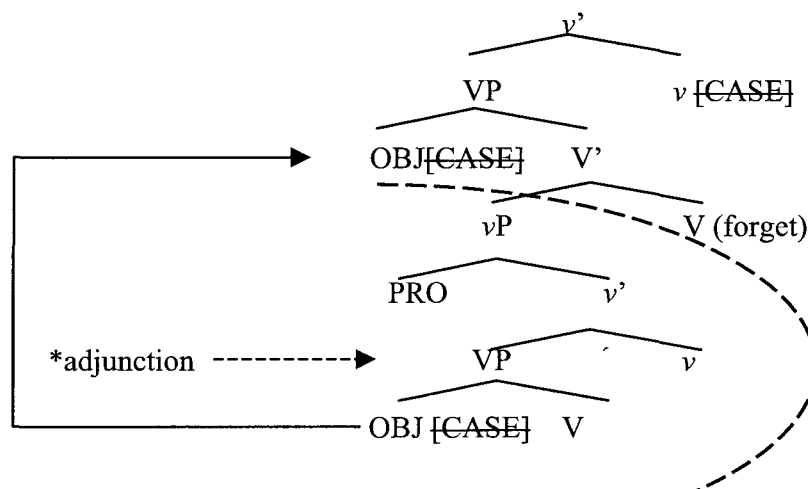
One of the things he planned was taking a picture at the museum. When he returned to Kingston, he realized that he had forgotten to go to the museum. In other words, he did not go to the museum.

- a. Taro-wa bizyutukan-de syasin-o toru-no-o wasure-ta.
 Taro-Top museum-in picture-Acc take-that-Acc forget-Past
 ‘Taro forgot to take a picture in the museum.’
- b. #Taro-wa bizyutukan-de syasin-o tori-wasure-ta.
 Taro-Top museum-in picture-Acc take-forget-Past
 ‘Taro forgot to take a picture in the museum.’
 (The forgetting event took place in the museum.)

What is important in the above context is the fact that Taro didn't go to the museum. While embedded modification (modification of the event of taking pictures) is consistent with the context, matrix modification (modification of the event of forgetting) is not. The contrast in (54) shows that while the non-restructuring example, where the embedded object is Case-valued within the complement, is allowed (cf.(54a)), the restructuring sentence is disallowed (cf. (54a)).

The data receive a straightforward account under the analysis I have proposed:

(55)



Here, the embedded object moves to the matrix Spec, VP. As the copy of the moved element is not Case-licensed, adjunction to the embedded VP is impossible.²⁸

What is particularly interesting here is the fact that even non-Case marked elements show the anti-reconstruction effect (cf. Saito 2000; Saito and Hoshi 1998):

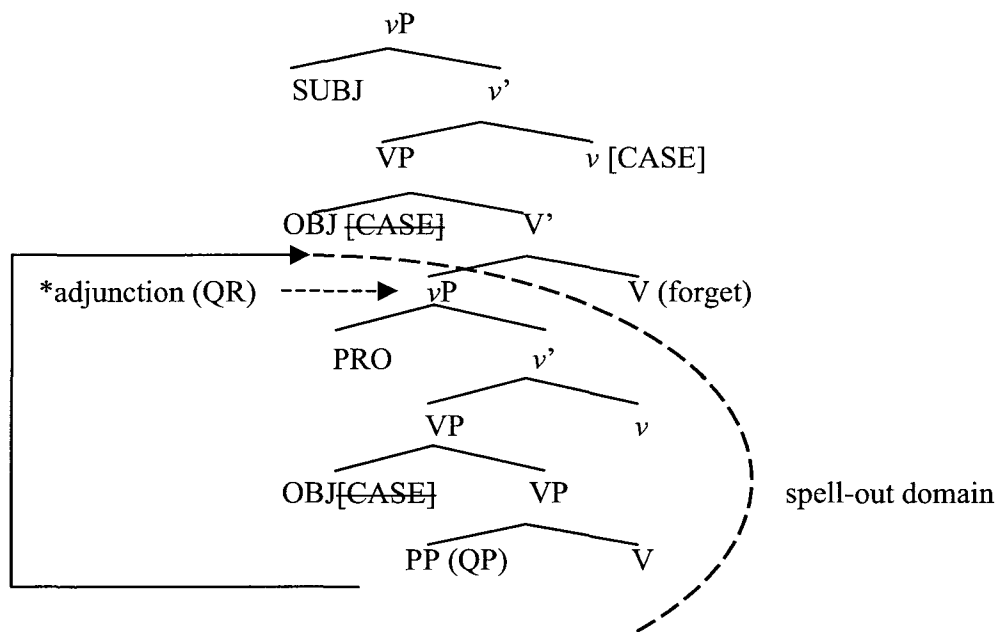
- (56) Taroo-wa hon-o Mary-dake-kara kari-wasure-ta.
 Taro-Top book-Acc Mary-only-from borrow-forget-Past
 ‘Taro forgot to borrow books only from Mary.’ (only > forget, *forget > only)

(56) involves a PP argument, which does not receive Case from the matrix *v*. *Dake* ‘only’ contained in the PP must take scope over *wasure* ‘forget’. As extensively discussed in chapter 2, *dake* ‘only’ undergoes QR and QR of *dake* ‘only’ must target a propositional node (i.e. *v*P). Assuming that QR is a syntactic adjunction operation (May 1985), we now have an account of (56). Consider the following derivation: ²⁹

²⁸ I will discuss Tomioka’s (2006) analysis of the data in section 5.1.

²⁹ I assume with Bobaljik (1995) and Saito (2005), among others, a model where ‘overt’ operations and ‘covert’ operations takes place within a single cycle. I also assume that QR is a movement operation where the tail of the chain is pronounced (Fox and Nissenbaum 1999). See chapter 2.

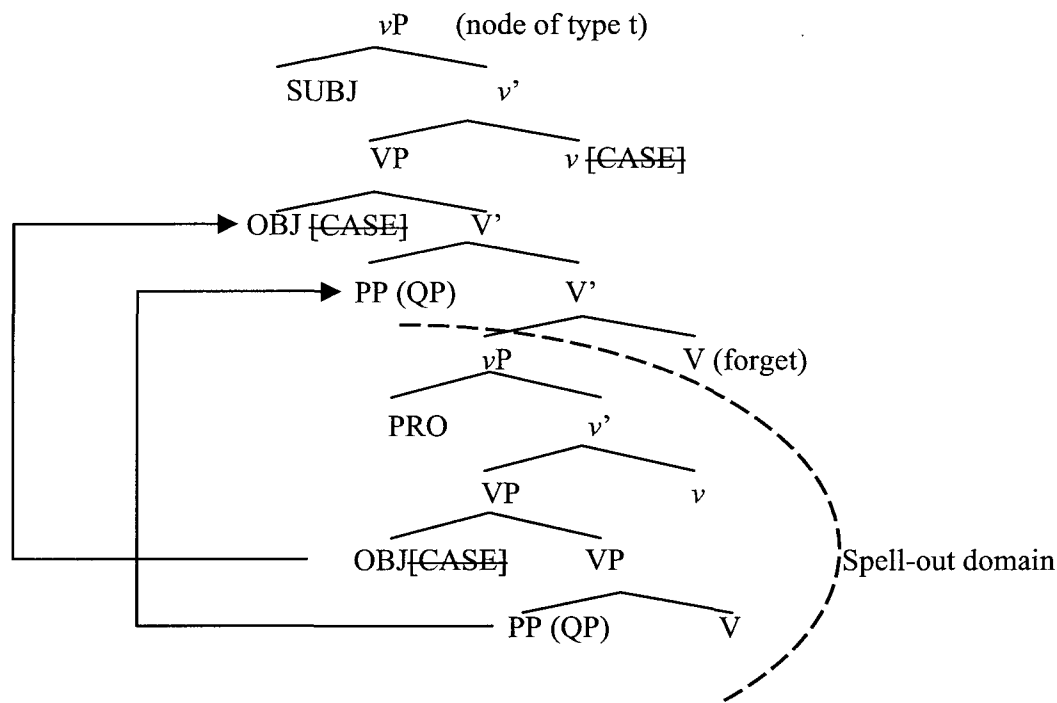
(57)



