Rightward Movement Phenomena in Human Language

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A thesis submitted in fulfilment of requirements for the degree of

Doctor of Philosophy

to

Linguistics and English Language

School of Philosophy, Psychology and Language Sciences

University of Edinburgh

April 2009

Declaration

I hereby declare that this thesis is of my own composition, and that it contains no material previously submitted for the award of any other degree. The work reported in this thesis has been executed by myself, except where due acknowledgement is made in the text.

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Abstract

The aim of my thesis is to show that some properties of rightward movement constructions (a cover term referring to sentences where an element appears to be "displaced" to the right) may be derived from syntactic principles and interface conditions within the framework of the minimalist program, and also to claim that properties which have up to now been dealt with purely in syntax receive a better account in terms of language processing.

I develop a nonmovement approach to the *Japanese Post-Verbal Construction* (JPVC) by claiming that a postverbal phrase is adjoined to an element by *External Merge*, and that it is permitted as a syntactic object by a licensing condition which allows it to be construed as an argument or a modifier by interpretive rules at the interface level (*SEM/LF*). Many syntactic properties of the JPVC are accounted for in terms of independently motivated interface conditions and syntactic principles.

I assume that the parser is a system that can make use of UG principles as well as language particular rules, and that the parser should be universal. The interaction of syntactic principles with parsing strategies makes it possible to cope with elusive problems concerning scope ambiguity as well as locality effects observed in the JPVC. This interaction may also account for the *Right Roof Constraint* effect displayed by the rightward movement constructions in English (i.e., *Heavy NP Shift (HNPS), Extraposition from NP*, and *Right Dislocation*). Furthermore, it predicts that languages fall into three types with respect to the possibility of the HNPS construction: (i) both subjects and objects can appear in postverbal position (e.g., Italian, Japanese, Turkish); (ii) subjects cannot do so (e.g., English); (iii) neither subjects nor objects can appear in postverbal position (e.g., Dutch, German).

The claim that there is a parsing strategy relating to linear distance is supported by an experiment designed as a test for the effect of the length of intervening elements on acceptability of the JPVC, with the data obtained using *Magnitude Estimation*, a technique used in psychophysics to measure judgements of sensory stimuli.

Acknowledgements

First and foremost, I wish to express my deepest gratitude to Peter Ackema, who has served as my first supervisor for the last three years, for his meticulous feedback and constant encouragement. Without his patience and encouragement, I would never have finished this thesis.

I am also extremely grateful to Jim Hurford, who served as my supervisor for the first two years, for his kindness and generosity. I also wish to thank Caroline Heycock, who has served as my second supervisor for the last two years, for her useful comments and remarks. Furthermore, I thank Simon Kirby for serving as my second supervisor for the first year.

I would like to thank my fellow students for their support. Among them are Kaori Miura-Dowman, Kyoko Otsuki, and Emi Sakamoto. I also wish to thank Masayuki Ike-uchi and Masaya Yoshida for their useful suggestions.

I also wish to thank Naoki Fukui and Yasuhiko Kato for affording me opportunities to give talks to their classes about the ideas advanced in this work.

Finally, my special thanks go to my mother, Michiko, and my sister, Michiyo, for their support.

Work on this thesis was partially supported by a grant from Sophia Linguistic Institute for International Communication, Sophia University, Tokyo.

List of Abbreviations

A	adjective
Abl	ablative
Acc	accusative
Adv	adverb
CFC	core functional category
COMP	complementizer
Conj	conjunction
Dat	dative
DO	direct object
EA	external argument
EX	Extraposition from NP
FP	sentence final particle
Gen	genitive
HNPS	heavy NP shift
IO	indirect object
JPVC	postverbal construction in Japanese
LA	lexical array
LC	licensing condition for the postverbal element
Lit	literal
N	noun
N/A	not applicable
Neg	negative
NPI	negative polarity item
Nom	nominative
NS	narrow syntax
P	postposition/preposition
Pl.	plural
Poss	possessive
PVC	postverbal construction
Q	question particle/quantifier
RA	right association principle
RD	right dislocation
RRC	Right Roof Constraint
TOP	topic

UREC	unconscious reinterpretation condition
V	verb

Contents

Chapter 1 Introduction

The aim of my thesis is to show that some properties of rightward movement constructions (a cover term referring to sentences where an element appears to be "displaced" to the right) may be derived from syntactic principles and interface conditions within the framework of the minimalist program, and also to claim that properties which have up to now been dealt with purely in syntax receive a better account in terms of language processing.

1.1 Two main questions

In general, Japanese is a verb-final language. In colloquial speech, however, a phrase frequently follows a verbal element, as exemplified in (1):[1]

(1) Φ_i Kuruma-o kinoo kat-ta yo **Taro-ga$_i$**.
car -Acc yesterday buy-Past FP **Taro-Nom**
Lit. "Φ_i a car yesterday bought, **Taro$_i$**." (Taro bought a car yesterday.)

In the above example, the subject *Taro-ga* ("Taro-Nom") appears in postverbal position. This type of construction is sometimes called the postverbal construction (Kural (1997); Kaiser (1999)).

There are two types of previous structural analyses of the postverbal construction in Japanese: (i) movement analyses; (ii) nonmovement analyses. Some researchers who adopt movement analyses claim that postverbal elements are derived by movement because they appear to obey island constraints such as the so called "Complex NP Constraint", as shown in (2), where the relevant phrase is extracted out of the relative clause, violating the Complex NP Constraint.[2]

(2) *?[$_{NP}$[$_{CP}$ Φ_i sonkeisiteiru]sensei] -ga fueteimasu yo, **gakuseitati$_i$-ga.**
respect teachers-Nom increase FP **students -Nom**
Lit.**"**Teachers who Φ_i respect have increased, **students$_i$**."

[1] The relevant elements are in boldface, and the zero symbol Φ marks the position with which the boldfaced element is associated.

[2] *The Complex NP Constraint*:
No element contained in a sentence dominated by a noun phrase with lexical head noun may be moved out of that noun phrase by a transformation.
(Ross (1986: 76))

The example in (3), however, is acceptable although it violates the Complex NP Constraint:

(3) [$_{NP}$[$_{CP}$ Φ_i sonkeisiteiru]]gakuseitati-ga fueteimasu yo, **ano sensei$_i$-o**.
respect students -Nom increase FP **that teacher-Acc**
Lit. "Students who respect Φ_i have increased, **that teacher$_i$**."

It has been generally assumed that a violation of island constraints indicates that the relevant syntactic phenomenon involves movement. That is, if what look like displacements violate island constraints but are still acceptable, it means that they should not be derived by movement. Hence, (3) is problematic for movement analyses.

I assume that a postverbal element is base-generated in a CP-adjoined position. Then, two main questions arise:

(4) a. How are postverbal elements licensed?
b. Why does the Japanese postverbal construction display locality effects in some cases?

To answer the first question, I will propose a licensing condition for postverbal elements which is applicable to English rightward movement constructions as well as the Japanese postverbal construction. With respect to the second question, I will claim that locality effects can follow from some parsing strategies.

1.2 Outline

The present study is organised as follows. In Chapter 2, I focus on cross-linguistic descriptions of rightward movement phenomena observed in six languages: Japanese, English, Dutch, German, Italian, and Turkish. First, I present a general description of the Japanese postverbal construction. Then, I consider three types of constructions in English: Heavy NP Shift, Extraposition from NP, and Right Dislocation. Finally, I briefly describe the other languages in the light of the rightward movement constructions. Descriptions in general are provided in an analysis-neutral manner.

In Chapter 3, I first present an outline of the organisation of the grammar as well as some assumptions in the minimalist program, on the basis of which I will develop a syntactic analysis for the Japanese postverbal construction. Then, I assume that the

parser is a system that can make use of UG principles as well as language particular rules. Finally, I discuss two parsing strategies: (i) the Generalised Theta Attachment; (ii) the Unconscious Reanalysis Condition.

In Chapter 4, first, I present a critical review of some of the previous accounts of the Japanese postverbal construction, and claim that movement analyses are untenable (section 4.2). Secondly, I propose that a postverbal phrase is adjoined to an element by External Merge based on the assumption that the derivation of the Japanese postverbal construction involves no movement. To answer the question in (4a), I claim that the postverbal phrase is licensed through its association with a relevant element in accordance with a licensing condition (section 4.3). Thirdly, I demonstrate that the syntactic positions to which postverbal phrases adjoin are determined by independently motivated interface conditions, and that the restriction of the Japanese postverbal construction to root clauses can also follow from such interface conditions. I claim further that the acceptability of the preceding clause is a necessary condition for the acceptability of the Japanese postverbal construction (section 4.4).

With respect to locality effects (i.e., (4b)), I claim that the presence/absence of locality effects in the Japanese postverbal construction follow from the interaction of syntactic principles with parsing strategies. I also argue that the parsing strategies can deal with cases like the preferred reading of scopally ambiguous Japanese postverbal constructions (section 4.5). I claim further that there is a parsing strategy relating to linear distance, based on the results of an experiment designed as a test for the effect of the length of intervening elements on the acceptability of the Japanese postverbal construction, with the data obtained using Magnitude Estimation, a technique used in psychophysics to measure judgements of sensory stimuli. Finally, I attempt to provide a tentative explanation for the contrast between postverbal constructions and non-postverbal constructions in Japanese with respect to the length effect by adopting a parsing principle proposed in Hawkins (2004) (section 4.6).

In Chapter 5, I argue that the licensing condition holding true for the Japanese postverbal construction is applicable not only to the English Right Dislocation construction but also to the English Extraposition from NP construction. I also claim that the effects of locality in three types of rightward movement constructions in English including the Heavy NP Shift construction can follow from the parsing strategies which are independently motivated. I propose further that languages fall into three types with respect to the possibility of the Heavy NP Shift construction:(i) both subjects and objects can appear in postverbal position (e.g., Italian, Japanese, Turkish); (ii) subjects cannot do so (e.g., English); (iii) neither subjects nor objects

can appear in postverbal position (e.g., Dutch, German).

Chapter 2 General Description

2.1 Introduction

In this chapter, I will focus on a cross-linguistic description of the rightward movement phenomena observed in six languages—Japanese, English, Dutch, German, Italian, and Turkish. In the first section, I will give a general description of the Japanese postverbal construction in which elements appear to the right of a verbal element. In the second section, I will consider three types of constructions in English: Heavy NP Shift, Extraposition from NP and Right Dislocation. In the last half of the chapter, I will present, more briefly, a description of the rightward movement constructions in the other languages.

2.2 Japanese

In this section, I will describe the properties of the postverbal construction in Japanese in a manner that is as analysis-neutral as possible. Prior to consideration of the construction in question, a short overview is taken of Japanese syntax in as far as it is relevant to the issues addressed in this thesis. Then a general survey is given of properties of the rightward movement construction.

2.2.1 Japanese as a verb-final language

It is well known that Japanese is descriptively a verb-final language. Declarative clauses in Japanese may be classified into three categories according to the types of conjugating verbal elements: verbs, auxiliary verbs, and adjectives (Kuno (1978b)). Verbs are subdivided into three classes—intransitives, monotransitives, and ditransitives— as exemplified in (1), where the subject is marked with a nominative particle *-ga*, the direct object with an accusative particle *-o*, and the indirect object with a dative particle *-ni*:[1]

[1] The relevant elements are in boldface.

(1) Verbs

a. Basu-ga **ki-ta**. [Intransitve]
Bus-Nom come-Past
"Here comes a bus."

b. Taro-ga keiki-o **tabe-ta**.[2] [Monotransitive]
Taro-Nom cake-Acc eat -Past
"Taro ate cake."

c. Taro-ga Hanako-ni hana-o **age-ta**. [Ditransitive]
Taro-Nom Hanako-Dat flower-Acc give-Past
"Taro gave some flowers to Hanako."

The following examples demonstrate that auxiliary verbs inflect like verbs. The copula *da* ("be") in (2a) is conjugated into the past form. *Nakat* ("not") in (2b) is attached to the verb *mi* ("watch"), and it thereby seems as if the negative auxiliary verb is conjugated like a verb:

(2) Auxiliary verbs[3]

a. Taro-wa ano toki gakusei **dat-ta** [Copula]
Taro-Top that time student be-Past
"Taro was a student at that time."

b. Taro-wa terebi-o **mi-nakat-ta** [Negative]
Taro-Top television-Acc watch-Neg-Past
"Taro didn't watch TV."

Adjectives may also function alone as predicates, as shown in (3), where an adjective is not followed by a copula.

(3) Adjectives

Taro-wa **wakai**.
Taro-Top young
"Taro is young."

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[2] There is another kind of monotransitive verb that requires the dative particle *ni* for its direct object as shown below:

(i) Taro-ga Hanako-ni at-ta.
Taro-Nom Hanako-Dat meet-Past
"Taro met Hanako."

[3] Auxiliary verbs in Japanese are assumed here to include modality such as *rashii* ("it seems") and aspect *ta* ("have") as well.

The subordinate clause ends with a verbal element as well:

(4) Subordinate clauses

a. Taro-wa [Hanako-ga doresu-o ano mise de **kat-ta**] to omot-ta.
Taro-Top Hanako-Nom dress-Acc that shop at buy-Past Comp think-Past
"Taro thought that Hanako bought a dress at that shop."

b. [Ame-ga **fut-ta**] node, takusi-ni not-ta.
rain-Nom fall-Past because, (I) taxi-Dat take-Past
"I took a taxi because it rained."

In (4a-b), the verbs *kat-ta* ("bought") and *fut-ta* ("fell") are placed at the end of the subordinate clauses, respectively.

Let us next look at the interrogative clause. Interrogative sentences often end with question particles such as *ka*. As the example in (5b) shows, in the case of a wh-question, the wh-word *nani-o* ("what-Acc") does not move unlike an English wh-word.

(5) Interrogatives

Yes/No question

a. Taro-wa ki-masu ka.
Taro-Top come-Nonpast Q
"Does Taro come?"

Wh-question

b. Taro-wa sokode **nani-o** mi-masita ka.
Taro-Top there what-Acc see-Past Q
"What did Taro see there?"

2.2.2 Ellipsis

In Japanese, constituents such as subject NPs and object NPs are not necessarily required to be present in sentences. The subject in (6b) is missing, both subject and object in (6c) are missing, and in (6d), all the constituents except the verb are missing.[4] Nevertheless, each example in (6) is grammatical. The missing expressions are usually understood in context.

[4] *Φ* indicates that the relevant position has an argument without phonetic content.

(6) a. Taro-ga kuruma-o kat-ta.
Taro-Nom car -Acc bought
"Taro bought a car."
b. *Φ* kuruma-o kat-ta.
car -Acc bought
"(I/You/He/She/They) bought a car."
c. Taro-ga *Φ* kat-ta.
Taro-Nom bought
"Taro bought (it/them)."
d. *Φ Φ* Kat-ta.
bought
"(I/You/He/She/They) bought (it/them)."

I will discuss in Chapter 4 what the missing expressions are.

2.2.3 Word order: SOV

As the following examples demonstrate, Japanese has relatively free word order:

(7) a. Kinou Taro-ga kuruma-o kat-ta.
yesterday Taro-Nom car -Acc bought
"Taro bought a car yesterday."
b. Tagro-ga kinou kuruma-o kat-ta.
Taro-Nom yesterday car-Acc bought
c. Kuruma-o kinou Taro-ga kat-ta.
Car-Acc yesterday Taro-Nom bought
d. Kuruma-o Taro-ga kinou kat-ta.
Car-Acc Taro-Nom yesterday bought

Each of the examples in (7) has a different word order, but all of them are identical in logical content. It may be assumed, however, that the Japanese canonical order is subject-object-verb (SOV) based on, among other considerations, the fact that Japanese displays a rigid-word-order effect when the subject and the object have the same case particles (see Kuno (1978b: 59)):

(8) Taro-ga Hanako-ga suki na koto
Taro-Nom Hanako-Nom fond-of be-Nonpast Comp
"the fact that Taro is fond of Hanako"

It is known that Japanese stative verbs mark both subject and direct object with the nominative case particle *-ga* (e.g., Tsujimura (1996: 211ff.)). In (8), the subordinate clause means that "Taro is fond of Hanako", and not that "Hanako is fond of Taro." This suggests that there are no changes in subject-object word order when both subject and object are marked with identical case particles. Thus, it is preferable to assume that Japanese underlying word order is SOV because it would otherwise be necessary to assume an additional constraint that prohibits the second nominative NP from being interpreted as the subject.

2.2.4 The Post-Verbal Construction in Japanese

Thus far, it has been argued that in general, Japanese clauses end with verbal elements and that the canonical word order is SOV. In colloquial speech, however, a phrase frequently follows a verbal element as exemplified in (9), with the relevant element in bold:[5]

(9) Kuruma-o kinou kat-ta yo **Taro-ga**.
car -Acc yesterday bought FP **Taro-Nom**
"**Taro** bought a car yesterday."