(57) shows that the embedded vP , which is a spell-out domain, contains a copy of the object with an unvalued Case-feature. The condition on adjunction I have proposed predicts that adjunction to this vP should be impossible even though the vP is a propositional node (see also chapter 2).³⁰ Then, the quantifier cannot adjoin to this vP . Given that the object needs Case and *dake* ‘only’ must undergo QR, the only possible derivation is the one in which the PP, as well as the object, move to the matrix VP via scrambling, the quantifier in the PP then undergoing QR (adjunction) to the matrix vP :

³⁰ Evidence for this claim will be provided later in this section.

(58)



After scrambling of the PP to the matrix VP, the quantifier in the PP undergoes QR to the matrix vP , which is a node of type t .³¹ We thus capture the anti-reconstruction effect with PPs. It is interesting to note that Koizumi (1995) briefly considers the possibility of QR in the context of restructuring infinitives and states the following: “what we have to say in the case of the Control construction ... is that QR may not be *too short*. Current syntactic theories, including GB theory, do not have any theoretical device to cope with such a situation (Koizumi 1995:81; the emphasis by the author).”³² What I have tried to do here is to capture the effect in question.

One might wonder if this anti-reconstruction effect with PPs could follow from the assumption that complements lack positions where QR can potentially adjoin to (e.g. vP)

³¹ Note that the VP-to- vP adjunction (QR) under consideration is allowed under the definition of anti-locality introduced in chapter 4.

³² Recall, however, that, as discussed in chapter 3, there is a ban on movement that is too short, often referred to as anti-locality (see Abels 2003, Bošković 1994, Grohmann 2000, and Saito and Murasugi 1999, among many others).

(cf. Tomioka 2006, Wurmbrand 2001). Thus, if complements of lexical verbs lack a *vP* projection, quantifiers in the complements must adjoin to matrix *vPs*, which yields the anti-reconstruction effect. Considering examples involving causatives circumvents this possibility. Let me briefly discuss the causative construction and the distribution of binders of *zibun* ‘self’ in Japanese. We saw in chapter 2, building on Kuno (1973) and Kuroda (1965), that the causative construction is bi-clausal. Consider first the following causative sentence:

- (59) Taro_o-ga Hanako_i-ni hon-o sute-sase-ta.
 Taro-Nom Hanako-Dat book-Acc discard-cause-Past
 ‘Taro made Hanako discard a book.’

Here, the complement of *–sase* ‘cause’ is a clause, which can be shown by the following data (see Kuno 1973 and Kuroda 1965, among others).

- (60) Taro_o_j-ga Hanako_i-ni zibun_{j/i}-no hon-o sute-sase-ta.
 Taro_j-Nom Hanako_i-Dat self_{j/i}-Gen book-Acc discard-cause-Past
 ‘Taro_j made Hanako_i discard his/her book.’

Here, the reflexive *zibun* ‘self’ can refer to either *Hanako* or *Taro_o*. Given the standard assumption that the antecedent of *zibun* ‘self’ must be the subject of a clause, the above data shows that there are two clauses here: the matrix clause and the embedded clause. Following Harley (2008), Murasugi and Hashimoto (2004) and Saito (2006a), I assume that complement clauses of causative constructions are *vPs* and subjects in the relevant

sense are elements in Spec, ν P. Consider now the following example:

- (61) Sensei_j-wa gakusei_i-ni sono-nyuusu-o zibun_{j/i}-no zimoto-dake-e
 teacher_j-Top student_i-Dat that-news-Acc self_{j/i}-Gen home-only-to
 hookoku-sase-wasure-ta.
 report-cause-forget-Past
 ‘The teacher_j forgot to make the student_i report the news only to his_{j/i} home.’
 (only > forget, *forget > only)
 (only > forget: it is only to his home that the teacher forgot to make the student
 report the news.)
 (*forget > only: the teacher forgot to make the student to report the news to his
 home but not others (i.e. it was possible that the student reported the news to his
 home and other places..))

In (61), *wasure* ‘forget’ takes a causative construction, which involves a ν P complement. This is shown by the fact that the dative causee can be the subject of *zibun* ‘self’. Importantly, we still observe the anti-reconstruction effect with the PP, *dake* ‘only’ obligatorily taking scope over *wasure* ‘forget’. If the anti-reconstruction effect on QR in (56) were to be obtained by assuming a lack of a proper adjoining position (i.e. ν P), *dake* ‘only’ should still be able to take scope under *wasure* ‘forget’. (61) thus gives further credence to the domain-based analysis entertained here.³³

Let us now consider how the proposals in this chapter capture the above facts. The crucial assumptions are summarized here again:

³³ The data also provide independent evidence that complements of lexical restructuring verbs can be larger than bare VPs, as assumed in this chapter. See section 5.6.1 for similar observations.

- (62) Merger of a higher ν forces transfer of the ν P complement of a lexical verb.
- (63) XP cannot be a target of adjunction if it has an unvalued Case-feature.
- (64) ν P constitutes a derivational phase only if ν assigns Case.

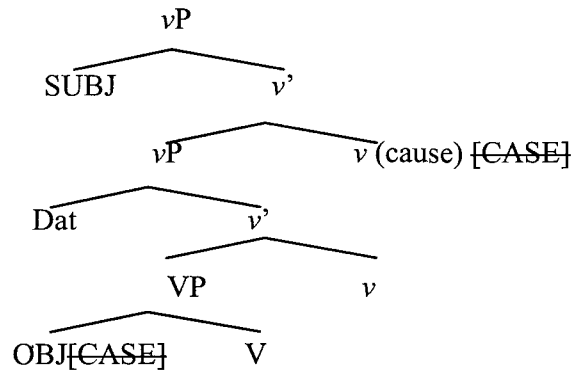
Let us first consider how Case-marking proceeds in the causative construction:

- (65) a. John-ga eigo-?o/ga wakar-u.
 John-Nom English-Acc/Nom know-Pres
 ‘John understands English.’
- b. Mary-ga John-ni eigo-o/*ga wakar-ase-ru.
 Mary-Nom John-Dat English-Acc/Nom know-cause-Pres
 ‘Mary makes John understand English.’ (chapter 2)

In (65a), it is only marginally acceptable to have accusative Case on the object. However, in (65b), where the causative morpheme selects *wakar* ‘understand’, the accusative Case is fully acceptable while nominative marking is impossible. This indicates that the accusative Case of the object in (65a) comes from *-(s)ase* ‘cause’, rather than *wakar* ‘understand’. This contrast suggests the embedded accusative objects in causative constructions are Case-valued by matrix predicates.³⁴ This point is quite important because it shows that the verbal projection of the complement of the causative morpheme does not constitute a phase, given (64). We can then assume the following derivation for the causative construction. I assume with Harley (2008), among others, that the causative morpheme *-sase* ‘cause’ is an exponent of the matrix ν , which selects ν P:

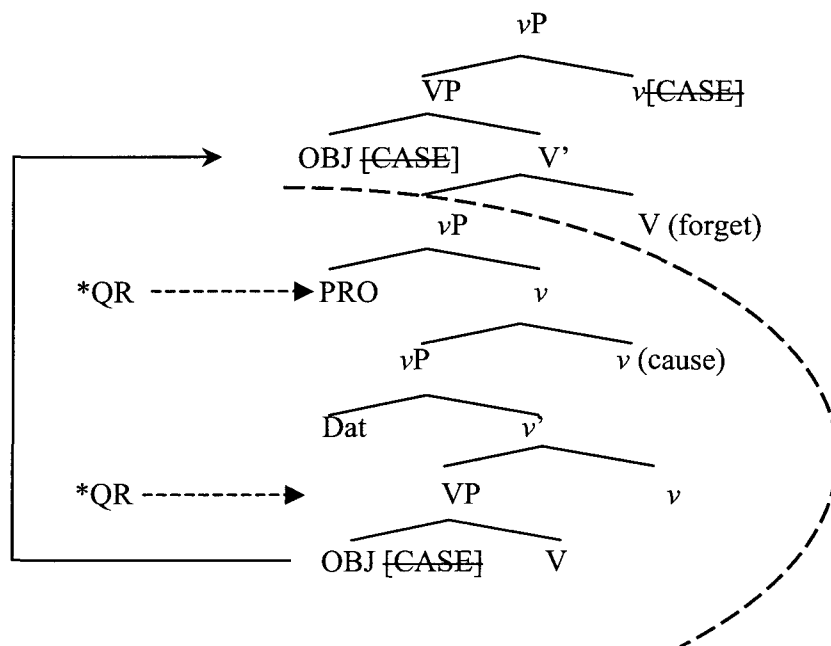
³⁴ I assume with Koizumi (1995) that the dative causer is a PP.

(66)



Here, the Case of the embedded object is licensed by the matrix v . This object does not have to move for Case because there is no relevant spell-out domain before Case-valuation of the object. Now, consider the following derivation, which corresponds to (61):

(67)



The complement of *wasure* ‘forget’ here is a causative sentence. As *wasure* ‘forget’ is sandwiched by two *vs*, the VP headed by *wasure* ‘forget’ is a phase. As a result, the embedded object must move out of this domain for Case. As the spell-out domain contains an unvalued Case-feature, adjunction (i.e. QR) to this *vP* node is predicted to be impossible. We thus capture the anti-reconstruction effect in the causative construction.

To conclude, I have argued in this section that infinitives with *wasure* ‘forget’, which show the anti-reconstruction effect, provide further evidence for the analysis of the ban on adjunction proposed in this chapter. In particular, it was shown that quantifier raising, as well as adverb insertion, obey the adjunction constraint.

5.4.2 Japanese light verb constructions as lexical restructuring: A preliminary analysis

In this section I briefly discuss the Japanese light verb construction (henceforth LVC) and provide a further argument for the analysis I proposed in this chapter. Examples of LVCs are given below (see Grimshaw and Mester 1988, Saito 2000, Saito and Hoshi 2000, and Terada 1990, among many others):

- (68) a. John-wa [_{VNP} zaisan-no bossyuu]-o si-ta.
 John-Top property-Gen confiscation-Acc do-Past
- b. ??John-wa zaisan-o [bossyuu]-o si-ta.
 John-Top property-Acc confiscation-Acc do-Past
- ‘lit. John did confiscation of property.’

In (68a), *zaisan* ‘property’ is theta-marked by the verbal noun *bossyuu* ‘confiscation’ and is located in the projection of the verbal noun (VNP) *bossyuu* ‘confiscation’, as shown by the fact that *zaisan* ‘property’ is genitive-marked (cf. Kitagawa and Ross 1982).³⁵ On the other hand, in (68b), *zaisan* ‘property’ receives accusative Case, which indicates that it is Case-licensed outside of the VNP. This construction is called light verb construction because *su* ‘do’ does not seem to assign any theta-roles to its arguments (but see below for discussion). (68b) is marginal due to the ‘surface’ double-*o* constraint, which roughly states that there cannot be more than one accusative phrase (see Harada 1973, 1975, Hiraiwa 2010, Sells 1988, and Shibatani 1973, among others, for discussion). Importantly, the violation can be circumvented by some syntactic operations such as clefting. Consider the following example that involves clefting:

- (69) [CP Op_i [IP John-ga t_i bossyuu-o si-ta] no]-wa zaisan_i-o da.
 John-Nom confiscation-Acc do-Past that-Top zaisan-Acc Cop
 ‘lit. It was John who did irrational confiscation of property.’

This example shows that the surface double-*o* constraint observed in (68b) is suppressed under clefting. Following Hiraiwa (2010), among others, I assume that the marginal status of (68b) is due to the surface filter, which disallows two accusative phrases in

³⁵ Any PP/DP in a nominal projection must be marked with genitive Case in Japanese:

- (i) a. Hanako-*(no) hon
 Hanako-Gen book
 ‘Hanako’s book.’
 b. Hanako-kara-*(no) tegami
 Hanako-Gen letter
 ‘A letter from Hanako.’

In (ia), the possessor NP *Hanako* is marked genitive and in (ib) PP *Hanako-kara* ‘from Hanako’ is marked genitive. See Kitagawa and Ross (1982) and chapter 4 for relevant discussion.

certain syntactic domains.³⁶

In this section I offer an analysis of LVCs in terms of lexical restructuring infinitives. More precisely, I will develop a version of the heavy verb analysis of LVCs (see Kuo 2009, Terada 1990, and Uchida and Nakayama 1993, among others) within the system I have adopted.

Consider the examples in (70). Kurogi (2002) observes that adverbs, but not adjectives, can appear in LVCs with double accusatives, which is shown in (70c) and (70d).

- (70) a. John-wa [VNP zinsokuna zaisan-no bossyuu]-o si-ta.
 John-Top quick property-Gen confiscation-Acc do-Past
- b. John-wa zinsokuni [zaisan-no bossyuu]-o si-ta.
 John-Top quickly [property-Gen confiscation-Acc do-Past
- c. *John-wa zaisan-o zinsokuna [bossyuu]-o si-ta.
 John-Top property-Acc quick confiscation-Acc do-Past
- d. ??John-wa zinsoku-ni zaisan-o [bossyuu]-o si-ta.
 John-Top quickly property-Acc confiscation-Acc do-Past

‘lit. John did quick confiscation of property.’ (Kurogi 2002:31; slightly modified)

³⁶ This ‘surface’ double-*o* constraint should be distinguished from the constraint that rules out double accusatives in causative constructions, which are totally ungrammatical (see Harada 1973, 1975, Hiraiwa 2010, among many others):

- (i) Mary-ga John-*o/ni hon-o yom-ase-ta.
 Mary-Nom John-Acc/Dat book-Acc read-cause-Past
 ‘Mary made John read the book.’
- (ii) [CP Op_i [IP Mary-ga John-*o/ni yom-ase-ta] no]-wa hon-o da.
 Mary-Nom John-Acc/Dat read-cause-Past that-Top book-Acc Cop
 ‘Mary made John read the book.’

Double accusatives are banned in the causative construction as shown in (i). The sentence is ungrammatical even if clefting takes place, as shown in (ii).

In (70a-b) the argument of the verbal noun is Case-licensed within the verbal noun projection. In these examples, an adjective can appear in the verbal noun projection (cf. (70a)) and an adverb can modify the matrix verb (cf. (70b)). In (70c-d), on the other hand, the argument of the verbal noun is Case-licensed by the matrix *v*, as indicated by the fact that the argument receives accusative Case. Here, only the adverb can appear, as shown by the contrast between (70c-d).³⁷ This paradigm receives a straightforward explanation under the analysis I have proposed. I assume that *su* ‘do’ in LVCs is actually a heavy (i.e. lexical) verb, as argued by Kuo (2009), Terada (1990), and Uchida and Nakayama (1993). This assumption is supported by the fact that non-agentive subjects are prohibited in LVCs (see Kuo 2009 and Saito and Hoshi 2000 for discussion):

- (71) ?*Nimotu-wa Oosaka-ni tootyaku-o si-ta.
 package-Top Osaka-to arrival-Acc do-Past
 ‘The package arrived in Osaka.’