In this subsection, I will discuss the type of construction in which elements appear in postverbal position. This kind of construction is sometimes called the postverbal construction (Kural (1997); Kaiser (1999)): henceforth, I refer to this construction type as the Post-Verbal Construction in Japanese (JPVC).[6, 7]

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[5] The example in (9) becomes less acceptable without final particles such as *yo*:

(i) ?? Kuruma-o kinou kat-ta **Taro-ga**.
Car -Acc. yesterday bought **Taro -Nom**
"**Taro** bought a car yesterday."

[6] Overt proforms like a pronoun, which may be associated with the postverbal noun, are allowed to appear in subject and object positions:

i) a. Kare /aitsu-ga kuruma-o kat -ta yo, **Taro-ga.**
He / that fellow-Nom car car-Acc bought FP, **Taro-Nom**.
Lit. "He/ that fellow bought a car, **Taro**."
b. Taro-ga sore-o kat-ta yo, **ano kuruma-o**.
Taro-Nom it -Acc bought FP, that car -Acc.
Lit. "Taro bought it, **that car**."

2.2.4.1 The postverbal element

In this subsection, I will focus on the syntactic properties of the JPVC. More specifically, I will discuss what can and what cannot appear in postverbal position.

2.2.4.1.1 What syntactic categories can appear postverbally?

I will first consider what syntactic categories can come after verbal elements. Noun phrases can occupy the postverbal position regardless of the types of particles with which NPs are marked as shown in (10a-d), where a nominative NP, an accusative NP, a dative NP, and the NP marked with the topic particle *wa* appear after the verbs.[8]

NP

(10) a. Φ_i kuruma-o kinou kat-ta yo **Taro$_i$-ga**. [=(9)]
car -Acc yesterday bought FP **Taro -Nom**
"**Taro** bought a car yesterday."

b. Toaro-ga Φ_i kinou kat-ta yo **kuruma$_i$-o**
Taro -Nom yesterday bought FP **car -Acc**
''Taro bought **a car** yesterday.''

c. Hanako-ga toshokan de hon-o Φ_i age-ta yo **Ken$_i$-ni**.
Hanako-Nom library in book-Acc gave FP **Ken-Dat.**
"Hanako gave a book **to Ken** in the library."

d. Φ_i Kinou tenisu-o si-ta yo, **Taro$_i$-wa**.
Yesterday tennis-Acc played FP **Taro-Top**
"**Taro** played tennis yesterday."

Non-referential NPs can occur in postverbal position as well.

In (ia), *kare/aitsu-ga* (''he/that fellow-Nom'') can be associated with *Taro-ga* (''Taro-Nom''), and in (ib), *sore-o* (''it-Acc'') can be linked with *ano kuruma-o* (''that car-Acc''). As will be shown in Chapter 4, the postverbal phrases in (i) are licensed by the licensing condition which holds true for postverbal elements in the JPVC. Thus, examples like (9) and (i) should be treated in the same manner (see Tanaka (2001)), although I will not discuss examples like (i) very much in this work.

[7] Using terms associated with movement such as dislocation, extraction and extraposition throughout this chapter does not imply that the relevant construction is derived by movement.

[8] In this section, Φ is used to mark the position associated with elements "moved" leftward or rightward, and identical subscripts indicate that the''moved'' elements correspond to Φ.

Quantified NP

(11) a. Φ_i Ki-ta yo, **daremo$_i$-ga**.
came FP **everyone-Nom**
"Everyone came."

Idiom chunks

b. Taro-ga Φ_i nage-ta yo, **saji$_i$-o.**
Taro-Nom throw-Past FP **spoon-o**
"Taro gave it up." ("Taro threw a spoon.")

Nonarguments such as genitive phrases, demonstratives and adjective phrases can appear in postverbal position:

(12) a. Hanako-ga hon-o yom-da yo, **Ken-no**. [Genitive]
Hanako Nom book Acc read FP **Ken Gen**
"Hanako read **Ken's** book."

b. Kinoo tsuini eega-o mi-ta yo, **ano**. [Determiner]
yesterday (I) finally movie-Acc saw FP **that**
" (I) finally saw **that** movie."

c. Hanako-ga kuruma-o kat-ta yo **sugoku ookii**. [Adjective]
Hanako Nom car -Acc bought FP **very big**
"Hanako bought a **very big** car."

(Shimojo (1995: 110))

The genitive phrase in (12a) is associated with the object *hon-o* ("book-Acc"). The demonstrative determiner in (12b) modifies the direct object NP *eega-o* ("movie-Acc"). The adjective phrase in (12c) describes the direct object NP *kuruma-o* ("car-Acc").

It should be noted that the modifier must precede the head noun when they both appear together to the left of the verb as shown in (13)-(15):

(13) a. Hanako-ga [$_{NP}$ Ken-no hon]-o yom-da yo.
Hanako-Nom Ken-Gen book-Acc read FP
"Hanako read Ken's book."

b.*Honako-ga [$_{NP}$ hon]-o **Ken-no** yom-da yo.
Hanako-Nom book-Acc **Ken-Gen** read FP
Lit. "Hanako read book **Ken's**."

(14) a. Kinoo tsuini [$_{NP}$ ano eega]-o mi-ta yo.
Yesterday (I) finally that movie-Acc saw FP
"(I) finally saw that movie."
b.*Kinoo tsuini [$_{NP}$ eega]-o **ano** mi-ta yo.
yesterday (I) finally movie-Acc **that** saw FP
Lit. "(I) finally saw movie **that**."

(15) a. [$_{NP}$ Sugoku ookii kuruma]-o kat-ta yo.
(I) very big car -Acc bought FP
" I bought a very big car."
b. * [$_{NP}$ Kuruma]-o **sugoku ookii** kat-ta yo.
(I) car -Acc **very big** bought FP
Lit. "I bought a car **very big**."

Adverbial phrases can also undergo the JPVC as shown below:

(16) a. kokode neko-ga nete-iru yo, **san-biki**. [Quantifier]
Here cat -Nom sleeping FP **three-classifier**
"**Three** cats are sleeping here."
b. Suzuki-san-ga kono hako-o tukuri-mashita yo, **kinou**. [Adverb]
Suzuki-Mr-Nom this box -Acc made FP **yesterday.**
"Mr Suzuki made this box **yesterday**"
c. Suzuki-san-ga kono hako-o tukuri-mashita yo, **tegiwayoku**. [Adverb]
Suzuki-Mr-Nom this box-Acc made FP **efficiently**
"Mr Suzuki made this box **efficiently**"
d. Taro-wa kinou kono hon -o yom-da yo, **ano toshokan de**. [PP]
Taro-Top yesterday this book-Acc read FP, **that library in**
"Taro read this book **in that library** yesterday."

The example in (16a) indicates that floating quantifiers may appear after the verb. The examples in (16b) and (16c) show that adverbs can be put in the postverbal position. In (16d), the adpositional phrase appears postverbally.

As (17) and (18) show, clauses can appear in postverbal position, although generally, relative clauses must appear immediately before the relevant nouns as shown in (19a-b), and adjunct clauses usually precede the main clause as the example in (19c) shows:

Complement clauses

(17) a. Taro-wa Φ_i shittei-ta yo, [$_{CP}$ **Hanako-ga kokoni ki-tat te**]$_i$.
Taro-Top knew FP **Hanako-Nom here came Comp**
"Taro knew **that Hanako came here**."

b. Φ_i uwasa-o kii-ta yo, [$_{CP}$ **Taro-ga ano ie-o kat-ta toiu**]$_i$.
(I) rumour-Acc heard FP, **Taro-Nom that house-Acc bought Comp**
"I heard the rumour that **Taro bought that house**."

c. Φ_i uwasa-ga hirogat-ta yo, [$_{CP}$ **Taro-ga ano ie-o kat-ta toiu**]$_i$.
rumor-Nom spread FP, **Taro-Nom that house-Acc bought Comp**
"The rumour spread **that Taro bought that house**."

Relative and adjunct clauses

(18) a. kuruma-o untensi-ta yo, **[**$_{CP}$ **kinou kat-ta]**
(I) car -Acc drove FP **yesterday (I) bought**
"I drove the car **that I bought yesterday**."

b. ichinichiju heya-ni i-ta yo, **[**$_{CP}$ **tukare-ta node]**.
(I) all day room in stayedt FP **(I) tired-Past because**
"I stayed in my room all day **because I was tired**."

(19) a. [$_{NP}$ **[Taro-ga kat-ta]** kuruma]
Taro-Nom bought car
"the car **that Taro bought**"

b. *[$_{NP}$ kuruma **[Taro-ga kat-ta]**]
car **Taro-Nom bought**

c. **[**$_{CP}$ **Tsukare-ta node]**, ichinichiju heya-ni i-ta.
(I) tired-Past because (I) all day room in stayed
''I stayed in my room all day because I was tired.''

The first conjunct in coordinate NPs can appear postverbally, accompanied by *to* ("and"), but the second one cannot (see also Sells (1999: 3)):

(20) a. Watasi-wa [Φ_i ringo-o] kesa tabe-ta yo **mikan$_i$-to.** [ConjP]
I -Top apple-Acc this morning ate FP **orange and**
Lit. "I ate Φ an apple this morning **an orange and**."
(I ate an apple and an orange this morning.)

b.*Watasi-wa [mikan-to Φ_i] kesa tabe-ta yo **ringo$_i$-o**.
I -Top orange and this morning ate FP **apple-Acc**
Lit. "I ate an orange and Φ this moring, **an apple**."

It should be noted that postverbal elements have split antecedents:

(21) Taro$_i$-wa ringo-o Hanako$_j$-wa mikan-o tabe-ta yo,
Taro-Top apple-Acc (and) Hanako-Top orange-Acc ate
kinoo karera$_{i+j}$-ga kat-ta.
yesterday they bought
''Taro ate an apple and Hanako ate an orange, **which they bought yesterday.**"

In (21), both *ringo-o* (''apple-Acc'') and *mikan-o* (''orange-Acc'') can be the antecedents of the postverbal relative clause at the same time.

2.2.4.1.2 Multiple postverbal elements

More than one constituent may appear in postverbal position as shown in (22), where postverbal elements are freely ordered:

(22) a. Taro-ga Kenji-ni hon-o age-ta.
Taro-Nom Kenji-Dat book-Acc gave
"Taro gave a book to Kenji."
b. Φ_i Φ_j Hon-o age-ta yo **Taro-ga$_i$ Kenji-ni$_j$ /Kenji-ni$_j$ Taro-ga$_i$**
book-Acc gave FP **Taro-Nom Kenji-Dat./ Kenji-Dat Taro-Nom**
Lit. "Φ_i Φ_j gave a book, **Taro$_i$ to Kenji$_j$/to Kenji$_j$ Taro$_i$.**"
c. Φ_i Kenji-ni Φ_j age-ta yo **Taro-ga$_i$ hon-o$_j$ /hon-o$_j$ Taro-ga$_i$**.
Kenji-Dat gave FP **Taro-Nom book-Acc/book-Acc Taro-Nom**
Lit. "Φ_i gave Φ_j to Kenji, **Taro$_i$ a book$_j$/ a book$_j$ Taro$_i$**."
d. Φ_i Φ_j Φ_k age-ta yo **Taro-ga$_i$ Kenji-ni$_j$ hon-o$_k$ /**
gave FP**Taro-Nom Kenji-Dat book-Acc/**
Hon-o$_k$ Kenji-ni$_j$ Taro-ga$_i$
book-Acc Kenji-Dat Taro-Nom
Lit. "Φ_i gave Φ_j Φ_k, **Taro$_i$ to Kenji$_j$ a book$_k$**."

There is a different type of multiple postverbal element:

(23) Taro-ga Φ_i itte-ta yo, [**Mari-ga Φ_j sagashi-teru -tte**]$_i$ **anata-no-koto-o$_j$**
Taro-Nom said FP Mari-Nom looking for -Comp you-Acc
"Taro said that Mari was looking for you."
(Soshi and Hagiwara (2004: 414))

In (23), *anata-no koto-o* (''you-Acc'') appears to be extracted out of the postverbal clause which is associated with the verb in the matrix clause.

2.2.4.1.3 What elements cannot appear in postverbal position?

It is impossible to separate case particles like *-o* ("accusative") or the postpositions like *-de* ("in") from the associated NPs as shown in (24) and (25b), although whole postpositional phrases (PP) can be put in postverbal position as given in (25a) (see also (18d)):

(24) a *Taro-ga Φ_i**-o** tabe-ta yo, **susi$_i$**.
Taro-Nom **-Acc** ate FP **sushi**
"Taro ate **sushi**."
b. *Taro-ga **susi** Φ_i tabe-ta yo, **-o$_i$** .
Taro-Nom **suhi** ate FP **-Acc**.

(25) a. Taro-ga hon-o yon-da, **toshokan-de**
Taro-Nom book-Acc read **library in**
"Taro read a book **in the library**."
b.* Taro-ga -de hon -o yon-da, **toshokan**
Taro-Nom in book-Acc read **library**

As the examples in (26) show, it is impossible to place elements in the postverbal position while stranding modifiers:

(26) a. * [takai Φ_i] katta yo, **ie$_i$-o**
(I) expensive bought FP **house-Acc**
"I bought an expensive **house**."
b.. *[$_{NP}$ Totemo ie]-o katta yo, **takai**
(I) very house-Acc bought FP **expensive**
Lit. "I bought a very house, **expensive**."

In (26a), *ie* (“house”) cannot be construed as being modified by *takai* (“expensive”). Likewise in (26b), *takai* (‘‘expensive’) cannot be associated with *totemo* (‘‘very’’).

As Shimojo (1995: 115) points out, an element from within a conjunct cannot occupy the postverbal position (cf. (20a)):

(27) * [$_{NP}$[$_{ConjP}$ [$_{NP}$ France-no [$_{N}$ sizing]] to [$_{NP}$ Φ_i [$_{N}$ isha]]]-ga shoo-o morat-ta
France-Gen poet and doctor -Nom award-Acc received
no yo, **America$_i$-no**
nominaliser FP **America -Gen**
Lit. “A French poet and a Φ doctor received the awards, **American**.”

In (27), it is impossible to interpret *America-no* (“American”) as modifying *isha* (“doctor”).

Note that Kuno (1978b) claims that neither wh-words like *nani* (“what”) nor negative polarity items (NPIs) like *sika* (“only”) can be found in postverbal position as shown in (28b) and (29b), respectively:[9]

(28) a. Kimi nani taberu.
you what eat
“What are you going to eat?”
b. *Kimi Φ_i taberu, **nani$_i$**.
you eat **what**
Lit. “Are you going eat **what**?”

(Kuno (1978b: 63))

(29) a. Boku nihon ni sando sika itta koto ga nai.
I Japan to thrice only went experience have-not
“I have been to Japan only three times.”
b. *Boku nihon ni itta koto ga nai, **sando sika**
I Japan to went experience have-not, **thrice only**

(Kuno (1978b: 63))

However, if particles are attached to the NPs in (28b), the acceptability is improved, as shown in (30), where *kimi* (‘‘you’’) is marked with the topic particle *-wa*, *nani*

[9] Mahajan (1997: 209n9) points out that in Hindi, it is very difficult for wh-phrasese to occupy the postverbal position.

(‘‘what’’) is marked with an accusative particle *-o*, and a question particle *-no* appears:

(30) Kimi-wa Φ_i taberu no, ***nani$_i$-o***.
you-Top eat Q **what-Acc**

Furthermore, other types of NPIs such as *daremo* (“anyone”) can appear postverbally:

(31) Φ_i ko nakat-ta yo, **daremo$_i$**.
come Neg-Past FP **anyone**
“No one came.”

The acceptability of the examples in (30) and (31) indicates that Kuno’s claim is untenable.

2.2.4.2 Syntactic properties of the JPVC

In this subsection, I will discuss some restrictions on the JPVC other than those described in the previous subsection. In other words, I will try to reveal syntactic relationships between postverbal elements and the relevant clauses.

2.2.4.2.1 Subordinate clauses

The JPVC cannot appear within a subordinate clause (see Kuno (1978b: 64); Kuroda (2005: 110-113)):

(32) a.*[$_{CP}$John-ga Φ_i tabe-ta **susi$_i$ -o** koto] -wa hontoo da.
John-Nom eat-Past sushi-Acc Comp -Top true is
“That John ate **sushi** is true.”
b. *[$_{CP}$ Φ_i susi-o tabe-ta **John$_i$-ga** koto] -wa hontoo da.
sushi-Acc eat-Past John-Nom Comp -Top true is
“That **John** ate sushi is true.”
c.* Jiro-wa [$_{CP}$ Taro-ga susi-o tabe-ta **kinou** no]-o sitteiru.
Jiro-Top Taro-Nom sushi-Acc eat-Past **yesterday** Comp -Acc know
‘‘Jiro knows that Taro ate sushi yesterday.’’

(33) *Chichi-ga Φ_i kat-ta yo, **kono ie$_i$-o** node, wareware-wa sengetsu
Father-Nom bought FP **this house-Acc** because we -Top last month
hikkosi-ta.
move-in-Past
"Because our father bought **this house**, we moved in last month."