(Kuo 2009:173 cf. Grimshaw and Mester 1988)

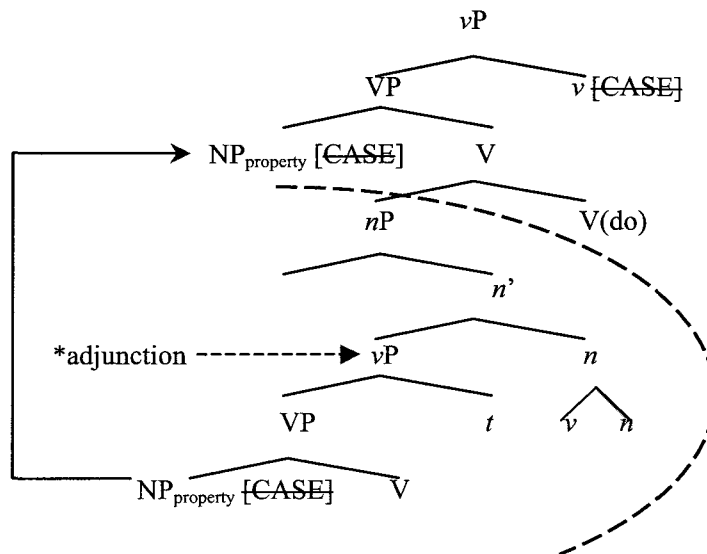
This example shows that subjects of LVCs cannot be inanimate, which in turn indicates that *si* ‘do’ in fact assigns a theta-role to the subject (but see Saito and Hoshi 2000 and Saito 2006b for alternative explanations of the data). Second, I assume that adjectives undergo adjunction (see Bošković 2010a, 2010b for recent evidence to this effect. See also chapter 3 for relevant discussion). As discussed below, the first assumption predicts that the complement of *su* ‘do’ is a spell-out domain, which should force movement of the argument of the verbal noun out of the nominal projection when the argument cannot

³⁷ The d-example has a degraded status due the surface double-*o* constraint, but it is clearly better than the c-example.

get its Case licensed within the spell-out domain.³⁸ Given the second assumption, just like adverbs, adjectives are subject to the condition on adjunction I have proposed.

Having laid out the assumptions for the analysis, let us go back to the analysis of the paradigm. In (70a-b), the argument of the verbal noun is Case-licensed within the VNP.³⁹ The VNP is a spell-out domain. Since the argument does not need to move out of the VNP for Case, adjunction to the VNP is allowed, as shown in (70a). Also, nothing bans adverbial modification of the matrix verb, which is indeed allowed, as shown in (70b). The crucial contrast we have to account for is the one between (70c) and (70d). Let us consider the following derivation:

(72)



I assume that verbal nouns are *nPs*, which dominate *vPs*. I also assume that the *v* head undergoes head-movement to the *n* head. Notice now that the matrix *V su/si* ‘do’ is sandwiched by *vs*: the higher *VP* is the complement of *vP* and the complement of the *V*

³⁸ Movement of the internal argument is proposed in Hiraiwa (2005).

³⁹ See chapter 4 for discussion.

also contains v (due to the head movement of the lower v). We thus have an ambiguous configuration here. The nP , whose head (n) hosts v , is then a spell-out domain. Assuming that there is no Case-assigner within the NP, the object has to move out of this domain for Case, hence it moves to Spec, VP. As the lower copy of this object has no Case, adjunction to NP (i.e. adjective insertion) is impossible. (70c) is thus accounted for. As the Case of the moved object is licensed by the matrix v , counter-cyclic adjunction to the matrix VP (i.e. adverb insertion) is allowed. We thus also capture (70d).

This analysis makes (at least) two predictions. First, if arguments of verbal nouns that do not require Case move out of verbal noun projections, adjective insertion within the nP should be possible. This is so because the constraint on adjunction under consideration emerges only if the spell-out domain contains a copy that is not Case-valued.

Verbal nouns that take CP-arguments show that this prediction is borne out. I assume that CPs do not have to have Case. As illustrated in (73b), an adjective is possible in a VNP, even in a case where an argument of the verbal noun moves out of the nP . Crucially, in contrast to (70c), in (73b), the moved argument is a CP. (73a) shows that the CP is indeed an argument of the verbal noun, as it can also appear with genitive within the VNP.

- (73) a. John-wa [_{VNP} zinsoku-na [ookami-ga kuru-to]-no
 John-Top quick wolf-Nom come-that-Gen
 keikoku]-o si-ta.
 warning-Acc do-Past

- b. John-wa [ookami-ga kuru-to] [_{VNP} zinsoku-na keikoku]-o si-ta.
 John-Top wolf-Nom come-that quick warning-Acc do-Past
 ‘lit. John made a quick warning that wolves are coming.’

The argument above is based on the assumption that the CP is base-generated within the VNP and moved to the matrix clause. Evidence for this assumption comes from a proper binding condition (henceforth PBC) effect (see Fiengo 1977, Matsumoto 1996b, Saito 2003, and Takita 2010 and references therein for the PBC. See Kuo 2009 and Uchida and Nakayama 1993 for extensive discussion of PBC effects in LVC. cf.). Consider the following examples:

- (74) a. John-wa [ookami-ga kuru-to] keikoku]-o si-ta.
 John-Top wolf-Nom come-that warning-Acc do-Past
 b. *John-wa [keikoku]_i-o [ookami-ga kuru-to] _{t_i} si-ta.
 John-Top warning-Acc wolf-Nom come-that do-Past

If the verbal noun is moved to the left of the CP argument, as in (74b), the sentence becomes ungrammatical. This fact receives an account once we assume that the movement of the verbal noun is actually an instance of remnant movement:

- (75) *John-wa [_{t_j} keikoku]_i-o [ookami-ga kuru-to]_j _{t_i} si-ta.
 John-Top warning-Acc wolf-Nom come-that do-Past

Here, the CP-argument first moves out of the verbal noun, leaving a trace in the VNP.

The VNP then moves across the CP argument, which violates the PBC. This shows that the movement under consideration indeed takes place (but see Saito and Hoshi 2000 and Saito 2006b for an alternative explanation).

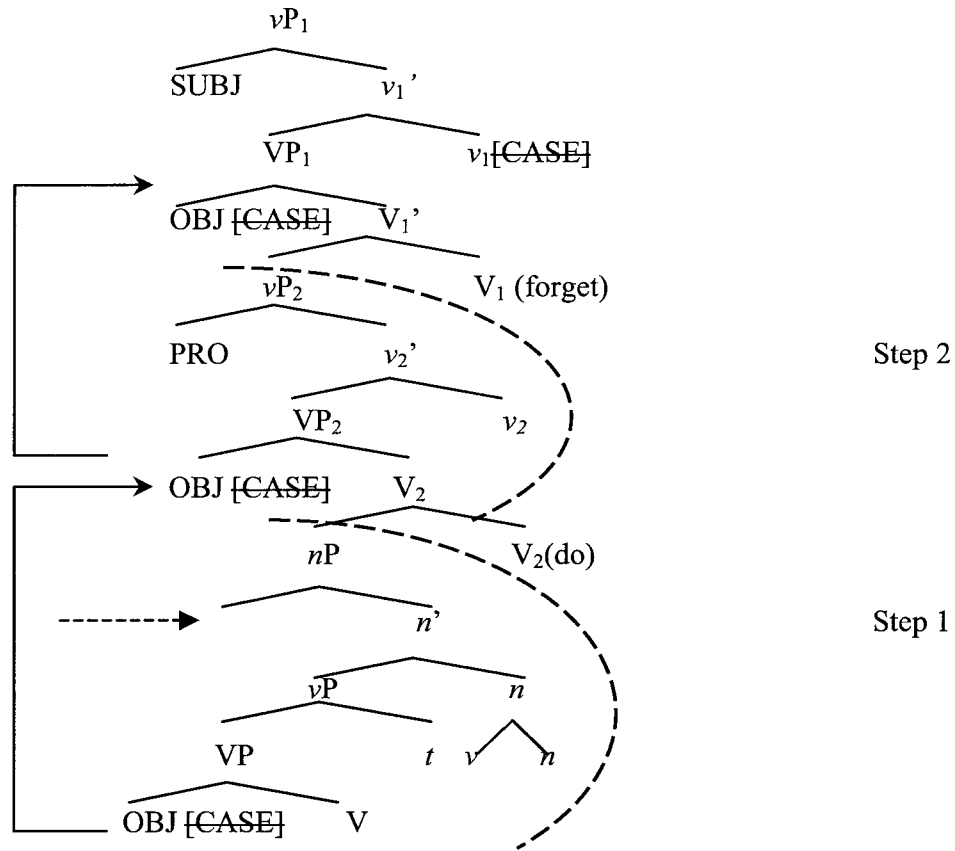
The second prediction the current analysis makes is that we should observe an anti-reconstruction effect with double accusatives when the matrix verb is further selected by *wasure* ‘forget’, just as in the case of infinitives with *wasure* ‘forget’. Consider the following examples:

- (76) a. John-wa nihongo-dake_i-o maisyuu [_{VNP} *t_i* kenkyuu]-o⁴⁰
 John-Top Japanese-only-Acc every.week study-Acc
 si-warure-ta.
 do-forget-Past
 ‘John forgot to study only Japanese every week.’
 (only > forget *forget > only)
- b. John-wa [_{VNP} nihongo-dake_i-no kikuyu]-o si-wasure-ta.
 John-Top Japanese-only-Gen study-Acc do-forget-Past
 ‘John forgot to study only Japanese.’ (*only > forget, forget > only)

While the theme argument with accusative Case must take scope over the verb *wasure* ‘forget’, the argument with genitive Case must take scope under *wasure*. Let us consider the following derivation for (76a):

⁴⁰ This example is perfect even though it has two accusatives. This is due to insertion of an adverb between the two accusative elements. See Hiraiwa (2010).

(77)



As the theme argument is below nP , which delineates a spell-out domain, the argument must move to the Spec, VP_2 in the matrix clause. This is shown as step 1. After this movement, the object must move further to Spec, VP_1 because the higher verb *wasure* ‘forget’ selects νP_2 , which is another spell-out domain. This is shown as Step 2. The object is thus Case-valued in Spec, VP_1 . The anti-reconstruction effect emerges as the object asymmetrically c-commands *wasure*. On the other hand, when the object is Case-valued within nP , as in (76b), the object does not have to move out of the nP when the nP is selected by *si* ‘do’. As a result, the object must take scope under *wasure*.

Although a full analysis of light verb constructions in Japanese is beyond the scope

of the present study, I would like to consider here briefly some examples that are discussed in Kurogi (2002). Kurogi (2002) argues that the adverb in (70d), which is repeated here, in fact modifies the verbal noun, rather than the verb.

- (78) a. ??John-wa zaisan-o zinsokuni [bossyuu]-o si-ta.
 John-Top property-Acc quickly confiscation-Acc do-Past
- b. *John-wa zaisan-o [zinsokuna bosshuu]-o si-ta.
 John-Top property-Acc quickly confiscation-Acc do-Past
- ‘lit. John did quick confiscation of property.’

(Kurogi 2002:31; slightly modified)

He provides the following data as evidence to this effect:

- (79) *John-wa zaisan-o [bossyuu]-o zinsoku-ni si-ta.
 John-Top property-Acc confiscation-Acc quickly do-Past
- ‘lit. John did quick confiscation of property.’

(Kurogi 2002: 32; slightly modified)

The point of this observation is that the adverb is adjacent to the verb but the sentence is ungrammatical. He concludes that the adverb does not modify the verb. This interesting observation can be accounted for under the present analysis. I suggest that (79) does not conform to Abels’s (2003) Stranding Generalization, which prohibits movement of complements of phase heads (see Abels 2003 and chapter 3 for details). In (79), the verbal noun *bossyuu* ‘confiscation’ is moved out of the VP phase headed by *si* ‘do’. The

derivation thus violates Abels's generalization.

To conclude, I have argued in this section that the distribution of adjuncts in Japanese light verb constructions receives an account under the theory proposed here. In particular, I proposed that light verb constructions in Japanese are best analyzed as lexical restructuring constructions. If the analysis proposed in this section is correct, it adds another case to the ban on adjunction, namely the ban on insertion of adjectives. The analysis also explains a rather surprising contrast observed in light verb constructions between nominal and CP arguments. The contrast provides evidence that adjunction under consideration is indeed constrained by Case.

5.5 Comparison with alternatives

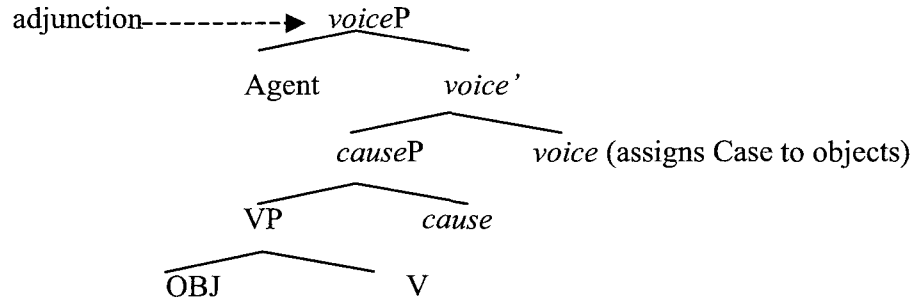
In this section I consider several proposals that could be extended to account for the ban on embedded modification discussed in sections 3 and 4 or those that are specifically made to account for this ban. I show that they face some empirical problems, which do not arise under the present analysis.

5.5.1 Tomioka (2006)

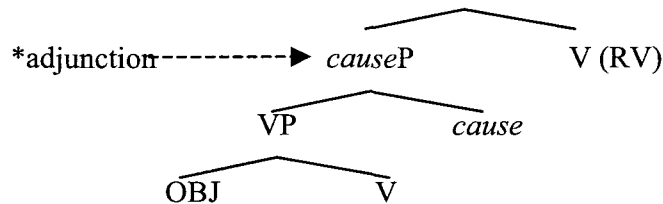
Tomioka (2006) proposes that complements of lexical restructuring verbs lack a projection that can host adverbs (i.e. *voiceP*, which introduces an agent as its Spec (see Kratzer 1996, and Pylkkänen 2002 2008 for discussion)).⁴¹ Consider the following structures:

⁴¹ Tomioka's discussion concerns infinitival complements of *wasure* 'forget'. Note also that Tomioka assumes that 'vP' actually has layers. Thus, the head that is responsible for the semantics of causation and the one that is responsible for introducing Agents and the Case of objects are distinct for Tomioka. See also Kratzer (1996) and Pylkkänen (2002, 2008).