The examples in (32) and (33) show that in subordinate clauses, phrases cannot come after the verbal elements.[10]

Note that clause-internal scrambling is possible within the subordinate clause as shown below:

(34) a. [**Sono hon$_i$ -o** John-ga Mary-ni Φ_i wastashi-ta] no -wa hushigida.
that book -Acc John-Nom Mary-Dat handed Comp-TOP surprising
Lit. "That **that book** John handed Φ to Mary is surprising."
b. **Kono ie$_i$-o** chichi-ga Φ_i kat-ta node, wareware-wa sengetu
This house-Acc father-Nom bought because we -Top last month
hikkosita.
moved in
Lit. "Because **this house** our father bought Φ, we moved in last month."

In each example in (34), the accusative Case marked NP is moved leftward within the subordinate clause.

2.2.4.2.2 Locality effects

It has been observed (e.g., Endo (1989); Tanaka (2001)) that JPVCs show locality effects; postverbal elements after matrix verbs cannot be associated with elements within relative clauses or adjunct clauses as shown in (35):

[10] Whitman (2000: 465) points out that some complementizers must be adjacent to a verbal or adjectival head, and some can be stranded, and hence, that the example in (i) will be improved by changing a complementise *no* into *tte yuu* as shown in (ii):

(i) *[Dress kat-ta **Ginza-de** no]-wa tasika da.
Dress bought Ginza-at Comp-Top certain is
"It is certain that someone bought a dress **on the Ginza**."

(ii) [[Dress kat-ta **Ginza-de**, tte yuu] uwasa]-o ki-ita.
Dress bought Ginza-at Comp rumour-Acc heard
"(I) heard the rumour that someone bought a dress **on the Ginza**."

(35) a. *?[$_{NP}$[$_{CP}$ kinoo Φ_i katta] dress]-o mita no **Mari$_i$-ga**
yesterday bought dress -Acc saw FP **Mari-Nom**
"I saw the dress **Mari** bought yesterday."
b. *[$_{PP}\Phi_i$ Mita ato-de], piano-o rensyuu-suru yo, **terebi$_i$-o**.
(I) watched after piano-Acc practice FP **TV-Acc**
"(I) will practice piano after (I) watch **TV**."
(Endo (1989: 111, 142))

In (35a), the interpretation of *Mari-ga* ("Mari-Nom") as the subject in the relative clause is almost impossible. In (35b), it is very difficult to interpret the postverbal element *terebi-o* ("TV-Acc") as the object in the adjunct clause.

The following example also indicates that JPVCs display locality effects:

(36) *? [Φ_i Hanako-o aisiteiru koto]-o sitteiru yo, **Taro$_i$-ga**
(I) Hanako-Acc love that -Acc know FP **Taro-Nom**
''I know that **Taro** loves Hanako.''

In (36), *Taro-ga* (''Taro-Nom') is difficult to associate with the subject position in the complement clause.

Unlike the case of (35) and (36), however, some JPVCs do not display locality effects:

(37) a. ? [$_{CP}$ Φ_i Hanako-o aisiteiru koto]-ga hontoo da yo, **Taro$_i$-ga**
Hanako-Acc love that -Nom true is FP **Taro-Nom**
''That **Taro** loves Hanako is true.''
b. [$_{NP}$[$_{CP}$ Taro-ga Φ_i aisiteiru toiu] uwasa]-ga hontou da yo, **Hanako$_i$-o.**
Taro-Nom love Comp rumour-Nom true is FP **Hanako-Acc**
''The rumour that Taro loves **Hanako** is true.''
c. [$_{NP}$[$_{CP}$ [$_{TP}$ Φ_i sonkeisiteiru]]gakuseitati-ga fueteimasu yo, **ano sensei$_i$-o**.
respect students -Nom increase FP **that teacher-Acc**
"Students who respect **that teacher** have increased."

In (37a), *Taro-ga* ("Taro-Nom") can be interpreted as the argument of *aisiteiru* ("love") in the complement clause. Likewise in (37b), *Hanako-o* ("Hanako-Acc") can be construed as the argument of *aisiteiru* ("love") within the complex NP. In (37c), *ano sensei-o* (''that teacher-Acc'') is easy to associate with the verb *sonkeisiteiru* (''respect'') inside the relative clause.

I will return to locality effects in the JPVC in Chapter 4, where I will claim that such locality effects can follow from some parsing strategies.

2.2.4.3 Scope ambiguity

It has been observed that clause-internal scrambling changes quantifier scope interpretation (e.g., Hoji (1987: 182)):

(38) Dareka-ga subete-no-hon-o yom-da.
someone-Nom all book-Acc read
"Someone read all books."
someone >> all, *all>>someone[11]

(39) **Subete-no-hon$_i$-o** dareka-ga Φ_i yom-da.
all **book-Acc** someone-Nom read
someone>> all, all>>someone

In (38), *dareka* ("someone") takes scope over *subete-no hon* ("all books"), whereas in (39), where the object is scrambled leftward to the initial position of the clause, a scope ambiguity is observed; *subete-no hon* ("all books") can take scope over *dareka* ("someone") as well.

Now let us turn to the JPVC.

(40) a. Dareka-ga Φ yom-da yo, **subete-no-hon-o**.
someone-Nom read FP, **all** **book-Acc**
someone>> all, all>>someone
b. Φ Subete-no-hon-o yom-da yo, **dareka-ga**.
all book-Acc read FP, **someone-Nom**
someone>> all, ??all>>someone

In (40a), either *dareka* ("someone") or *subete-no-hon* ("all books") may take scope over the other. Thus, (40a) is ambiguous with respect to scope. In (40b), however, *dareka* ("someone") preferentially takes scope over *subeteno-hon* ("all books"). That is, *subeteno-hon* is more difficult to interpret as taking wide scope than *dareka*. I will return to the preferred reading of a scope ambiguity in Chapter 4.

[11] $\alpha>>\beta$ indicates that α takes scope over β.

2.2.4.4 Two types of JPVCs

Some researchers (Endo (1989); Kaiser (1999); Sells (1999); Shimojo (1995); Whitman (2000), among others) point out that there are two types of JPVCs: one type has an intervening pause between the end of a main clause and a postverbal element, and the other type does not have such an intervening pause. The former is called "afterthought construction", which is different from the latter systematically (cf. Kuno (1978b)). Whitman (2000: 449) observes that the example in (41a) can be improved for many native speakers of Japanese by inserting an interjection such as *hora* ("you know") before the postverbal element as in (41b):

(41) a.*?[[Kono aida tabe-ta] ebi-wa] oisi-katta ne, **ano resutoran-de**.
this interval ate shrimp-Top delicious FP **that restaurant at**
"The shrimp that we ate the other day **at that restaurant** were delicious"
b. [[Kono aida tabe-ta] ebi-wa] oisi-katta ne, hora, **ano resutoran-de**.
this interval ate shrimp-Top delicious FP you know **that restaurant at**
(Whitman (2000: 448,450))

Grosz and Ziv (1996) also emphasise the importance of distinguishing between dislocated elements in Right Dislocation constructions (see section 2.3.3) and afterthoughts in English and Hebrew. They point out that the Right Dislocation construction shows locality effects in (42b), but the afterthought construction does not in (43):

(42) a. The story that he_i told us $Bill_i$ was very interesting.
b.*The story that he_i told us was interesting, $Bill_i$. (if Bill≠vocative)
(Grosz and Ziv (1996: 4))

(43) Remember they/the two of them were telling us all sorts of stories?
Well, the story that he_i told us was very interesting, $Bill_i$, I mean.
(Grosz and Ziv (1996: 4))

Taken together, it seems to be important to make a distinction between two types of JPVCs. This thesis focuses on JPVCs without any elements intervening between postverbal phrases and verbal elements.[12]

[12] It seems to be difficutlt to distinguish between the two types when there are no overt elements intervening between main verbal elements and postverbal phrases, because there is no objective

2.2.4.5 Summary

Let me summarise the facts in 2.2.4 in table 1.

Construction / Properties	JPVC	Examples
Nominative (Subject)	YES	(9), (10a)
Accusative (Direct Object)	YES	(10b)
Dative (Indirect Object)	YES	(10c)
Topic NP	YES	(10d)
Non-referential NP	YES	(10)
Genitive NP	YES	(12a)
Demonstrative determiner	YES	(12b)
Adjective phrase	YES	(12c)
Floating quantifier	YES	(16a)
Adverb	YES	(16b-c)
PP	YES	(16d)
Complement Clause	YES	(17)
Non-complement clause	YES	(18)
The first conjunct	YES	(20a)
Split antecedent	YES	(21)
Multiple postposing	YES	(22),(23)
Case-particle	NO	(24b)
Postposition stranding	NO	(25b)
Modifier stranding	NO	(26)
Extraction from within a conjunct	NO	(27)
Wh-word	YES	(30)
NPI	YES	(31)
Within the subordinate clause	NO	(32),(33)
Locality effects	NO	(35), (36)
Locality effects	YES	(37)
Scope ambiguity	YES	(40a)
Scope ambiguity	NO	(40b)

Table 1

criterion by which the length of pause is measured.

2.3 Rightward movement phenomena in English

In this section, I will focus on the English constructions called Heavy NP Shift, Extraposition from NP and Right Dislocation.

2.3.1 Heavy NP Shift

In this subsection, I will discuss the Heavy NP Shift (HNPS) construction. This construction is often considered to be derived by an operation shifting a "heavy" element to the final position of the clause as in (44), where *Φ* indicates the position in which the "shifted NP" originates:

(44) Harry put *Φ* on this table **the new Ming vase he'd bought.**

(Pesetsky (1995: 249))

2.3.1.1 Subject position in the tensed clause

It is impossible to place the subject NP in a tensed clause to the end of the clause as shown in (45):

(45) a. * *Φ* walked into the room **a man with long blond hair**.

(Rochemont and Culicover (1990: 117))

b. *John said that *Φ* came to the party **several old high school friends**.

(Rochemont (1998: 355))

However, if *there* is inserted in the subject position, the sentences become acceptable:

(46) a. There walked into the room **a man with long blond hair**.

(Rochemont and Culicover (1990: 116)).

b. There visited us last night **a large group of people who travelled all the way from India**.

(Chomsky (1995: 343))

It may be that *there* insertion in this case is a kind of resumptive pronoun strategy, although the question would arise why *there* is used instead of pronouns such as *it*.

2.3.1.2 Subject position in the non-tensed clause

Rightward extraction of an NP from the subject position of a small clause is possible as shown in (47):

(47) a. I consider *Φ* stupid **anyone who would support a Socialist bid for power**.

b. I saw *Φ* leaving the room last night **a man with long bond hair**.

(Rochemont and Culicover (1990: 126, 191n38)

c. I would consider *Φ* intelligent **anyone capable of understanding Gödel's completeness proof**.

(Chomsky (1981: 70))

Exceptional Case Marking (ECM) Construction also allows the embedded subject to undergo HNPS as in (48):

(48) a. ?I expect *Φ* to win the race **the horse that is ridden by the best jockey**.

(Rochemont and Culicover (1990: 126))

b. John will believe *Φ* to be intelligent **all the students who can solve this problem**.

(Kuno & Takami (1993: 152))

c. John considers *Φ* to be intelligent **all the students in his class**.

(Kayne (1994: 150n11)

d. They'd believe *Φ* to be foolish **any candidate who would take the trouble to run in every primary**.

(Chomsky (1981: 70))

Furthermore, the subject of a complement clause of *want* can be shifted rightward:[13]

(49) I want *Φ* to come early **everyone who is in the front row**.

(Rochemont (1992: 382))

2.3.1.3 Locality effects

[13] There seem to be individual differences in acceptability of examples like (49). Chosmky (1981: 70) for example does not accept the example in (i):

(i)*They'd want *Φ* to win **any candidate who would take the trouble to run in every primary**.

HNPS is allowed within a subordinate clause, but it obeys the Right Roof Constraint, which hypothesises that an element cannot move rightward out of the clause in which it is contained (Ross (1986: 179)):

(50) a. [$_{CP}$That they elected *Φ* president **the man who was absolutely incompetent**] was obvious.

b.*[$_{CP}$That they elected *Φ* president] was obvious **the man who was absolutely incompetent**.

(Kuno (1978b: 61))

c. [$_{CP}$That John sent *Φ* to his mother **the money you wanted him to give us**] is understandable.

d.*[$_{CP}$That John sent *Φ* to his mother] is understandable **the money you wanted him to give us**.

(McCawley (1998: 529))

e. *Sue claimed [$_{CP}$ that she will give *Φ* to Mary] yesterday **a big book**.

(Pesetsky (1995: 249))

f.*It was believed [$_{CP}$ that she bought *Φ* for her mother] by everyone, **the ornate gold ring**.

(Rochemont and Culicover (1990: 136))

It is also impossible to apply HNPS to the object of a preposition, although leftward movement in English permits preposition stranding:

(51) a. *He bargained [$_{PP}$ with *Φ*]about wages **three senior officials**.

b. *She flew off [$_{PP}$ to *Φ*]after the semester **the oldest city in Mongolia**.

c. Who$_i$ did he bargain [$_{PP}$ with *Φ*$_i$] about wages?

d. Which city$_i$ did she fly off [$_{PP}$ to *Φ*$_i$] after the semester?

(Larson (1989: 2-3))

2.3.1.4 Goal θ-role

As Pesetsky (1995: 259-260) points out, an argument bearing a Goal θ-role without a preposition *to* cannot be shifted rightward:

(52) a.* Mary gave *Φ* a book **every student who didn't have one**.

b.*Sue informed *Φ* about the kids **her favourite uncle from Cleveland**.

c.??John helped *Φ* with the homework **all the students who came to him**.

d.??Harry confused Φ_i with Artur **the once-famous composer Anton Rubinstein**.

(Pesetsky (1995: 259-260))

2.3.1.5 Idiom Chunks

Some idiom chunks may be separated from other elements by A-movement (e.g., passivisation, raising) without breaking the idiomatic meaning, but not by A'-movement (e.g., wh-movement):[14]

(53) a. Birds of a feather are likely to flock together
b. *How likely to flock together are birds of a feather?
c. [A great deal of attention]$_i$ was claimed to have been paid to that (*but it$_i$ wasn't paid to that.)
d. *How likely to have been paid to that was a great deal of attention?

(Postal (nd.): 22-23)

Like wh-movement, HNPS cannot move part of an idiom:

(54) a. *She believes Φ to flock together **birds of a feather**.
b. *Ernest believes Φ to have been paid to that **a great deal of attention**.

(Postal (nd.): 22-23)

At first sight, it seems that the examples in (54) are unacceptable because the shifted NPs are not "heavy". As far as the literal interpretation is concerned, however, "heaviness is not crucial. As Postal (nd.: 23) points out, the literal reading is possible in an example like (55b), where stress is placed on the shifted NP.

(55) a. Sonia believes the cat to be out of the bag.
b. Sonia believes Φ to be out of the bag **the cat**. (≠ Sonia believes the secret is revealed.)

(Adapted from Postal (nd.: 23))

[14] Some idioms cannot be separated by an operation such as passivisation; e.g. *the bucket was kicked* does not imply death (Chomsky (1981: 146n94). See also Nunberg, Sag and Wasow (1994) for more details.

2.3.1.6 Semantic effects

HNPS has some effect on semantic interpretation. Let us compare (56) with (57):

(56) a. *We gave *Φ* to him$_i$ on Friday **John$_i$'s brand-new toy**.
b. We gave *Φ* to them$_i$ at the interviews **copies of reports on each other$_i$**.

c. Bill heard *Φ* from each committee member$_i$ on Friday **a report on his$_i$ activities**.
d. Tom threw *Φ* to none of these people on Tuesday **any set of keys that had "Do Not Copy" stamped on them**.

Adapted from (Pesetsky (1995: 266))

(57) a. We gave John$_i$'s brand-new toy to him$_i$ on Friday.
b.*We gave copies of reports on each other$_i$ to them$_i$ at the interviews.
c. *Bill heard a report on his$_i$ activities from each committee member$_i$ on Friday.
d. *Tom threw any set of keys that had "Do Not Copy" stamped on them to none of these people on Tuesday.

In (56a), *John* cannot be the antecedent of *him*, whereas in (57a), it can. In (56b), the anaphor *each other* can be coreferent with *them*, but in (57b), it cannot. In (56c), the pronoun *his* can have a bound-variable interpretation. The pronoun *his* in (57c), on the other hand, cannot be given a bound-variable interpretation. In (56d), the negative polarity item *any* is licensed by the negative expression *none*, while the negative polarity item in (57d) is not. Accordingly, NHPS changes the binding relation.

2.3.1.7 Referentiality

Non-referential NPs can undergo HNPS:

(58) Tom threw *Φ* to none of these people on Tuesday **any set of keys that had "Do Not Copy" stamped on them**. [= (56d)]

Any set of keys, which is not referential, is shifted from the object position.