(80) a. non-restructuring



b. restructuring



(80a), which is a non-restructuring construction, involves *voiceP*, which can host adverbs. On the other hand, (80b) involves no *voiceP*, hence there is no way to insert adjuncts (and subjects). This analysis seems to correctly capture the fact that complements of certain lexical verbs disallow adjunction. Though the analysis works for simple cases, it faces difficulties with more complex cases. I will now introduce a phenomenon that I will call *additional ban on adjunction* hereafter. Consider the following example of a restructuring PE, which takes *vP* as its complement:

- (81) Titioya_j-ga musuko_i-ni zibun_{j/i}-no hirugohan-o/ga
 father_j-Nom son_i-Dat self_{j/i}-Gen lunch-Acc/Nom
 tabe-sase-ni-ik-e-ru.
 eat-cause-Dat-go-can-Pres
 'The father_j can go to make his son_i to eat his_{j/i} lunch.'

Here, the lowest object can be marked nominative or accusative. Regardless of the case of the object, the sentence is ambiguous; *zibun* 'self' can refer to either *titioya* 'father' or *musuko* 'son'. The fact that *zibun* 'self' can refer to the dative causee indicates that there is a vP complement in the causative construction. Now, consider the following examples:

- (82) a. Titioya_j-ga musuko_i-ni zibun_{j/i}-no hirugohan-o muriyari
 father_j-Nom son_i-Dat self_{j/i}-Gen lunch-Acc forcibly
 tabe-sase-ni ik-e-ru.
 eat-cause-NI go-can-Pres
 'The father_j can go to make his son_i eat his_{j/i} lunch forcibly.'
- b. *Titioya_j-ga musuko_i-ni zibun_{j/i}-no hirugohan-ga muriyari
 father_j-Nom son_i-Dat self_{j/i}-Gen lunch-Nom forcibly
 tabe-sase-ni ik-e-ru.
 eat-cause-NI go-can-Pres
 'The father_j can go to make his son_i eat his_{j/i} lunch forcibly.'

Here, there is an adverb *muriyari* 'forcibly', which is intended to modify the causative morpheme. While this modification is possible in the non-restructuring sentence in (82a),

it is banned in the restructuring sentence in (82b). The contrast shows that the modification becomes impossible if restructuring is forced by nominative object marking. Note that this modification is in principle possible in the usual causative construction, as shown by the following example:

- (83) Titioya_j-ga musuko_i-ni zibun_{j/i}-no hirugohan-o muriyari
 father_j-Nom son_i-Dat self_{j/i}-Gen lunch-Acc forcibly
 tabe-sase-ta.
 eat-cause-Past
 'The father_j made his son_i eat his_{j/i} lunch forcibly.'

Significantly, adverbial modification of the most embedded verb is also impossible when the embedded object is marked nominative:

- (84) a. Titioya_j-ga musuko_i-ni zibun_{j/i}-no hirugohan-o hasi-de
 father_j-Nom son_i-Dat self_{j/i}-Gen lunch-Acc chopsticks-with
 tabe-sase-ni ik-e-ru.
 eat-cause-NI go-can-Pres
 'The father_j can go to make his son_i eat his_{j/i} lunch with chopsticks.'
- b. *Titioya_j-ga musuko_i-ni zibun_{j/i}-no hirugohan-ga hasi-de
 father_j-Nom son_i-Dat self_{j/i}-Gen lunch-Nom chopsticks-with
 tabe-sase-ni ik-e-ru.
 eat-cause-NI go-can-Pres
 'The father_j can go to make his son_i eat his_{j/i} lunch with chopsticks.'

Here, we have an adverb *hasi-de* ‘with chopsticks’, which is intended to modify the verb *tabe* ‘eat’. In (84a), the embedded object is marked accusative and the adverb is allowed. On the other hand, in (84b), the embedded object is marked nominative and the adverb is now disallowed. Notice again that in the causative construction, this kind of modification is possible:

- (85) Titioya_j-ga musuko_i-ni zibun_{j/i}-no hirugohan-o hasi-de
 father_j-Nom son_i-Dat self_{j/i}-Gen lunch-Acc chopsticks-with
 tabe-sase-ta.
 eat-cause-Past
 ‘The father_j made his son_i eat his_{j/i} lunch with chopsticks.’

Note also that restructuring constructions with *wasure* ‘forget’, which are Tomioka’s (2006) main concern, show the identical pattern:

- (86) Context: A student won a prize. A professor, who was at home, forgot to made him
 report the news to his home while the student was still in school. (The professor was
 not in school)
- a. Sensei_j-wa gakusei_i-ni gakkoo-de sono-nyuusu-o zibun_{j/i}-no zimoto-e
 teacher-Top student-Dat school-in that-news-Acc self-Gen home-to
 hookoku-sase-ru-no-o wasure-ta.
 report-cause-Pres-that-Acc forget-Past
 ‘The teacher forgot to make the student report the news to his_{j/i} home at
 school.’

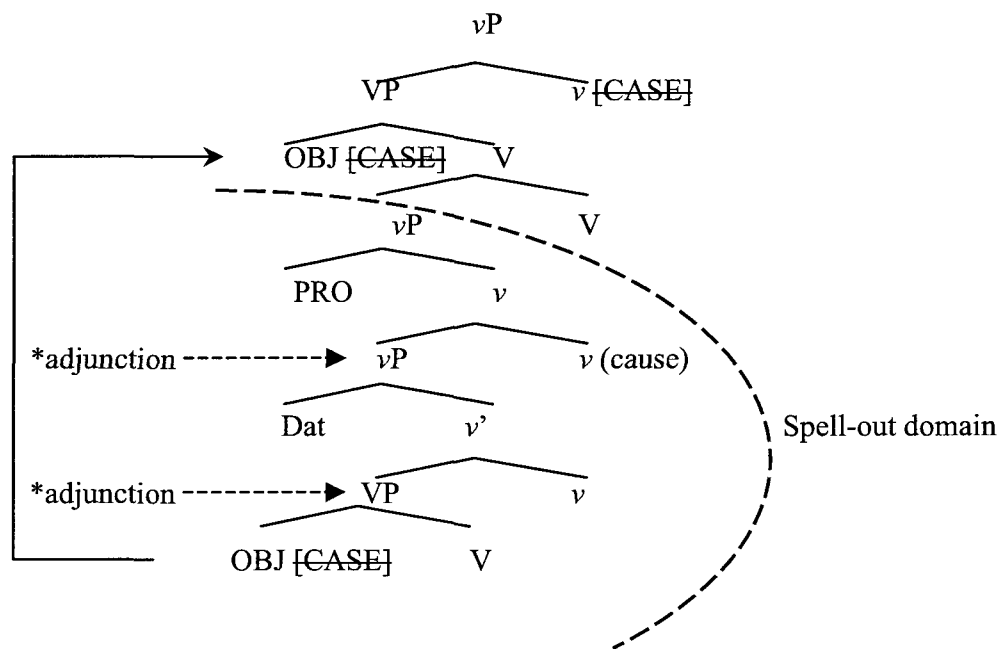
- b. #Sensei_j-wa gakusei_i-ni gakkoo-de sono-nyuusu-o zibun_{j/i}-no zimoto-e
 teacher-Top student-Dat school-in that-news-Acc self-Gen home-to
 report-cause-forget-Past
 hookoku-sase-wasure-ta.
 ‘The teacher_j forgot to make the student_i report the news to his_{j/i} home at
 school.’