2.3.2 Extraposition from NP

The operation which moves a part of NP to the end of the sentence is called "Extraposition from NP". A relative clause may be extracted out of the subject NP, as shown in (59b):[15]

(59) a. A man who had blond hair came into the room.
b. A man *Φ* came into the room **who had blond hair**.

In (59b), *who had blond hair* can be associated with *a man*.

2.3.2.1 Syntactic categories

Extraposition from NP (henceforth EX) can apply to CP, PP, TP, AP, and NP, as shown in (60):

(60) a. Something *Φ* just happened **that you should know about**. [CP]
(Kayne (1994: 117)
b. A review *Φ* appeared yesterday **about French cooking**. [PP]
(Akmajian (1975: 177))
c. A knife *Φ* has been developed for people **to peel grapes with**. [TP]
(McCawley (1998: 440))
d. I want to see someone *Φ* at every window **armed and alert**. [AP]
(Stucky (1987: 389))
e. I pressed a trigger and a hole *Φ* appeared in his forehead **the size of a quarter**. [NP]
(Bache and Nielsen (1997: 156) cited in (Hasegawa et al. (2000: 409n1)))

Note that many previous studies seem to deal mainly with extraposed relative clauses and PPs.

2.3.2.2 Extraction out of subject positions

Both complements and adjuncts within subject positions can undergo EX:

[15] *Φ* indicates a position which is associated with extraposed phrases.

Complement (moved elements)

(61) a. The neutralisation *Φ* was announced yesterday **of the enemy's attack**.

b. The rumour *Φ* spread **that they had got married**.

Adjunct (moved elements)

(62) a. A man *Φ* appeared **with blond hair**.

b. A man *Φ* appeared **who I am going to meet tomorrow**.

In the above examples, the extraposed elements can be associated with the relevant elements in subject position.

2.3.2.3 Extraction out of object positions

It is possible to extrapose an element out of object position, whether the element is a complement or an adjunct:

Complement (moved elements)

(63) a. I saw a picture *Φ* yesterday **of the museum**.

b. I heard a similar rumour *Φ* yesterday **that you are quitting**.

(Fox and Nissenbaum (1999: 138))

Adjunct (moved elements)

(64) a. I saw the picture *Φ* yesterday **from the museum**.

b. I heard the same rumour *Φ* yesterday **that you were spreading**.

(Fox and Nissenbaum (1999: 138))

It is also possible to apply EX to part of the object of a preposition:

(65) John is going to talk [$_{PP}$ to someone *Φ*] tomorrow **who he has a lot of faith in**.

(Kayne (1994: 126))

However, it is impossible to extrapose a phrase from within indirect object position as shown in (66):

(66) a. *I sent a man *Φ* an interesting book yesterday **with blond hair**.

b.*I gave a man *Φ* an interesting book yesterday **with green eyes**.

Cf. a. I sent Mary a book *Φ* yesterday **by an American novelist**.

b. I gave Mary a puppy *Φ* yesterday **with big cute ears**.

(Takami (1990: 198))

2.3.2.4 Wh-word/Topicalised position

Elements can be extraposed out of fronted wh-phrases and topicalised phrases:

(67) a. What's he wheeling in here **that looks like a baby-buggy for a baby from Mars**?

(*The Milk Train Doesn't Stop Here Anymore,* p. 141.)[16]

b. Lots of bad habits you boys picked up **that you'll have to get over**.[17]

(Kajita (1978: 348))

In (67a), the extraposed relative clause can be linked with *what*. Likewise in (67b), the extraposed phrase can be associated with *lots of bad habits*.

2.3.2.5 Locality effects

English EX obeys the Right Roof Constraint:

(68) a.*[$_{Ca}$that a review *Φ* appeared] was surprising **of the book**.

(Kuno (1978: 61))

b. *they announced [$_{CP}$ that Mary would claim that Bill wanted to visit someone *Φ*] on the radio **who would tell funny stories**.

(Kroch and Joshi (1987: 131))

In (68a), *a review* cannot be associated with *of the book*, which appears outside an embedded clause which contains *Φ*. Similarly, in (68b), *someone* cannot be linked with *who would tell funny stories*, which occurs outside the complement clause which contains *Φ*.

The example in (69b) also indicates that EX constructions in English display locality effects:

(69) a. [$_{NP}$A book *Φ*] was recently published **about collectors of jewels**.

b. *[$_{NP}$ A book [$_{PP}$ about *collectors Φ*]] was recently published **of jewels**.

(McCawley (1998: 531))

[16] Williams, T (1976) *The Milk Train Doesn't Stop Here Anymore*, Penguin Books.
[17] Crysmann (2005: 77) claims that "in English, extraposition from topicalised phrases is barred."

In (69a), *about collectors of jewels* can be construed as modifying *a book*. As for (68b), *of jewels* cannot be interpreted as modifying *collectors*, which is contained in the NP [$_{NP}$ *a book* [$_{PP}$ *about collectors*]].

I will return to the locality effects in the EX construction in English in Chapter 5, where I will claim that such effects can follow from parsing strategies.

2.3.2.6 The transitive construction

EX from the subject is more restricted than EX from the object:

(70) a. John met a man *Φ* yesterday **with three arms**.
b.* A man *Φ* met John yesterday **with three arms**.
(Takonai and Adachi (2005: 15))

The difference in acceptability between the examples in (70) indicates that elements in the subject position of a transitive verb cannot be associated with extraposed phrases.

2.3.2.7 Semantic effects

EX bleeds scope ambiguity:

(71) a. The owner of every car on the block will be fined.
b. The owner *Φ* will be fined **of every car on the block**.
(Guéron (1980: 649))

(72) a . For all x, x a car, the owner of x will be fined.
b. That individual x, such that x owns every car, will be fined.
(Guéron (1980: 649))

According to Guéron (1980), (71a) is ambiguous, whereas (71b) is not. That is, the example which undergoes EX can be only interpreted as (72a), where *every car* has wide scope.

There is another piece of evidence to support the idea that EX interacts with scope interpretation. The examples in (73) and (74) have different interpretations with respect to the interpretation of *even*.

(73) Men who don't care for her will even date her.

(74) Men *Φ* will even date her **who don't care for her**.

(Muraki and Saito (1978: 189))

The first example is used in a context as in (73'), while the second one is used in a context as in (74'):

(73') Men who don't care for her will do many things to make her angry—they will even date her.

(74') She is so beautiful that many men will date her—even men who don't care for her.

(Muraki and Saito (1978: 189))

EX can therefore change scope interpretation.[18]

2.3.2.8 Asymmetry between complement and adjunct[19]

There is a distinction between adjunct extraposition and complement extraposition.[20]

Adjunct:

(75) a. I gave him$_i$ a picture *Φ* yesterday **from John's$_i$ collection**.

cf. ??/*I gave him$_i$ a picture **from John's$_i$ collection** yesterday.

b. I gave him$_i$ an argument *Φ* yesterday **that supports John's$_i$ theory**.

cf. ??/* I gave him$_i$ an argument **that supports John's$_i$ theor**y yesterday.

(Fox and Nissenbaum (1999: 139))

Complement:

(76) a. ??/*I gave him$_i$ a picture *Φ* yesterday **of John's$_i$ mother**.

cf. ??/*I gave him$_i$ a picture **of John's$_i$ mother** yesterday.

b.??/*I gave him$_i$ an argument *Φ* yesterday **that this sentence supports John$_i$'s theory**.

cf..??/*I gave him$_i$ an argument **that this sentence supports John$_i$'s theory** yesterday.

[18] Caroline Heycock, in personal communication, pointed out to me that for her the example in (73) is ambiguous. If (73) is ambiguous as well as (71a), the argument here will be more convincing because it is consistent with the claim that EX bleeds ambiguity.

[19] The examples in (75) also indicate that EX has semantic effects.

[20] There seem to be individual differences in acceptability of this type of example.

(Fox and Nissenbaum (1999: 139))

As the examples in (75) show, the adjunct EX construction has a binding relation different from the corresponding construction, but as (76) shows, the complement EX one does not. This contrast shows that the adjuncts that undergo EX are semantically affected by EX, whereas the complements that undergo EX are not.

2.3.2.9 Multiple extraposition

More than one phrase can be extraposed from the same NP:

(77) a. And then, a man *Φ Φ* suddenly appeared at the door **from the CIA whom I had seen the previous week**.
b. Can you give me the names of any newcomers *Φ Φ* as soon as possible **who have programming experience who are from either Norway or Sweden**?
(Stucky (1987: 392))

In (77a) and (77b), it is possible to associate the extraposed elements with the heads *man* and *newcomers*, respectively. [21]

2.3.2.10 Ordering restrictions on the extraposed phrases

When two constituents that have different antecedents undergo EX, EX obeys an ordering restriction:

(78) a. No one Φ_i puts things Φ_j in the sink **[that would block it]$_j$ [who wants to go on being a friend of mine]$_i$**
b.*No one Φ_i put things Φ_j in the sink **[who wants to go on being a friend of mine]$_i$ [that would block it]$_j$**
(Guéron (1980: 645n10))

The contrast in acceptability in (78) shows that the extraposed phrase which is associated with the object cannot follow the extraposed phrase which is linked with the subject, a nesting requirement. Note that this is not true of the JPVC (see (22)).

[21] Stucky (1987: 395) argues that "[t]he limits on the number of extraposed modifiers and the order they can appear in are, one could argue, not to be imposed by the grammar, but are artifacts of processing, much in the same way as the more familiar kinds of recursivity (e.g., *I said that Mary said that Bill reported that ...*) and center embedding have been treated in syntactic theory."

2.3.2.11 Split antecedents

A split antecedent is allowed for an extraposed relative clause, whereas it is not for an extraposed PP.

(79) a. A man *Φ* came in and a woman *Φ* went out **who were similar in all kinds of ways**.

(Gazdar (1981: 178))

b.* A man *Φ* came in and a woman *Φ* went out **from different countries**.

(Nakajima (1995: 24))

In (79a), both *man* and *woman* may be the antecedent of the extraposed clause at the same time, but in (79b), they cannot.

The split antecedent is subject to a parallelism requirement; multiple antecedents are not allowed for the extraposed relative clause if they are not in the same structural position:[22]

(80) * A man *Φ* met a woman *Φ* yesterday **who were similar**.

(Guéron (1980: 648))

In (80), *man* occupies the subject position but *woman* the object one.

Note that result clauses and comparative clauses are not subject to the parallelism requirement:

(81) a. So many people like so many pictures **that the show will go on for a week**.

b. More silly lectures have been given by more boring professors **than I would have expected**.

(Chomsky (1981: 81))

2.3.2.12 Others

[22] Kuno (1987) proposes the following constraint:

Parallel Interpretation Tendency: Parallel structures tend to be interpreted in a parallel fashion unless there is external pressure for non-parallel interpretations. (Kuno (1987: 7))

Kuno (1987: 11) argues further that ". . . a parallel interpretation tendency observable in language is attributable to a parallel interpretation tendency in cognitive processes in general (including visual process [e.g. Necker cubes]). If this is true, it might be that the [above] constraint . . . need not be stated in grammar but can be stated as a general constraint that applies to many cognitive processes."

There are other types of extraposition:

(82) a. I will tell Bill *Φ* on Friday **that the world is round**.

(Pesetsky (1995: 272))

b. Pat talked *Φ* about Sandy **to Chris**.

(Wasow and Arnold (2003: 119))

In (82a), the complement clause is shifted, and in (82b), the complement PP is moved. The former type of movement is sometimes called "heavy CP shift" and the latter "PP shift".

3.3 Right Dislocation

The Right Dislocation Construction (RDC) is a construction in which an argument appears in sentence-final position, leaving its canonical position filled by a pronoun which has to refer to the dislocated argument as shown in (83) and (84), where each pronoun is in italics and the relevant dislocated NP in boldface.

(83) a. *He* is real smart, **John**.

b. I don't want *it* anymore, **that**.

(84) a. *They* spoke to the janitor about that robbery yesterday, **the cops**.

b. The cops spoke to *him* about that robbery yesterday, **the janitor**.

c. The cops spoke to the janitor about *it* yesterday, **that robbery**.

(Ross (1986: 258))

In the following example, the dislocated phrases may not be coreferent with both *she* and *him*:

(85) ?? She_i spoke to him_j about that robbery yesterday, {**Mary$_i$ and John$_j$/the teachers from China$_{i+j}$**}

(Hasegawa et al. (2000: 474))

Non-referential NPs cannot be dislocated, as shown in (86).

(86) a. *Gwendolyn would like to meet *him*, **a linguist**.

b. **He* knows what I'm taking about, **only John**.

c.*We caught *them* that day, **many clams**.

d.**They* would agree with that, **few linguists**.

(Gundel (1974/1988: 130))

In (86a), the dislocated NP has a generic interpretation, and in (86b-d), all dislocated NPs are quantifiers.

The dislocated NP can appear inside an embedded clause except an embedded clause attached to an object:

(87) a. [If you see *him*, **that man**], call me right away.

b. [That *he*'s lived here all his life, **my father**], is well known to those cops.

c. [The girl who ate *it*, **the potato salad**], was rushed to the hospital.

(Gundel (1988: 132))

(88) a.*?John took [the girl who ate *it*, **the potato salad**], to the hospital.

b.*Bill gave [the boy *she* used to go out with, **his sister**], a dollar.

c.*I consider your claim that *he* is ahead in the polls, **McGovern**, to be unfounded.

d.*He wrote about Fred's meeting *her*, **Mary**, to his mother.

(Gundel (1988: 132-133))

There is no great difference between (87) and (88) in the sense that the RDC appears inside the subordinate clause. I will return to the contrast in acceptability between examples like (87) and (88) in Chapter 5.

Furthermore, the RDC displays the Right Roof Constraint effect, as shown below:

(89) a. *?[That *they* spoke to the janitor about that robbery yesterday] is terrible, **the cops**.

b.*?[That the cops to the janitor about *it* yesterday is terrible,] **that robbery**.

(Ross (1986:258))

In (89), each of the dislocated NPs occurs outside the embedded clause where the relevant pronoun appears. I will return to the locality effects displayed in the English RDC in Chapter 5 as well.

2.4 Rightward movement phenomena in other languages

In this section, I will give a brief description of rightward movement phenomena in Dutch, German, Italian, and Turkish.

2.4.1 Dutch

Following Groos and Van Riemsdijk (1981), I assume that Dutch is underlyingly verb final; the verb is final except when the finite verb appears in second position in a root clause.

As the examples in (90) and (91) show, neither subjects nor objects may appear after the verb, and hence Dutch lacks the HNPS construction.[23]

(90) a. *Ik heb *Φ* opgegeten **de vis die over was**.
I have eaten the fish that left was
"I have eaten **the fish that was left**."
(Groos and Van Riemsdijk (1981: 186))

b.*Hij heeft *Φ* gezien **de vrouw die het boek geschreven heeft**
he has seen the woman who the book written has
"He has seen the woman who has written the book."
Adapted from (Koster (2000: 7))

(91) * *Φ* Zijn verouderd **de meeste artikelen die ik hierover heb gevonden**.
Are outdated the most articles that I about this have found
"Most articles that I have found about this are outdated."
(Groos and Van Riemsdijk (1981:188))

2.4.1.1 Postverbal Construction[24]

In the present subsection, I will describe some properties of the Postverbal Construction in Dutch in an analysis-neutral way.

2.4.1.1.1 What categories can appear in postverbal position?

[23] There is an example in which an object NP undergoes HNPS:

(i) Hierbij doen we u *Φ* toekomen: **de onderscheiding voor voorbeeldig gedrag**.
Hereby do we you give: **the award for exemplary behaviour**.
"Hereby we give you **the award for exemplary behaviour**."
Adapted from (De Vries (2002: 293-294))

[24] The data used here is based mainly on De Vries (2002), where a gloss is given for each sentence but English translations are not.

Various syntactic categories can appear postverbally:[25]

(92) a. [complement PP]

Hij schijnt niet geïnteresseerd te zijn **[$_{PP}$ in dit onderwerp].**

He seems not interested to be in this topic

"He does not seem to be interested in this topic."

b. [complement CP of V]

Ze kunnen niet *Φ* begrijpen **[$_{CP}$ waarom dat niet mag]**.

They cannot understand why that not may

"They cannot understand why that is not allowed.

c. [complement CP of N]

Ik heb de vraag *Φ* gesteld **of hij wilde komen**.

I have the question asked **if he wanted to com**e.

"I have asked the question **if he wanted to come**."

d. [adjunct PP]

Ik heb de man *Φ* gezien **met de rode hoed**.

I have the man seen **with the red hat**.

"I have seen the man **with the red hat**."

e. [adjunct CP]

Ik heb de man *Φ* gezien **die een rode jas droeg**.

I have the man seen **who a red coat wore**.

"I have seen the man **who wore a red coat**."

f. [the second conjunct]

Ik heb Joop *Φ* gezien **en Jos**.

I have Joop seen **and Jos**.