In this context, the matrix interpretation of the adverb *gakkoo-de* ‘in school’, in which the event of forgetting takes place in school, is impossible, which in turn forces the embedded modification of the adverb. In this context, non-restructuring sentences like (86a) are allowed, while restructuring sentences like (86b) are disallowed. The above data lead us to conclude that any embedded modification is banned due to restructuring in the causative construction. Of importance here is the fact that the ban on adjunction arises with respect to complements of the causative morpheme *-sase* ‘cause’, which is in turn selected by the lexical restructuring verbs.

Having introduced the additional ban on adjunction, we can go back to the discussion of Tomioka’s (2006) proposal. Under Tomioka’s (2006) analysis, it is unclear how this additional ban can be explained. There are two reasons for this conclusion. First, as the analysis is stated in terms of a selectional property (of restructuring verbs), which works locally, it is difficult to explain the additional ban, which takes place in complements that are not directly selected by restructuring verbs. Second, in (84b) and (86b), complements of restructuring verbs do seem to have *voiceP*. We have seen that the dative causee in the causative construction is a subject, which is located in Spec, *vP*. This in turn indicates that the head that hosts the dative causee (i.e. the embedded *v*) should be

a *voice* head. Then, we have here an example in which adjunction is banned even in the presence of *voiceP*. These considerations all point to the conclusion that Tomioka's (2006) proposal is insufficient to capture the full range of relevant facts. On the other hand, this additional ban on adjunction receives a straightforward account under the present analysis. Consider the following derivation, which corresponds to (82b), (84b) and (86b) (see the previous section for discussion of the causative construction):

(87)

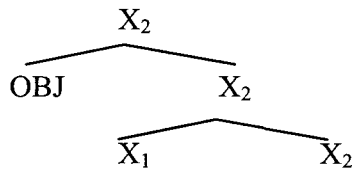


The complement of the lexical restructuring verb in (87) is a causative sentence. This is a spell-out domain because it is the complement of *ik* 'go'. Consequently, the embedded object must move out of this domain for Case. As the lower copy left behind in the spell-out domain has no Case, adjunction within this domain is correctly predicted to be impossible.

5.5.2 Complex head analysis

Hoshi (2006), Saito (2000), Saito and Hoshi (1998), and Yumoto (2004), among others, propose that (at least some) restructuring constructions involve a complex head, where two heads are directly combined in the syntax (either by direct merge or head movement). Consider the following derivation.

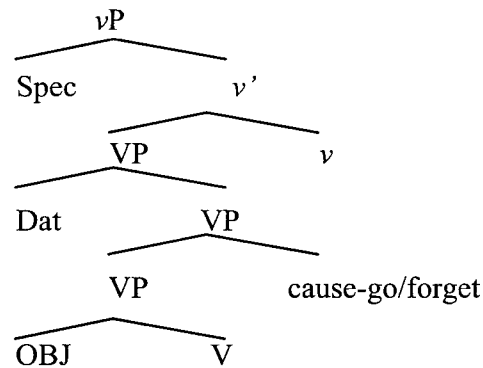
(88)



Here the embedded verb (X_1) is directly merged to the restructuring verb (X_2). This analysis can capture the ban on adjunction to complements of restructuring verbs if we assume that adjuncts need to modify phrasal categories. This is so because there is no ‘embedded’ XP that adjuncts could adjoin to (see Yumoto 2004 for somewhat relevant discussion).

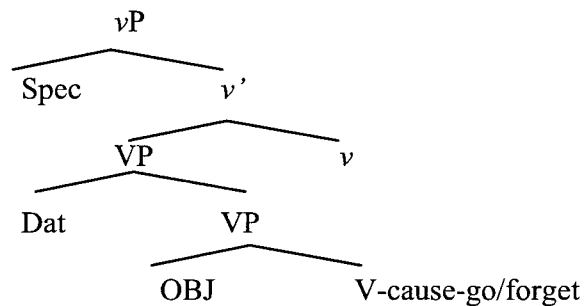
Though this type of analysis is entertained by many authors, the complex head analysis armed with the assumption made here is also not without problems. First, the additional ban on adjunction I have introduced raises a question for this approach. This is so because nothing bans derivations like the following:

(89)



Here, the causative morpheme and the lexical restructuring verb form a complex head but the complement of the causative morpheme is a VP, which can in principle host adjuncts. One could postulate the following structure, in which all the verbs are merged together:

(90)



Here, all the verbs are merged together to form a complex head. The additional ban on adjunction can be captured because there are no projections to adjoin adverbs below the restructuring verbs. While this derivation is not excluded under the complex head analysis, the real problem is that it is unclear under this analysis how (89) and (90) can be differentiated. In other words, (89) should be ruled out even as an option but it is unclear

how this can be done under the complex head analysis. Unless this possibility is excluded in a principled way, the complex head analysis predicts that there should be no additional ban on adjunction.

Another problem for this approach is that complements of lexical verbs do have a VP projection, contrary to what the structure in (88) shows. I now consider *soo-su* ‘do so’ replacement in the context of restructuring (see Hinds 1973, Koizumi 1994b, Nakau 1971, Shibnatani 1973 and Tateishi 1991. See also Hasegawa 1980, Kageyama 1993, Koizumi 1995 and Saito 2001 for *soo-su* replacement in complex predicates). Consider first the following examples:

(91) Taro_{wa} hon_o yon_{da}.

Taro-Top book-Acc read-Past

‘Taro read a book.’

(92) a. Hanako_{mo} soo si_{ta}.

Hanako-also so do-Past

‘Hanako did so (read a book).’

b. * Hanako_{wa} zassi_o soo si_{ta}.

Hanako-Top magazine-Acc so do-Past

‘Hanako did so magazines.’

(92a-b) contain a VP anaphora, (91) being its antecedent. (92a), where the VP that contains the verb and the object is replaced by *soo-su* ‘do so’, is grammatical. On the other hand, (92b), where the anaphora replaces only the preceding verb, is ungrammatical. This set of data indicates that *soo-su* ‘do so’ must replace a VP. Given this observation,

let us consider the following example of restructuring PEs :

- (93) Titioya_j-ga musuko_i-ni zibun_{j/i}-no hirugohan-ga
 father_j-Nom son_i-Dat self_{j/i}-Gen lunch-Nom
 tabe-sase-ni-ik-e-ru.
 eat-cause-Dat-go-can-Pres

‘The father_j can go to make his son_i to eat his_{j/i} lunch.’ (= (81))

- (94) a. Hahaoya-wa (*musume-ni) soo-si-ni-ik-e-ru.
 mother-Top daughter-Dat so-do-NI-go-can-Pres
 ‘*The mother can go to do so her daughter.
 b. Hahaoya-wa (musume-ni) soo-sase-ni-ik-e-ru.
 mother-Top daughter-Dat so-cause-NI-go-can-Pres
 ‘The mother can go to make her daughter do so.

(93) is an example of a restructuring PE, which takes *vP* as its complement. In this example the additional ban on adjunction emerges. (94a-b) involve VP anaphora. In (94a), what is replaced is the complement of the motion verb. Hence, the dative causee cannot appear in this sentence. In (94b), what is replaced is the complement of the causative morpheme. Hence, the causee is possible in this sentence. Of importance here is the fact that even where the additional ban on adjunction emerges, every verbal head seems to project its own projection. This observation receives a straightforward account under the analysis proposed in this chapter because each verbal head does project its own projection. While it may not be impossible to capture this observation in terms of the complex head analysis, the analysis must stipulate some devices to capture this fact (see

Saito 2001 for some relevant discussion).