"I have seen Joop **and Jos**."

g. [AdvP]

Ik wil het cadeau kopen, **morgen**.

I want the present buy, **tomorrow**.

"I want to buy the present **tomorrow**."

h. [attributive AP]

Ze heeft druiven geplukt, **witte**.

she has grapes picked, **white** (ones).

"She has picked **white** grapes."

[25] (92a-b) are derived from (Groos and Van Riemsdijk (1981: 184)) and (92c-h) are adapted from (De Vries (2002: 236, 293-294))

The Dutch Postverbal Construction is similar to the JPVC except that the second conjunct as in (92f) can appear in postverbal position but neither subjects nor objects can.

2.4.1.1.2 Extraction sites

Relative clauses can be extracted out of any position, as shown below:

(93) a. Ik heb de man [een boek *Φ*] gegeven **dat hij graag wilde hebben**. [DO]
I have the man a book given **which he readily wanted have**.
"I have given the man a book **which he readily wanted to have**.
b. Ik heb [iemand *Φ*] de prijs gegeven **die het verdiende**. [IO]
I have someone the prize given **who it deserved**.
"I have given the prize to someone **who deserved it**."
c. [Iemand *Φ*] heeft me een boek gegeven **die ik niet ken**. [Subject]
someone has me a book given **who I not know**.
"Someone **who I do not know** has given me a book."
d. Ik heb [op een plek *Φ*] gelopen **waar jij ook bent geweest**. [PP]
I have on a spot walked **where you also have been**.
"I have walked on a spot **where you have also been**."
e. [Dat boek *Φ*] heb ik de man gegeven **dat hij graag wilde hebben**. [TOP]
that book have I the man given **which he readily wanted have**
"That book **which he readily wanted to have** I have given him."
Adapted from (De Vries (2002: 244))
f. [Welk boek *Φ*] is duidelijk **dat hij gelezen heeft** ? [WH]
which book is clear **that he read has**
"Which book is it clear that he read?"
Adapted from (Koster (2000: 14))

It should be noted that the examples in (93) correspond to English EX constructions, but I will refer to examples like (93) as the Postverbal Construction in Dutch because unlike English, Dutch allows conjuncts and adjectives to appear in postverbal position (see (92f, h)).

2.4.1.1.3. Multiple postverbal elements

De Vries (2002) points out that two relative clauses can appear postverbally, although not all examples are acceptable to everyone:

(94) [Een zekere misdadiger Φ_1] heeft [de kluis Φ_2] gekraakt [**die tweehonderd**
A certain criminal has the safe cracked **that two hundred**
diamanten bevatte]$_2$, [die ook Meneer X heeft vermoord]$_1$.
diamonds contained who also mister X has killed
"A certain criminal **who has also killed mister X** has cracked the safe **that contained two hundred diamonds**."

Adapted from (De Vries (2002: 248))

As the example in (95) shows, a relative clause which is associated with the object cannot follow a relative clause which is linked with the subject.

(95) *[Een zekere misdadiger Φ_1] heeft [de kluis Φ_2] gekraakt [**die ook Meneer X heeft vermoord]$_1$, [die tweehonderd diamanten bevatte]$_2$.**

(De Vries (2002: 248))

2.4.1.1.4 Locality effects

The Dutch Postverbal Construction displays the Right Roof Constraint effect:

(96) a.* [$_{CP}$ Dat hij [$_{NP}$ de vrouw Φ] kent] is duidelijk **die alles weet.**
that he the woman knows is clear **who everything knows**
"That he knows the woman **who knows everything** is clear."
b. [$_{CP}$ Dat hij [$_{NP}$ de vrouw Φ] kent **die alles weet]** is duidelijk.
that he the woman knows **who everything knows** is clear

Adapted from (Koster (2000: 14))

However, postverbal elements can be associated with elements in a PP within NP, as shown in (97):

(97) a. Ik heb [$_{NP}$ de papieren [$_{PP}$ van de man Φ]]gecontroleerd **die een rode**
I have the papers of the man checked **who a red**
jas droeg.
coat wore.
"I have checked the papers of the man who wore a red coat."

Adapted from (De Vries (2002: 246))

b. Hij heeft [$_{PP}$ met [$_{NP}$ de moeder [$_{PP}$ van [$_{NP}$ de vrouw Φ]]]] gespoken **die alles wist.**
He has with the mother of the woman talked **who all knew**

"He talked with the mother of the woman who knew everything."

(Koster (2000: 9))

In (97a-b), the extraposed relative clauses can be linked with *de man* ("the man") and *de vrouw* ("the woman"), respectively.

2.4.1.1.5 Split antecedents

The postverbal phrase can have a split antecedent:

(98) a. [Ik heb [een vrouw]$_i$ gezien] en [jij hebt [een man]$_j$ bespied] **die$_{i+j}$ beide een rode jas droegen**
I have a woman seen and you have a man spied.on **who both a red coat wore$_{PL}$**

"I have seen a woman and you have spied on a man **who both wore a red coat**."

Adapted from (De Vries (2002: 264))

b. Ik heb [de man aangehouden] en [de vrouw doorgelaten], **met een gezamenlijke reisverzekering.**
I have the man stopped and the woman let-through with a combined travel-insurance.

(De Vries (2002: 302))

De Vries (2002: 264) notes that the relative pronoun in the example in (98a) "triggers agreement on the verb in the relative."

2.4.1.1.6 Semantic effects

Regardless of whether a relative clause appears in postverbal position, there occurs no change in the binding relation:

(99) a. Ik heb iedereen$_i$ het verhaal dat hij$_i$ wilde horen verteld.
I have everybody the story that he wanted hear told.
"I have told everybody the story that he wanted to hear."
a'. Ik heb idereen$_i$ het verhaal *Φ* verteld **dat hij$_i$ wilde horen**.
I have everybody the story told **that he wanted hear**.
b. *Ik heb de persoon [$_{CP}$ die het$_i$ wilde horen] [$_{NP}$ elk verhaal]$_i$ verteld.
I have the person who it wanted hear every story told.
"I have told the person who wanted to hear it every story."
b'. *Ik heb de persoon *Φ* [$_{NP}$elk verhaal]$_i$ verteld **die het$_i$ wilde horen**.
I have the person every story told **who it wanted hear**
Adapted from (De Vries (2002: 261))

Just as the pronoun *hij* (''he'') in (99a) can have a bound variable interpretation, so can the pronun in (99a'). Just as the pronoun *het* (''it'') in (99b) cannot have a bound variable interpretation, neither can the pronoun in (99b').

2.4.1.2 Right Dislocation (RD)[26]

Dutch has the Right Dislocation construction, as shown in (100), where the dislocated NP is in boldface and the relevant pronoun in italics:

(100) Ik ken '*m* niet, **die jongen**.
I know him not that guy.
(Zwart (2001:1))

In the above example, the pronoun refers to the dislocated NP.

2.4.1.2.1 Referentiality

A quantified NP cannot be dislocated as in (101):

(101) * dat ik *ze* begroette, **iedereen.**
that I them greeted **everyone**
(Zwart (2001: 9))

[26] The data used here are obtained from Zwart (2001, 2002).

Neither pronouns nor phrases which contain negative polarity items can be dislocated as shown in (102):

(102) a. * …dat ik *die jongen* ken, **hem/hemzelf/zichzelf**.
that I that guy know pronoun/pronoun-self/reflexive-self
b. * …dat niemand *hem* begroette, **de vader van ook maar iemand**
that noone him greeted the father of anyone at all
(Zwart (2001: 9))

2.4.1.2.2 The absence of the Right Roof Constraint effect

The RD construction in Dutch does not display the Right Roof Constraint effect as shown in (103):

(103) [Dat hij *het* gelezen heeft] verbaast me zeer, **Oorlog en vrede**.
That he it read has surprises me enormously **War and Peace**
(Zwart (2001: 2))

In the above example, the pronoun *het* (‘‘it’’), which appears in an embedded clause, can refer to the dislocated element, which appears outside the embedded clause. Note that the RD construction can appear in an embedded clause, as shown below:

(104) . … dat ik *hem* niet ken, **die jongen**.
that I him not know **that guy**
(Zwart (2001: 10))

2.4.1.2.3 Semantic effects

The RD gives rise to semantic effects:

(105) a. Jan is er twee keer in geslaagd om het eerste kievitsei te vinden.
John is there twice in succeeded COMP the first plover’s egg to find
“John twice managed to find the first plover’s egg [in different years].” 2>1
“*John twice managed to find the first plover’s egg [in a single year]” *1>2
b. Jan is er twee keer in geslaagd om het te vinden, **het eerste kievitsei**.
John is there twice in succeeded COMP it to find **the first plover’s egg**
“John twice managed to find the first plover’s egg [in different years].” 2>1
“John twice managed to find the first plover’s egg [in a single year]” 1>2

(Zwart (2001: 12))

The example in (105a) is not ambiguous, while the example with the RD in (105b) is.

2.4.2 German

As in the case of Dutch, I assume that German is also underlyingly verb final; the clause ends with a verbal element except when the finite verb occurs in second position in a root clause.

As shown in (106), neither subject nor object can appear in postverbal position, and hence, the HNPS construction is absent in German.[27]

(106) a. [Object NP]
*Der Hans hat *Φ* zurückgegeben **das Geld, dass er gestohlen hat**.
The Hans has returned the money that he stolen has
"Hans has returned the money that he has stolen."
(cf. Der Hans hat **das Geld, dass er gestohlen hat** zurückgegeben.)
b. [Subject NP]
* *Φ* Ist unsinnig **die Hypothese, die du darlegst**.
Is nonsensical the hypothesis which you expound
"The hypothesis which you expound is nonsensical."
c. [Subject CP]
* *Φ* Ist unsinning, **was du darlegst**.
Is nonsensical what you expound.
"What you expound is nonsensical."
(Groos and Van Riemsdijk (1981: 185, 187))

However, both complement PP and complement CP may appear in postverbal position.

(107) a. Du solltest dich nicht vertiefen **[$_{PP}$ in diesen Kram]**. [PP]
You should yourself not absorb in this rubbish
"You should not become absorbed by this rubbish."

[27] However, Mülller (1997: 227) gives an example of the HNPS construction in German:

i) ?dass keiner je gelesen hat [Bücher über dieses Thema die der Fritz verfasst hat].
that no one ever read has books about this topic that ART Fritz written has

b. Er hat uns gesagt, **[$_{CP}$ dass er morgen kommt]**. [CP]
He has us told that he tomorrow comes
"He has told us that he is coming tomorrow."
(Groos and Van Riemsdijk (1981: 184))

2.4.2.1 Extraposition from NP

In this subsection, I will describe some properties of the Extraposition from NP construction in German in an analysis-neutral way.

2.4.2.1.1 What elements can be extraposed?

Relative clauses, complement clauses including non-finite ones, and PPs can undergo EX:

Relative Clause from Subject
(108) a. Der Mann *Φ* ist gerade weggegangen, **der gekommen war, um**
A man just left **who come was COMP**
eine Frage zu stellen.
a question to ask
"A man just left **who had come to ask a question**."
(Gamon et al. 2002: 1))
b. Die Hypothese *Φ* is unsinnig, **die du darlegst**.
The hypothesis is nonsensical **which you expound**.
"The hypothesis **which you expound** is nonsensical."
(Groos and Van Riemsdijk (1981:187))

Relative Clause from Object
(109) a. Peter hat die Frau *Φ* getroffen **die gerne Bier trinkt**.
Peter has the woman met **who willingly beer drinks**.
"Peter met the woman who likes to drink beer."
Adapted from (Inaba (2005: 157))
b….dass du immer die Leute *Φ* anstellst, **die man dir empfiehlt**.
that you always those people employ **who one you recommends**
"…that you always employ those who are recommended to you."
(Groos and Van Riemsdijk (1981:186))

Infinitival clause

(110) a. Eine Entsheidung *Φ* wurde getroffen, **das Land zu verlassen**.
a decision was made **the country to leave**.
"A decision was made **to leave the country**."
(Gamon et al. 2002: 1))

b. Er hatte den Versuch *Φ* vergessen, **zu dem Fest zu kommen**.
he had the attempt forgot **to the party to get**
"He had forgotten about the attempt to get to the party."
(Kiss (2005: 283))

Complement clause

(111) Er hatte dem Versprechen *Φ* vertraut, **dass sie kommen würde**.
he had the promise believed **that she come would**
"He believed in the promise that she would come."
(Kiss (2005: 282))

PP complement

(112) Aber es wurde öffentlich aufmerksam *Φ* gemacht **auf eine prekäre Situation**.
but it was publicly attentive made **to a delicate situation**.
"But attention was publicly called to a delicate situation."
Adapted from (Keller (1995: 1))

2.4.2.1.2 Extraction sites

Extraposition from within subjects is possible (see also (108)):[28]

(113) Der Gruppe hat der Versuch *Φ* geholfen, **bei dem die Schwerkraft**
the team has the attempt helped **at which the gravity**
überwunden wurde.
overcome pass.aux.
"The attempt at which gravity was overcome was useful for the team."
(Kiss (2005: 285))

[28] As for extraction of complement clauses out of subject positions, according to Kiss (2005), some speakers cannot accept an example like (i):

(i) ??Der Gruppe hat das Versprechen *Φ* geholfen, **die Schwerkraft zu überwinden**.
the team has the promise helped **the gravity to overcome**.
"The promise to overcome gravity has been helpful to the team."
(Kiss (2005: 284))

In (113), a relative clause is extraposed from within subject position.

Extraposition from within object position is possible:

Extraposition of complement clauses out of objects

(114) a. Er hatte dem Versprechen *Φ* vertraut, **dass sie kommen würde**.
he had the promise believed **that she come would**
"He believed in the promise **that she would come**."
(Kiss (2005: 282))

b. Er hatte den Versuch *Φ* vergessen, **zu dem Fest zu kommen.**
he had the attempt forgot **to the party to get**
"He had forgotten about the attempt **to get to the party**."
(Kiss (2005: 283)

Extraposition of relative clauses out of objects

(115) a. Er hat das Buch *Φ* gestern gefunden **das der alte Professor verloren hatte**.
he has the book yesterday found **that the old professor lost had**.
"He found the book that the old professor had lost yesterday."

b. Er hat gestern das Buch *Φ* gefunden **das der alte Professor verloren hatte**.
he has yesterday the book found **that the old professor lost had**.
(Hawkins (2004: 138))

EX is also possible with topicalised elements and fronted wh-phrases:

(116) a. Dem Mann *Φ* hat sie gesehen, **den ich gestern getroffen hatte**.
the man has she seen **who I yesterday met had**.
"She saw the man **who I had met** yesterday."

b. Wen *Φ* hat sie gesehen, **den ich gestern getroffen hatte**?
who has she seen **who I yesterday met had**
"Who did she see **that I had met** yesterday?"
(Kiss (2002: 110))

In (116a), the relative clause can be associated with the topicalised phrase *Dem Mann* (''the man''). Likewise in (116b), the relative clause can be linked with the fronted wh-phrase *Wen* (''Who'').

It should be noted that with respect to extraction out of PP, EX is possible with relative clauses as in (117), but not with complement clauses as in (118):

Extraposition of relative clauses out of PPs

(117) Er hat die Zeit [$_{PP}$ vor dem Versuch Φ] gut verbracht, **der ihn berümt machte**.
he has the time before the experiment well spent **which him famous made**.
"He has spent a nice time before the experiment **which made him famous**."
(Kiss (2005: 316))

(118) *Hier habe ich [bei den Beobachtungen Φ] faul auf der Wiese gelegen, **dass die Erde rund ist**.
here have I during the observations lazy on the lawn laid **that the earth round is**.
"I was lying here lazily on the lawn during the observations **that the earth is a sphere**."
(Kiss (2005: 283))

2.4.2.1.3 Multiple extraposed elements

More than one phrase can be extraposed as shown below:

(119) weil das Argument Φ_i einen Mann Φ_j aufgeregt hat, [**der das Fest besuchte**]$_j$ [**dass Rauchen ungesund ist**]$_i$.
because the argument a man upset has **who the party visited that smoking unhealthy is**.
"Because the argument that smoking is unhealthy has upset a man who visited the party."
(Keller (1995: 2))

However, a relative clause which is associated with the object cannot follow a relative clause which is linked with the subject, as shown in (120):

(120) * weil das Argument Φ_i einen Mann Φ_j aufgeregt hat, **[dass Rauchen ungesund ist]$_i$ [der das Fest besuchte]$_j$**.
because the argument a man upset has **that smoking unhealthy is who the party visited**.
(Keller (1995: 2))

2.4.2.1.4 Locality effects

EX obeys the Right Roof Constraint:

(121) a. Ulrich hatte zugegeben, [dass die Karte *Φ* gestohlen war, **die er**
Ulrich had admitted that the ticket stolen was **which he**
gefunden hatte], als er betrunken war.
found had while he drunk was
"While being drunk, Ulrich had admitted that the ticket he had found was stolen."

b.*Ulrich hatte zugegeben, [dass die Karte *Φ* gestohlen war], als er
Ulrich had admitted that the ticket stolen was while he
betrunken war, **die er gefunden hatte**.
drunk was **whicn he found had**

(Kiss (2005: 313))

As for EX from within complex NPs and PPs, there is a complement-adjunct asymmetry; relative clauses can be extraposed as in (122), whereas complement clauses cannot as in (123):

Relative clauses

(122) a. Karl hat mir [ein Bild [einer Frau *Φ*]] gegeben, **die schon lange tot ist**.
Kart has me a picture a woman given **who already long dead is**
"Karl gave me a picture of a woman **who has been dead for a long time**."