Finally, the complex head analysis cannot account for the contrast concerning light verb constructions we have observed in the previous section. Recall that the ban on adjunction under consideration does not arise if there are no elements that have an unvalued Case-feature. The relevant examples are repeated here:

- (95) ??John-wa zaisan-o zinsokuni [bossyuu]-o si-ta.
 John-Top property-Acc quickly confiscation-Acc do-Past
 ‘lit. John did a quick confiscation of property.’
- (96) John-wa [ookami-ga kuru-to] [_{VNP} zinsokuna keikoku]-o si-ta.
 John-Top wolf-Nom come-that quick warning-Acc do-Past
 ‘lit. John made a quick warning that wolves are coming.’

The contrast shows that light verb constructions with NPs, which need to be Case-valued, trigger the ban on adjunction to the verbal noun, while those with CPs, which need not be Case-valued, do not trigger the ban on adjunction. As both examples are light verb constructions, which should involve a complex head, the contrast cannot be explained under the complex head analysis.

5.5.3 Tsujimura (1993)

Tsujimura (1993) focuses on morphological differences between PEs and SEs. Tsujimura (1993) assumes that while the morpheme *-te* in SEs has tense specification, *-ni* in PEs has no tense specification. Based on this assumption, Tsujimura suggests that adjuncts require [tense] to be interpreted. This condition applies uniformly to both

restructuring and non-restructuring sentences. This suggestion correctly captures at least part of the generalization I have obtained. As SEs have a [tense] specification, embedded modification is predicted to be available. Tsujimura assumes that matrix modification for SE is unavailable because the matrix predicate becomes an auxiliary. Moreover, as PEs have no tense specification, embedded modification is banned. However, as we have seen above, the difference between the two constructions disappears if we force non-restructuring configurations. In particular, under Tsujimura's analysis, it remains unexplained why non-restructuring PEs allow embedded modification.

In fact, Tsujimura's (1993) motivation for her proposal is her observation that the contrast between PEs and SEs with respect to embedded modification can be observed even in sentences with an accusative object, which is consistent with Tsujimura's (1993) suggestion. However, what Tsujimura (1993) fails to note is that embedded accusative objects do not necessarily entail restructuring. In other words, examples with an accusative object can involve restructuring as long as the adjacency requirement is respected. This point can be shown by the fact that a clause-bounded NPI *-sika* in the embedded clause with an accusative object can be licensed by matrix negation (see Tanaka 1997 and references therein for discussion of *sika* NPIs):⁴²

⁴² The clause-boundedness of *sika* is shown by the following contrast:

- | | | | | | |
|------|--------------------------------------|------------|--------------|---------------|----------------|
| (i) | Taroo-ga | hon-sika | kawa-na-i. | | |
| | Taroo-Nom | book-SIKA | buy-Neg-Pres | | |
| | 'Taro buy only books.' | | | | |
| (ii) | *Hanako-wa | [Taroo-ga | hon-sika | ka-u-to] | omow-ana-i. |
| | Hanako-Top | Taroo-Nom | book-SIKA | buy-Pres-that | think-NEG-Pres |
| | 'Hanako thinks Taro buy only books.' | | | | |

In (i) the object *hon* 'book' is accompanied by *sika* and *sika* is c-commanded by negation in the same clause. However, in (ii) there is a clausal boundary between *sika* and the negation. The contrast shows that *sika* must be licensed by negation in the same clause.

- (97) a. Hanako-ga Mary-ni-sika zassi-o watasi-ni (PE)
 Hanako-Nom Mary-to-SIKA magazine-Acc pass-NI
 ika-na-i.
 go-Neg-Pres
 ‘Hanako goes to pass magazines only to Mary.’
- b. Hanako-ga Mary-ni-sika zassi-o watasi-te (SE)
 Hanako-Nom Mary-to-SIKA magazine-Acc pass-TE
 ika-na-i.
 go-Neg-Pres
 ‘Hanako passes magazines only to Mary and goes (somewhere).’

In (97a-b), the embedded verb is adjacent to the matrix verb. *Sika* attached to the dative argument of the embedded verb is licensed by the matrix negation. I assume that the accusative Case in these examples is Case-valued by the matrix *v*. As Tsujimura’s crucial examples are those in which the two verbs are adjacent, which means that they can satisfy the adjacency requirement, we cannot draw any conclusions based on her original examples. The unambiguous non-restructuring examples in the text show that Tsujimura’s (1993) suggestion cannot be correct.

5.6 Conclusions

I have argued for the following two conclusions: (i) there are (at least) three types of restructuring infinitives in Japanese, which is consistent with Wurmbrand’s (2001) approach to restructuring infinitives, and (ii) there is a general ban on adjunction to complements of lexical restructuring verbs, which is best explained by an interaction of

contextual emergence of phases and Case feature checking. I have also argued that this ban regulates adverb insertion, quantifier raising, and adjective insertion. One of the most important results of this chapter is the finding that there is another way of creating phases, which crucially relies on the context where Vs are found. In particular, I have argued that VPs are phases only when VPs are sandwiched by *vs*, which creates an offending configuration. This offending configuration is resolved by transfer of the lower *v*P. This chapter thus further confirms contextual approaches to phases on which phaseshood of a phrase is determined contextually. Furthermore, I have provided additional evidence that *v*P does not work as a phase when *v* does not assign Case.

As in the previous chapters, the analysis indicates that Case plays an important role in the syntax. Case determines phases, and Case of arguments in some contexts forces movement of the arguments. Furthermore, Case constrains adjunction. This is inconsistent with approaches that push Case outside of the syntax (see e.g. Marantz 1991).

Chapter 6: Conclusion

In this thesis, I have investigated the status of *phases* with a particular emphasis on several constructions in Japanese and other languages that involve Case. I have argued for a contextual approach to phasehood where Case is crucially involved in determining phasehood. Contrary to Chomsky's approach to phases where CPs and ν Ps are always phases, I have argued that CPs and ν Ps are phases only when their head is involved in Case-valuation. In particular, I have shown that ν Ps with a full set of arguments do not work as phases when their head is not involved in Case-valuation. Furthermore, I have shown that A-movement out of a CP, a prerequisite for which is that the CP in question is not a phase, is possible only when the C head is not involved in Case-valuation. I have also extended the Case/phase hypothesis to other phases: APs, CPs, NPs/DPs, PPs, and ν Ps all function as phases only when they are involved in Case-valuation. I have also proposed another way of creating a phase. In particular, I argued that VPs are phases when they are "sandwiched" by ν Ps, which yields an "offending" ambiguous X-Y-X configuration. This case provided another argument for the contextual approach to phases. I have also discussed a number of other issues/phenomena. Among other things, I provided a deduction of Government Transparency Corollary effects, (partial) deduction of Saito and Murasugi's (1990)/Lobeck's (1990) generalization regarding ellipsis, and provided evidence for the lack of DP in Japanese, Wurmbrand's (2001) approach to restructuring infinitives, the assumption that only complements of phase heads can be elided, and proposed a general ban on adjunction which was explained by an interaction of contextual emergence of phases and Case feature checking.

One might wonder *why* Case matters for phases or other syntactic operations such as

adjunction. Notice now that Case-features are different from other features (such as phi-features and operator features) in one important respect: Case-features are uninterpretable both on probes and goals while other features can be interpretable; they are in fact generally interpretable on one element. Take phi-features, for example. While phi-features on T are uninterpretable, phi-features on NPs are clearly interpretable: they contribute to the interpretation of NPs. On the other hand, neither Case-features of probes nor Case-features of goals contribute to the semantics. Case features are then more “syntactic” than other features. It may then not be so surprising that Case plays a significant role in syntactic computation, constraining phasehood/transfer and adjunction, among other things.

While there are remaining issues to be addressed in future research, I hope that the thesis contributes to further understanding of the role of Case and the nature of phases in general.

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