Adapted from (Müller (2004: 222))

b. Man hat [die Frau [des Boten *Φ*]] beschimpft, **der den Befehl**
one has the wife the messenger insulted **who the command**
überbrachte.
delivered
"The wife of the messenger was insulted **who$_{masc}$ delivered the command**."

(Kiss (2005: 285))

c. Hier habe ich [bei vielen Versuchen *Φ*] faul auf der Wiese gelegen,
here have I during many attempts lazy on the lawn laid
bei denen die Schwerkraft überwunden wurde
at which the gravity overcome was
"I lay lazily on the lawn during many attempts at which gravity was overcome.''

(Kiss (2005: 285))

Complement clauses

(123) a.*Man hat [den Überbringer [der Mitteilung *Φ*]] beschimpft, **dass die**
one has the messenger the message insulted **that the**
Erde rund ist.
earth round is.
"The messenger was insulted who delivered the message that the earth is a sphere."

(Kiss (2005: 282))

b. *Hier habe ich[bei den Beobachtungen]faul auf der Wiese gelegen,
here have I during the observation lazy on the lawn laid
dass die Erde rund ist
that the earth round is.
"I was lying here lazily on the lawn during the observations that the earth is a sphere."

(Kiss (2005: 283))

c. *Er hat die Zeit [vor dem Versuch *Φ*] gut verbracht, **über Wasser zu**
he has the time before the experiment well spent **over water to**
wandeln.
walk.
"He has spent a nice time before trying **to walk over water**."

(Kiss (2005: 316-317))

2.4.2.1.5 Split Antecedents

EX can have split antecedents:

(124) Ich habe heute einen Mann und gestern eine Frau getroffen, **die beide gerne**
I have today a man and yesterday a woman met **who both happily**
Schach spielten.
chess played
"I met a man today and a woman yesterday, who both liked playing chess."

(Crysmann (2005: 63))

In (124), the extraposed relative clause has *einen Mann* ("a man") and *eine Frau* ("a woman") as the antecedent at the same time.

2.4.2.1.6. The absence of semantic effects

Inaba ((2005) observes that EX has no influence on binding relations in German:

(125) a.*Ich habe ihr$_i$ mit Absicht viele Geschenke [die Maria$_i$ nicht mag], geschickt.
I have her with intention many presents which Maria not likes sent
"I intentionally sent Mary many presents that she doesn't like."
b.*Ich habe ihr$_i$ mit Absicht viele Geschenke Φ geschickt, [**die Maria$_i$ nicht mag**].

(Inaba (2005: 162))

In (125), the EX construction (i.e., (125b)) has the same binding relation as the corresponding construction (i.e., (125a). Thus, elements which undergo EX are not semantically affected by EX (cf. (75)).

2.4.2.2 Right Dislocation

German has the Right Dislocation construction:

(126) a. *Sie* war ein Original, **die Madame Dutire**.
She was an original **the Madame Dutire**

(Averintseva-Klisch (2006: 19))

b. Ich MAG *sie* nicht, **die Brigitte**.[29]
I like her not **the Brigitte**.

(Averintseva-Klisch (2006: 17))

The examples in (126a-b) show that subject and object may undergo RD, respectively.

The following example shows that a dislocated NP accompanied by a preposition is possible:

[29] The capital letter in "MAG" indicates that the main accent is put on it.

(127) Heute bin ich über *sie*$_i$ hergefallen, über **meine Leichen im**
Today am I over them pounced over **my corpses in the**
Kleiderschrank$_i$.
wardrobe.
"Today I pounced on them, on my wardrobe corpses (i.e., old dresses)."
(Averinstseva-Klisch and Salfner (2007: 57))

CP may undergo RD as well:

(128) *Das* hat mir gerade noch gefehlt, **dass Du auch noch krank wirst!**
That has me just yet missed **that you also yet ill become**
"That is the last thing I needed, that you fall ill as well."
(Averinstseva-Klisch and Salfner (2007: 59))

There is a strict morphological agreement between the relevant pronoun and the dislocated NP:

(129) *Der* war viel zu schön, **der Tag /*die Feier.**
D-PRON$_{MASC_NOM}$ was much too wonderful **the day$_{MASC_NOM}$ the party$_{FEM}$**
"It was much too wonderful, the day."
Adapted from Averintseva-Klisch (2007: 167)

It is impossible to dislocate indefinite NPs or quantificational NPs:

(130) a. *Da kommt *er* schon wieder, **so ein Typ aus dem Tanzkurs.**
there comes *he* already again **such a guy from the dancing-class**
b. Alle blonden Frauen sind für ihn wunderschön. *Peter liebt *sie*,
all blonde women are for him beautiful Peter loves *them*
alle blonden Frauen.
all blonde women.
(Averintseva-Klisch (2007: 170))

2.4.3 Italian

In this subsection, I will provide some examples of the Heavy NP Shift (HNPS) construction and the Right Dislocation (RD) construction in Italian.

2.4.3.1. Heavy NP Shift

The subject in a tensed clause can be shifted to the end of the sentence without inserting anything in the subject position: [30]

Subject

(131) a. ? *Φ* Ha dato un libro a Maria **Gianni**.
has given a book to Maria **Gianni**.

b. *Φ* Ha mangiato **Gianni**.
has eaten **Gianni**.

(Belletti and Shlonsky (1995: 500, 502))

The object can be shifted as well. Note that it is assumed that in each pair of examples, the second one is derived from the first:[31]

Object

(132) a. ho imparato molte cose da mio fratello.
I learned many things from my brother.

b. ho imparato *Φ* da mio fratello **molte cose**.
I learned from my brother **many things**.

(133) a. ho tagliato un pezzo di pane con questo coltello.
I cut a slice of bread with this knife.

b. ho tagliato *Φ* con questo coltello **un pezzo di pane**.
I cut with this knife **a slice of bread**.

(134) a. hanno spedito un mazzo di fiori a Gianni.
they sent a bouquet of flowers to Gianni.

b. hanno spedito *Φ* a Gianni **un mazzo di fiori**.
they sent to Gianni **a bouquet of flowers**.

(135) a. abbiamo dato un premio a Dina.
we gave a prize to Dina.

b. abbiamo dato *Φ* a Dina **un premio**.
we gave to Dina **a prize**.

The examples above show that shifted object NPs are not necessarily "heavy".

Non-referential expressions can be shifted, as shown in (136):

[30] Cardinaletti (2002) calls these examples Marginalization, which may be regarded as Right Dislocation without clitics. She argues, however, that there are some syntactic differences between Marginalization and RD.

[31] The examples from (132) to (135) are obtained from Belletti and Shlonsky (1995: 490-491).

(136) a. *Φ* Hanno lavorato **molti operai**.
Have worked **many workers**.

(Belletti and Shlonsky (1995: 498))

b. *Φ* Può già andare, **ogni ragazzo**.
can already go **every boy**

(Cardinaletti (2002: 52))

2.4.3.2 Right Dislocation

2.4.3.2.1 What syntactic categories can be dislocated?

Italian RD applies not only to NPs but also other syntactic categories as shown in (137):

(137) a. *L'* ho incontrato a ROMA, **Marco/il tuo amico**. (NP)
(I) *him* have met at Rome, **Mark/the your friend**
"I met **Mark/your friend** in ROME."

b. *Ne* ho parlato a LUISA, **di quella faccenda** (PP)
(I) *Of-it* have spoken to Luisa, **of that matter**
"I spoke to LUISA **about that matte**r."

c. Gianni decisamente non lo È, **molto intelligente**. (AP)
John definitely not it is, **very intelligent**
"John is definitely NOT **very intelligent**."

d. Ma abbiamo BEN, ieri, **portato il cane dal veterinario**! (VP)
But (we) have well yesterday **taken the dog to-the veterinary**
"But yesterday we did INDEED **take the dog to the vet**."

e. Dopo due bottiglie lo sembrerai senz'altro anche TU,
After two bottles (it) it will-seem undoubtedly indeed even you,
aver bevuto troppo. (IP)
to-have drunk too-much
"After two bottles even YOU will appear **to have drunk too much**."

f. Lo abbiamo già ditto diverse VOLTE, **che Gianni è bravo**. (CP)
(We) it have already said several times, **that John is clever**
"We already said SEVERAL TIMES **that John is clever**."

(Samek-Lodovici (2006: 839))

2.4.3.2.2 Agreement

RD requires verbal agreement, when a subject is dislocated as shown in (138), where the empty pronoun *pro* is present.

(138) *pro* L' *ha / hanno fatto ieri, il disegno, **quei bambini lì**.
[they] It *has/have done yesterday this drawing **those children there**.
(Cardinaletti (2002: 51))

2.4.3.2.3 The order of dislocated elements

The order of right-dislocated arguments is free. In (139a), the dislocated phrase comes before PP, and in (139b), it comes after PP:

(139) a. Ce l'ha nascosto il bambino, **il libro**, sotto il letto.
there it has hidden the child **the book** under the bed
b. Ce l'ha nascosto il bambino, sotto il letto, **il libro**.
there it has hidden the child under the bed **the book**
(Cardinaletti (2002: 34))

2.4.3.2.4 Referentiality

Non-referential NPs cannot be right-dislocated:

(140) a. *Non l'ha invitato Gianni, **nessuno**.
not him has invited Gianni, **anybody**
(Cardinaletti (2002: 38))
b.* Non l'ha invitata, Maria, **nessuno**.
[he] not her has invited, Maria, **anybody**.

2.4.4 Turkish[32]

2.4.4.1 Postverbal Construction

According to Kural (1997), sentences in Turkish normally end with the verb as in (141a). However, a phrase can appear after the verb as in (141b):

[32] The data used here are based on Kural (1997).

(141) a. Ahmet öğrencilerle konuştu.
Ahmet-Nom students-with speak-Past-3sg
"Ahmet spoke with the students."
b. Ahmet *Φ* konuştu **öğrencilerle**.
Ahmet-Nom speak-Past-3sg **students-with**

(Kural (1997: 499))

A construction like (141b) is similar to its Japanese counterpart in the respect that verb-final languages have the construction where a phrase that usually comes before the verb appears postverbally. Hence, this construction may be called the Postverbal Construction (PVC).

2.4.4.1.1 What can appear in postverbal position?

It seems that any phrase can appear postverbally:

(142) a. *Φ* Üç kiş yi dün aramiş **herkes**. [Nom]
three person-Acc yesterday call-PAST-3sg **everyone-Nom**
"**Everyone** called three people yesterday."

b. Herkes *Φ* dün aramiş **üç kiş yi**. [Acc]
everyone-Nom yesterday call-PAST-3SG **three person-Acc**
"Everyone called **three people** yesterday."

(Kural (1997: 505))

c. *Φ* Üç kiş ye Ahmet sözetmiş **her kitap tan**. [Abl]
three person-Dat Ahmet-Nom mention-Past-3sg **every book-Abl**
"Ahmet talked to three people **about every book**."

d. *Φ* Her kitap tan Ahmet sözetmiş **üç kiş ye**. [Dat]
every book-Abl Ahmet-Nom mention-Past-3sg **three person-Dat**
"Ahmet talked **to three people** about every book."

(Kural (1997: 508-509))

e. Ahmet *Φ* [pro hasta olduğu için] kötü öksürüyor **bazen**. [AdvP]
Ahmet-Nom 3sg sick be-Past for bad cough-Pres-3sg **sometimes**
"Ahmet **sometimes** coughs badly because he is sick."

(Kural (1997: 506))

Furthermore, multiple postverbal elements are possible:

(143) a. *Φ Φ* Dün aramiş **herkes üç kişi yi**.
yesterday call-Pzst-3sg **everyone-Nom three person-Acc**
"Everyone called three people yesterday."
b. *Φ Φ* Dün aramiş **üç kişi yi herkes**.
yesterday call-Past-3sg **three person-Acc everyone-Nom**
(Kural (1997: 509n17))

There seem to be no restrictions on the word order of postverbal phrases.

2.4.4.1.2 Referentiality

Quantified NPs can be found in postverbal position (see also (142a-d)):

(144) Üç kişi *Φ* dün aramiş **herkesi**.
three person-Nom yesterday call-Past-3sg **everyone-Acc**
"Three people called **everyone** yesterday."
(Kural (1997: 505))

2.4.4.1.3 Locality effects/ embedded clauses

The PVC displays locality effects:

(145) a. *pro [$_{NP}$ [$_{CP}$Ahmet'in *Φ* verdiği] kitab] sevdim **Ayşe'ye**.
1sg Ahmet-Gen give-Past-3sg book-Acc like-Past-3sg **Ayşe-Dat**
"I liked the book that Ahmet gave **to Ayşe**."
b.*pro [[Ahmet *Φ* yediğo] için] sana kizdim **pastayı**
1sg Ahmet-Nom eat-Past-3sg for you-Dat anger-Past-1sg **cake-Acc**
"I got angry with you because Ahmet ate **the cake**."
(Kural (1997: 500))

In (145), the postverbal phrases cannot be associated with relevant elements within the embedded clauses.

The PVC is impossible in an embedded context, as shown in (146a), but it does not display the Right Roof Constraint effect as in (146b):

(146) a. *Ayşe [Ahmet'in *Φ* konuştuğu] nu **öğrencilerle** biliyor.
Ayşe-Nom Ahmet-Gen speak-Past-3s-Acc **student-with** know-Pres-3sg
"Ayşe knows that Ahmet spoke **with the students**."
b. Ayşe [Ahmet'in *Φ* konuştuğu] nu biliyor **öğrencilerle**
Ayşe-Nom Ahmet-Gen speak-Past-3sg-Acc know-Pres-3sg **student-with**
(Kural (1997: 501))

2.4.4.1.4 Semantic effects

The PVC interacts with scope interpretations:

(147) a. Üç kiş herkesi dün aramiş.
three person-Nom everyone-Acc yesterday call-Past-3sg
"Three people called everyone yesterday."
(3>>ALL, *ALL>>3)
b. Üç kiş *Φ* dün aramiş **herkesi**
three person-Nom yesterday call-Past-3sg **everyone-Acc**
(*3>>ALL, ALL>>3)
Adapted from (Kural (1997: 504-505))

In (147a), *Üç kiş* ("three people") takes scope over *herkesi* ("everyone"), and in (147b), *herkesi* ("everyone") takes scope over *Üç kiş* ("three people").

2.5 Conclusion

In this chapter I have presented a general description of properties of rightward movement constructions in six languages. Some of the properties are summarised in tables 2A and 2B.[33]

[33] No data are indicated by a blank.

Language	Japanese	Turkish	Dutch		German	
Construction	PVC	PVC	PVC	RD	EX	RD
Target categories	Any	Any?	PP,CP, AP,AdvP	NP?	PP,CP,IP	NP
Extraction sites	Subj, DO, IO, PP	Subj, DO	Subj, DO, IO, PP,TOP, WH	N/A	Subj, DO, PP, TOP, WH	N/A
No. of moved elements	One or more	One or more	One or more		One or more	
Order of moved elements	Free	Free	Nesting		Nesting	
Quantified NP	Yes	Yes	N/A	No	N/A	No
The RRC effect	No/Yes	No	Yes	No	Yes	
Embedded Clause	No	No		Yes	Yes	
Split Antecedent	Yes		Yes		Yes	
Semantic effects	Yes	Yes	No	Yes	No	

Table 2A

Language	English			Italian	
Construction	HNPS	EX	RD	HNPS	RD
Target elements	NP,CP, PP	CP,PP,AP, (NP)	NP	NP	NP,PP,AP ,VP,IP,CP
Extraction sites	Subj, DO	Subj, DO, PP, TOP, WH	N/A	S, DO	N/A
No. of moved elements	One	One or more		One or more	One or more
Order of moved elements	N/A	Nesting		Fixed	Free
Quantified NP	Yes	N/A	No	Yes	No
The RRC effect	Yes	Yes	Yes	Yes	Yes
Embedded Clause	Yes	Yes	Yes	Yes	Yes
Split Antecedent		Yes			
Semantic effects	Yes	Yes			

Table 2B

Chapter 3 A Theoretical Framework

3.1 Introduction

In this chapter, I will first present an outline of the organisation of the grammar as well as some assumptions in the minimalist program, on the basis of which I will develop a syntactic analysis for the JPVC (Post-Verbal Construction in Japanese). Then, I will consider the relationship between the parser and the grammar. Finally, I will discuss the parsing principles that I will adopt to account for syntactic properties that seem to be difficult to explain in terms of a syntactic theory.

3.2 The grammar

In this section, I will first present an outline of the organisation of the grammar. Then, I will discuss basic assumptions in the minimalist program which I will adopt.

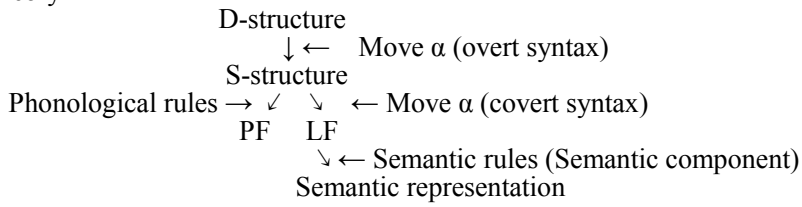
3.2.1 A Model of Grammar

The minimalist program (MP) (Chomsky (2004b: 107, 2005: 14; 2008: 137, 142)) assumes that there are no notions of D-structure, S-structure or LF, and as a result, the model of grammar is quite different from the previous models.[1] The organisation of the grammar in the MP that I adopt mainly throughout this work is illustrated in (1)[2]:

---

[1] In Government Binding (GB) theory, for example, the model of grammar is diagrammed in (i):

(i). GB theory

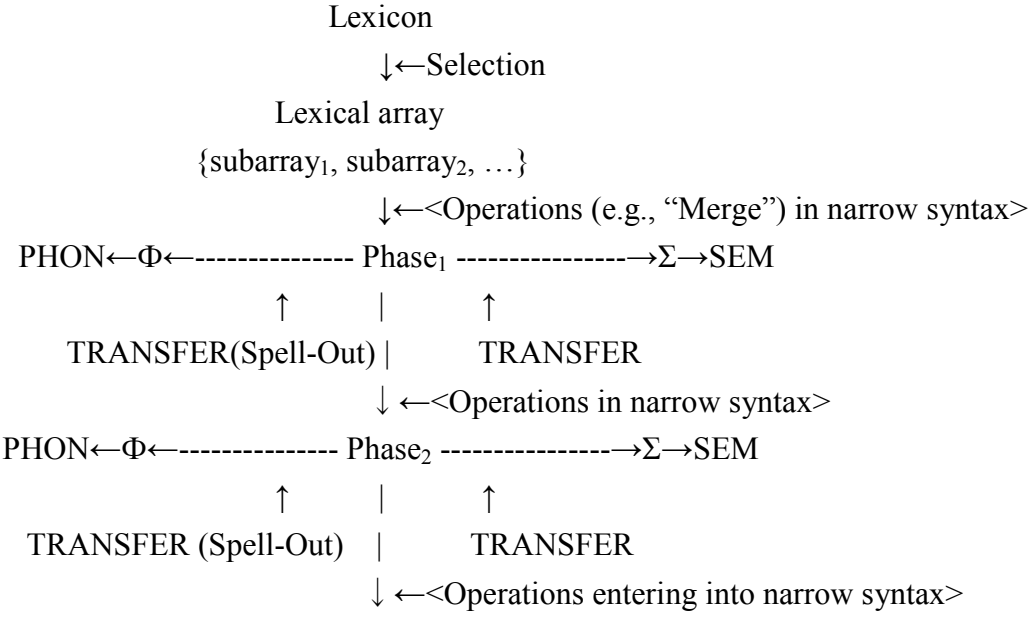


S-structure is formed from D-structure by the iterated application of Move α (overt syntax). The PF level of representation is related to S-structure by the phonological rules, which are sometimes called stylistic rules. The LF level of representation is associated with S-structure by the rules of the LF component (covert syntax). The semantic representation is generated by semantic rules such as Focus Interpretation Rules.

Although there are many changes in the model of grammar, what remains unchanged throughout the history of "mainstream generative grammar" is nevertheless that the output of phonological component (PF) is never input to the semantic component; the inputs to the semantic component are LF, which is the output of syntactic operations in "covert" syntax.

[2] The model in (1) is similar to that of the Extended Standard Theory, where a trace is not

(1)



Φ: Phonological component, Σ: Semantic component

The organisation of the grammar[3]

A computation at each stage of derivation accesses a subarray that is a subset of a lexical array (LA) selected from the lexicon only once for each derivation, and thereby the derivation dispenses with further access to the lexicon. In other words, a computation does not directly access the lexicon (see Chomsky (2000: 100, 106)). In figure 1, the lexical array is the input to narrow syntax (NS), one of the three components that the language L has.[4] NS has a primitive operation called "Merge", which puts together two syntactic objects into a larger unit. Phases are units constructed by NS at a certain stage of derivation, and each of them is handed over to the phonological component (Φ) and to the semantic component (Σ) by an operation called TRANSFER at the same stage of the derivation.[5] PHON and SEM are interface levels; the former is phonetic forms accessed by sensorimotor systems and the latter is semantic forms accessed by conceptual-intentional systems. All the three components are cyclic.[6]

---

assumed, in that there are multiple inputs to the semantic component (see also Chomsky (2000: 145n62)).

[3] See also Ike-uchi (2003: 12).

[4] As mentioned below, the other two are the phonological component and the semantic one.

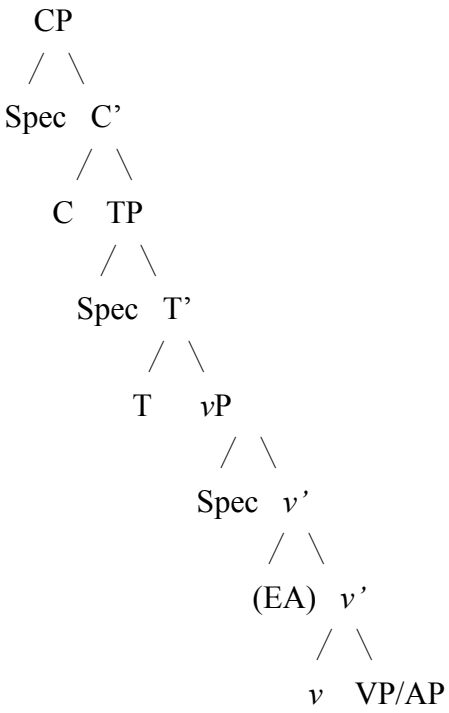
[5] To be exact, part of a Phase undergoes TRANSFER (see also 3.2.5).

[6] Chomsky (2004b: 107) remarks that "in this conception there is no LF: rather, the computation maps LA to <PHON, SEM> piece by piece, cyclically. There are, therefore, no LF properties and no interpretation of LF, strictly speaking, though Σ and Φ interpret units that are part of something like LF in a noncyclic conception." Hence, it seems to me that Σ and SEM could be

3.2.2 Lexicon

Lexical items are classified into two types; substantive and functional. It is assumed in Chomsky (2000: 102) that the core functional categories (CFCs) are C (expressing force/mood), T (tense/event structure), and *v* (the head of transitive constructions), which is called the "light verb". It is also assumed that C is selected by substantive categories and it selects T, T is selected by C or V and it selects verbal elements, and *v* is selected only by a functional category and it selects not only verbal elements but may also select a nominal phrase as its external argument (EA). An extra Spec (specifier) is allowed by each CFC: a raised wh-phrase may appear in [Spec, C], the surface subject may appear in [Spec, T], and the phrase raised by object shift may appear in [Spec [(EA), *v* VP], where EA is the external argument selected by *v*. A basic configuration concerning CFCs is show in (2), where [Spec, C], [Spec, T] and [Spec, *v*] are selected by the "EPP"-features of the respective CFCs.[7,8]

(2)



regarded as functionally corresponding to LF plus semantic components and LF plus semantic representations in a GB theory, respectively (see also Ike-uchi (2003: 12)).

[7] EPP stands for the Extended Projection Principle, the property of which is assumed to enable each CFC to allow an extra Spec.

[8] See footnote 11 for order in narrow syntax.

3.2.3 Merge

In this section, I lay out the assumptions that I will adopt or make to account for syntactic properties of the JPVC. First, I follow Chomsky (1995: 225, 2000: 113, 118, 2004b: 107) in adopting the Inclusiveness Condition as formulated in (3), and also assuming that the condition in (3) holds of narrow syntax alone.

(3) Inclusiveness Condition:
No new elements are added in the course of computation.

It follows from (3) that no indices, no phrasal categories, and no intermediate nodes are admitted because such elements are not included in the lexicon.[9] Thus, principles referring to indices such as binding principles are no longer in narrow syntax, and they should be reformulated as interpretation rules in the interface (SEM) or the semantic component (see Chomsky (2008)). More importantly, there will not be X-bar theory or its equivalent. As for structure-building, it is therefore assumed that a syntactic structure is constructed by the operation called *Merge*, as mentioned above. This operation takes two syntactic objects α and β, and then forms from them a new object as illustrated in (4):

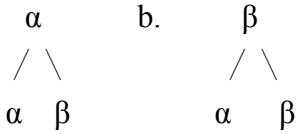
(4)


Merge also determines the label of a new larger object by projection of a head (Chomsky (1995: 243-245). If α is the head, the new object will be (5a), and if β is the head, the new object will be (5b):[10]

[9] I assume that traces should exist in the lexicon, although it is claimed (e.g., Chomsky (1995)) that traces are replaced by copies in the copy theory of movement, which states that "the trace left behind is a copy of the moved element, deleted by a principle of the PF component in the case of overt movement. But at LF [=SEM] the copy remains, providing the materials for 'reconstruction'" (Chomsky (1995: 202)).

[10] There are two subcases of Merge: external and internal Merge (see Chomsky (2005: 12)). Internal Merge corresponds to so-called "Move". External Merge is Merge that is not part of internal Merge ("Move"). The operation under discussion is external Merge. As Chomsky (2005: 16) points out, "[w]ithout further stipulations, external Merge yields n-ary constituents." In other words, it is not strictly necessary that a structure should be formed in a binary way. Hence, it is assumed here that a constituent can have more than two branches (see also Chomsky (2004a: 168)). It is also important to note that the structures in (4) are informal notation only; it is assumed in MP that syntactic objects are formulated as sets like {α {α, β}} for (5a) (Chomsky (1995: 241ff., 2004b: 109, 2005: 14).

(5) a. b.

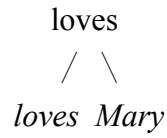


Let us consider the simple example in (6) to see how *Merge* forms a syntactic structure.

(6) John loves Mary.

Phrase structures are built in a bottom-up fashion. First, *Merge* puts together *Mary* and *loves*, which has an assign-accusative Case feature, determining that *loves* projects, because *loves* selects *Mary* as a direct object. The structure built thus far is as follows:[11]

(7)



At this stage of derivation, *Mary* (internal argument) is assigned a theta-role by the verb, which follows from the theta-theoretic principle given in (8).[12]

(8) The theta-theoretic principle:

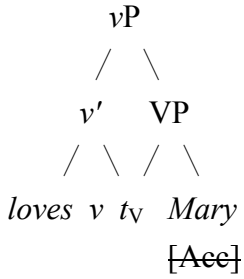
External Merge in theta-position is required of (and restricted to) arguments.

Adapted from (Chomsky (2000: 103))

Next, the VP is merged with the light verb *v*, to which *loves* adjoins.[13] *Mary* checks its Case feature against the Case feature of the light verb, and the Case feature is deleted.[14, 15]

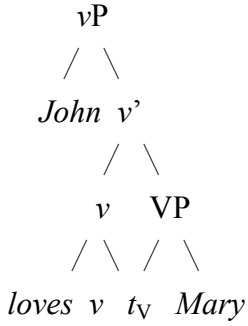
[11] Following Saito and Fukui (1998), I assume that order is introduced in narrow syntax, although the MP has assumed that there is no order in narrow syntax except for adjuncts (see Chomsky (2004b: 117ff.)).
[12] The principle in (8) states that the theta-roles are regarded as "a relation between two syntactic objects, a configuration and an expression selected by its head" (Chomsky (2000: 103).
[13] I assume that V raises to *v* obligatory in NS (see Chomsky (1995: 331; 2004b; 112, 122).
[14] The precise mechanisms for Case-assignment/checking are not discussed here.
[15] For ease of exposition, I will use informal notations like X' and XP in the present work

(9)



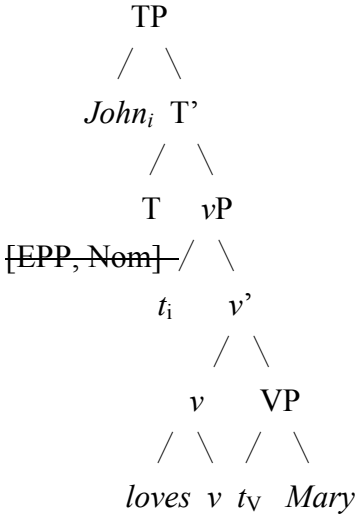
Then, *John* (external argument) is merged with the *v*P and it is assigned a theta-role by *v*:

(10)



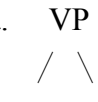
Thereafter, the *v*P is merged with T, which is assumed to have an EPP-feature and an assign-nominative Case feature at least. Finally, as (11) shows, *John* raises to the specifier position of TP, where *John* checks its Case feature against the Case feature of the finite T, and the EPP and the relevant Case features are deleted:

(11)

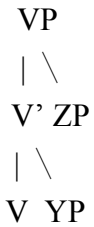


3.2.4 Two internal arguments

Based on the principle in (8), two internal arguments YP and ZP in a ditransitive verb are assigned in the following manner. One of them (e.g., YP) is first merged with V as shown in (12a). The other is then merged with V as another sister of V in (12b) or a sister of V' in (12c). Since the structure in (12b) is possible without further stipulations (footnote 10), I assume in this work that a ditransitive verb has a structure like (12b) unless there is evidence to the contrary.[16]

(12) a. 

b. 

c. 

3.2.5 Phases

As mentioned earlier, derivations proceed phase by phase. Then the question will arise as to what the phases are. I assume that the phases are CP and *v*P.[17] Given a phase =[α[H β]], where H is a head of a phase, β is called the domain of H and α the edge of a phase. At a phase level, TRANSFER hands β over to Φ and to Σ, not a whole phase. Hence, the Phase Impenetrability Condition would follow:

(13) The domain of H is not accessible to operations [that apply outside the phase], but only the edge of HP.

(Chomsky (2004b: 108))

"Subjacency" effects are derived from the Condition in (13).

As Chomsky (2000: 110) points out, syntactic objects are formed in parallel by NS. In the course of derivation of (14), for instance, each phase in (15) is the syntactic object built via repeated Merge based on the lexical items that a subarray provides for a new phase, with steps (15a) and (15b) unordered:

[16] See Larson (1988) for another possible structure.
[17] Chomsky (2005: 17) mentions that DP may also be a phase. However, I assume here that DP is not a phase.

(14) The demonstration that glaciers are receding showed that global warming must be taken seriously.

(Chomsky (2000: 110))

(15) a. Phase$_1$ =[$_{CP}$ that global warming must be taken seriously]
b. Phase$_2$ =[$_{CP}$ that glaciers are receding]
c. Phase$_3$ =[$_{vP}$ [the demonstration Phase$_2$ [show Phase$_1$]]]
d. Phase$_4$ = (14)

Adapted from (Chomsky (2000: 110))

Phase$_3$ is built from the subarray {*the, demonstation, show*} by repeated Merge to yield [*the demonstration* Phase$_2$] as well as [*show* Phase$_1$], with theta-roles assigned. The subarray containing T and C is then submitted to the derivation to proceed to Phase$_4$.

3.2.6 Adjuncts

The principle in (8) does not refer to adjuncts. I assume that adjunction structures are formed by External Merge.[18] If External Merge is costless, nothing will prohibit elements from adjoining to any elements unless syntactic principles are violated. There is evidence that some adjuncts must be considered as verb-phrasal. As observed by Takami (1985), some adverbial clauses are verb-phrasal, as shown in (16): [19]

(16) a. What John did was [$_{vP}$ go to bed [before he finished his homework]]
b.*What John did before he finished his homework was [$_{vP}$ go to bed].
c. I wanted John to go to bed before he finished his homework, and [$_{vP}$ go to bed [before he finished his homework]] he did.
d.*I wanted John to go to bed before he finished his homework, and [$_{vP}$ go to bed] he did before he finished his homework.

Adapted from (Takami (1985: 273-274))

The example in (16a) shows that *before he finished his homework* is inside a focused *v*P, which is assumed to be a constituent, and (16b) indicates that *before he finished*

[18] I am not concerned here with the adjunction structure built by Internal Merge (=Move).
[19] As mentioned in 3.1.3.2, syntactic objects are formed in parallel. Thus, adverbial clauses are built independently, and they could be merged with *v*P or CP at a stage of derivation.

his homework cannot be outside *v*P. This suggests that *before he finished his homework* must be inside *v*P. If a fronted *v*P is a constituent, the contrast in acceptability between (16c) and (16d) also suggests that *before he finished his homework* must be within *v*P. Thus, adverbial clauses as in (16) are adjoined to VP, *v*' or *v*P.

There is further evidence that adjuncts must be inside *v*P. As observed by Ike-uchi (2003: 161), depictive secondary predicates must be within *v*P:

(17) a. John wanted to drink his coffee hot, and [$_{vP}$ drink his coffee hot] he did.
b. *John wanted to drink his coffee hot, and [$_{vP}$ drink his coffee] he did hot.
(Ike-uchi (2003: 161))

The example in (17a) shows that *hot* is inside *v*P, and (17b) indicates that *hot* cannot be outside *v*P. This suggests that *hot* must be within *v*P. Thus, secondary predicates as in (17) are adjoined to VP, *v*' or *v*P.

If one follows Ike-uchi (2003: 160) in assuming that *do so* replaces *v*', then the examples in (18) indicate that secondary predicates must be inside *v*':

(18) John ate the chef's specialty steaming hot on Sunday, but/while
a. *Bill did so lukewarm on Saturday.
b. Bill did so on Saturday.
(Ike-uchi (2003: 161))

The example in (18a) shows that *did so* cannot replace [*ate the chef's specialty*], leaving behind *lukewarm*. On the other hand, the example in (18b) indicates that *did so* can replace [*ate the chef's specialty steaming hot*]. The contrast between (18a) and (18b) suggests that secondary predicates as in (18) must be within *v*'. Thus, they are adjoined to *v*' or VP. [20]

I will next turn to the distribution of adverbs, which is restricted as demonstrated below:

[20] Ike-uchi (2003) claims that secondary predicates as in (18) are attached to VP.

(19) a. ∧ The enemy ∧ will ∧ have ∧ destroyed the village ∧ , ∧.

probably	OK	OK	OK	??		*	OK
intentionally	*	*	OK	OK		OK	*
completely	*	*	?	OK		OK	*

b. ∧ The village ∧ will ∧ have ∧ been ∧ destroyed ∧ by the enemy ∧, ∧.

probably	OK	OK	OK	?	??	*	*	OK
intentionally	*	*	?	OK	OK	OK	OK	*
completely	*	*	?	?	OK	OK	?	*

(McCawley (1998: 664))

In (19), if *probably* is regarded as modifying CP, *intentionally* as modifying *v*P, and *completely* as modifying VP, it may be possible to understand the distribution of these adverbs. Assume that there are no features triggering movement of adverbs and that they are licensed by the semantic component in one way or another. Then, the different distributions of the three adverbs suggest that only *probably* can be adjoined to CP and TP by External Merge.

Taken together, the above facts indicate that elements can be adjoined to VP, *v*', *v*P, TP and CP at least by External Merge.

3.2.7 A licensing condition for null arguments

Aoun and Li (2008: 258) propose the following requirement:

(20) Subcategorization requirement on true empty categories[21]

a. If a head is subcategorized for a phrase E, E must be present in the syntactic structure.

b. An E can be generated as null (without lexical materials) only in subcategorized position.

This requirement states that a transitive verb needs an object. That is, an object without phonetic content must be present if an overt argument is unavailable when a transitive verb appears at a phase level.[22] I revise this requirement in such a way that a null subject as well as a null object is obligatorily present only if null arguments are allowed by a language to appear within a clause, as formulated in (21):[23,24]

[21] It seems that true empty categories are defined to be null arguments, so that other types of empty categories such as null operators are excluded in (20).

[22] Aoun and Li (2008) argue that empty categories may not be CP.

[23] Independently of the revised version of the requirement in (21), I adopt the theta criterion

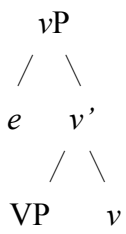
(21) The licensing condition for null arguments:[25]

A null argument is licensed only if it is theta-role assigned in theta position.

(8) and (21) taken together imply that, if a subarray contains null arguments as well as a transitive verb, a null argument must be merged with a transitive verb or a light verb as illustrated below:

(22) a.

b.



The questions then arise as to what the empty categories in (22) are in the first place and how they are given values. I will return to these questions in Chapter 4.

3.2.8 Summary

In 3.2, I have first presented an outline of the organisation of the grammar. Then, I have discussed basic assumptions in the MP which I will adopt.

3.3 The parser

In this section, I will focus on the discussion about syntactic processing (i.e., parsing). I will first discuss the relationship between the parser and the grammar. Then, I will consider the parsing strategies that I will adopt to account for syntactic properties.

3.3.1 The relationship between the parser and the grammar

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informally formulated in (i):

(i) Each argument bears one and only one θ-role, and each θ-role is assigned to one and only one argument.

(Chomsky (1981: 36))

[24] The term "null argument" is defined as "argument" without phonetic content. I will later discuss empty categories in more detail.

[25] See Lobeck (1995: 50ff.) for discussion about other kinds of empty categories related to VP ellipsis and Sluicing.

If there was a perfect close relationship between the parser and the grammar (i.e., no distinction between the two), there would be no parser-specific strategies. As Reinhart (2006) points out, however, there are some data suggesting that parser-specific strategies should be needed. Reinhart says:

> . . . in speech perception (processing) the parser uses specific principles or strategies that find no direct correlate in computations of the CS [=Computational System of Human language]. The most famous are strategies resolving local ambiguity at a processing stage, which does not even arise in syntax, as in (1).
>
> (1) a. Max knows Lucie well enough.
> b. Max knows Lucie will laugh.
>
> In response time and eye-tracking experiments, it was found that there is more intense processing activity following the occurrence of *Lucie* in (1b) than in (1a). This indicates that the parser attaches *Lucie* as a complement of the verb in both derivations, but then reanalysis is required in (1b). [26] Such findings are often taken to suggest that the parser must be a system independent of the CS . . . (p. 8)

Nonetheless, some researchers (e.g., Phillips (1996, 2004)) claim that there are no parser-specific strategies. There seem to be four possible options with respect to the relationship between the parser and the grammar (cf. Fanselow, Kliegel, and Schlesewsky (1999)): (i) parser-specific strategies have a direct influence on the shape of the grammar—the complexity in the grammar reflects the increasing processing cost (e.g., Hawkins (1994, 2004)); (ii) there are parser-specific strategies, and the parser borrows rules from the grammar (e.g., Reinhart (2006); Pritchett(1992b));[27] (iii) the parser is the same as the grammar—there are no parser-specific strategies (e.g., Phillips (1996, 2004); Mulders (2002, 2005); (iv) their relationship is indirect—there might be a certain mediator between the grammar and the parser (i.e., the parser does not use UG principles).

As we have seen above, (iii) is unlikely. Since parse trees are compatible with structures the grammar assigns, one can assume that the parser should have a fairly direct relationship to the grammar. If this assumption is correct, (iv) is also unlikely. In this work, I take the second option.[28] That is, I make the following assumption:

---

[26] I will claim that this reanalysis is low-cost in the sense that reanalysis is made unconsciously see (3.3.4).

[27] Reinhart (2006: 8-9) argues that the parser "has no internal information about what counts as a legitimate tree. This means that as long as the CS [=Computational System] definitions and computations are accessible to parsing algorithms, the parser can construct trees defined by the CS as legitimate outputs. . . . [the parser] has developed to operate within the hardware of limited human working memory. Hence, there are parser-specific strategies of how to minimize the load on working memory, . . ."

[28] (i) is not incompatible with (ii) in that there are parser-specific strategies. I will discuss Hawkins (2004) in Chapter 4, where I adopt one of the parsing strategies proposed in Hawkins (2004).

(23) The grammar-parser relationship

The parser is a system that can make use of UG principles as well as language-particular rules.

In addition to (23), I assume that the parser is universal. Since children need the parser to learn their languages, if the parser was not universal, they would have to decide which parser to use before knowing their target language. This, however, is impossible. The parser should thus be applied to any language (see also Mulders (2005), cf. Mazuka (1998)).

3.3.2 Properties of the parser

In this subsection, I will first consider a head-driven parsing strategy which I will adopt. I will then show how the parsing strategy applies. After that, I will discuss null arguments in Japanese. Finally, I will consider a syntactic reanalysis.

3.3.2.1 The Generalised Theta Attachment

As seen in the previous section, in the MP, phrase structures are formed in a bottom-up fashion by Merge. On the assumption in (23), hence, it is desirable to assume that the parser should build structures in the same way as the grammar (i.e., parse trees should be derived in a bottom-up fashion). Thus, I accept the assumption that the parser uses a head-driven parsing strategy, according to which strategy inputs are stored until syntactic heads are identified.[29] This assumption is represented in various ways (e.g., Alphonce and Davis (1997); Pritchett (1992); Mulders (2002), and others). I here follow Pritchett (1992) in adopting the Generalised Theta Attachment formulated in (24):

(24) Generalised Theta Attachment:

Every principle of the Syntax attempts to be maximally satisfied at every point during processing.

(Pritchett (1992: 138))

Although the name of (24) contains *theta attachment*, as Pritchett notes, this heuristic should be understood in the sense that the parser attempts to maximally satisfy all syntactic principles.

[29] This is a basic regulation of head-driven strategies.

3.3.2.2 An example

In this subsection, I will take a simple sentence like (25) to see how the strategy in (24) applies:

(25) John saw Mary.

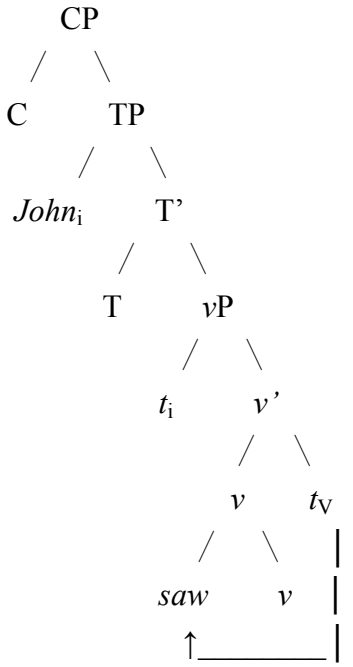
In (25), when *John* is encountered, it is identified as an NP to which no theta-role is assigned, and the Generalised Theta Attachment in (24) attempts to apply. However, there is no theta-role available because no theta-role assigner has been reached, and hence *John* is kept in store (i.e., left unattached to anything) until a theta-role assigner is encountered: otherwise, the theta criterion would not be locally satisfied.

When *saw* is reached, it is identified as a transitive verb. The strategy in (24) again attempts to apply. There are a potential argument (i.e., *John*) and a theta-role assigner (i.e., *saw*) available, and at this point the strategy may hence succeed in applying. The parser integrates *John* as a subject, postulating a trace in the specifier position of *v*P such that the trace can be assigned a theta-role by the verb *saw*, the theta-role being transmitted through a chain to the subject *John*.[30,31] Consequently, the parser contains a structure like (26). Note that although the verb *saw* still has a theta-role to discharge, the theta criterion is maximally satisfied at this point, and hence, that the structure in (26) does not contain a node which might be predicted to exist as an object of *saw* on the basis of the lexical information (argument structure):[32]

[30] I am not concerned here with a detailed discussion about ''chains''.
[31] It is assumed that the TRANSFER should not apply.
[32] Mulders (2002: 187) points out that "the Human Sentence Processor favors theta role reception over theta role assignment, i.e. it is more important for NPs to receive a theta role, than it is for theta assigners to assign their theta roles." She further gives the following guideline for the parser:

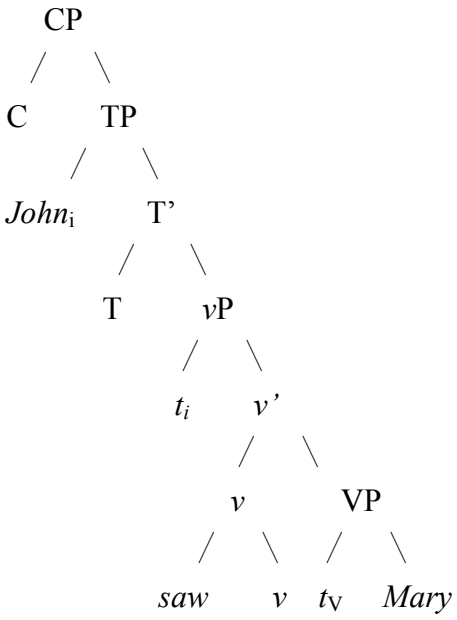
(i) When faced with a choice between two analyses for a particular string, one of which leaves a theta role undischarged, and one of which leaves an NP without a theta role, the parser chooses the first analysis.

(26)



When *Mary* is encountered, it is identified as an argument. The strategy in (24) attempts to apply once again so that *Mary* can be assigned a theta-role. *Mary* is merged with the trace of *saw* and assigned a theta-role by the trace of *saw* via a chain. The parse is finished successfully, yielding a parse tree like (27):

(27)



3.3.2.3 Null arguments in Japanese

As seen in Chapter 2, Japanese allows arguments to be phonetically null. The Generalised Theta Attachment in (24) predicts that in Japanese, the parser postulates a gap (i.e., a position for a null argument) on encountering a predicate when an overt subject or object does not come before the predicate (i.e., there are no fillers). This prediction is indirectly confirmed by the result of the experiment conducted in Yamashita (1995), who argues that verb argument information is utilised by the parser for syntactic processing not only in English but also in Japanese, although both languages are structurally different.

Yamashita (1995) compares three types of complex NPs; Gapless complex NP, the Adjunct PP relative clause construction, and the Argument relative clause construction.

(28) a. Gapless complex NP
[John-ga syasin-o tot-ta] sakuhinshyuu
John-Nom photo-Acc took collection
"the collection which was made possible by John's taking the photos"
b. Adjunct PP relative clause construction
[[John-ga [*e*]$_i$ syasin-o tot-ta] kooen$_i$]
John-Nom photo-Acc took park
"the park where John took some photos"
c. Argument relative clause construction
[John-ga kooen-de [*e*]$_i$ tot-ta] syasin$_i$
John-Nom park-at took photo
"the photos which John took"

(Yamashita (1995: 338))

If verb argument information—*toru* "take" taking two arguments—is used in processing, when encountering the verb, the parser would notice that the constructions in (28a-b) have the two theta-roles assigned to both arguments, and on the other hand, that in (28c), only one theta-role has been assigned. When all the arguments are present in a clause as in (28a) and (28b), the parser would expect the clause to end with the verb rather than expecting an NP to come later. By contrast, if there is a missing argument in a clause, the parser would be more ready to expect the NP to follow, resulting in faster reading time. As predicted, the results of her experiment show that it takes less time to process the head NP in Argument relative clauses than the ones in Gapless complex NPs and Adjunct relative clauses. This

suggests that the parser makes use of verb argument information during the processing of a sentence, which is consistent with the assumption in (23).

Thus, if we adopt the Generalised Theta Attachment, in Japanese, the parser postulates gaps on encountering a predicate when the complements of the predicate are phonetically empty (see also Nagai (1995)). In (29), for example, upon encountering the first verb *katta* ("bought"), the parser notices that one argument of the transitive verb is missing and hence postulates a gap, as shown in (30), where the postulated gap is indicated by *e*:[33]

(29) [Hanako-ga kinoo kat-ta] tomato-ga kusatte ita
Hanako-Nom yesterday bought tomato-Nom rotten be-Past
"The tomato Hanako bought yesterday was rotten."

(30) Hanako-ga kinoo *e* kat-ta. . .
Hanako-Nom yesterday bought

(Nagai (1995: 86))

3.3.2.4 Syntactic reanalysis

Let us compare the following sentences:

(31) a. John gave her books to Mary.
b. #I put the candy in the jar into my mouth.[34]

(Pritchett (1992: 101, 104))

In (31a), when *books* is encountered, it is first construed as the object of *gave* to maximally satisfy syntactic principles (e.g., the theta criterion); otherwise, it would violate the Generalised Theta Attachment in (24). When encountering *to Mary*, the parser realises that *to Mary* should be a complement of the verb. Hence, it attempts to reanalyse *her* and *books* as forming a constituent. As for (31b), the parser first interprets *the candy* and *in the jar* as both complements of the verb in accordance with the Generalised Theta Attachment. When encountering *into my mouth*, the

[33] There are two types of hypotheses: one is called "Trace Reactivation Hypothesis" and the other "Direct Association Hypothesis" (see Nakano, Felser, and Clahsen (2002: 532)). The former assumes the existence of a trace, and the other does not. As Nakano et al. (2002) point out, however, the two types of hypotheses are difficult to distinguish empirically as long as the data are based on a head-initial language such as English (see also Featherson (2001) for detailed discussion)).
[34] # indicates that the sentence is hard to accept although grammatical.

parser would realise that *in the jar* should not be a complement of the verb, and it would hence attempt to reanalyse *in the jar* as a modifier of *the candy*. In spite of this reanalysis, however, the example is still bad unlike the case of (31a). The contrast between (31a) and (31b) suggests that there are at least two types of reanalyses: a low-cost reanalysis versus a high-cost reanalysis.

Pritchett (1992) proposes a condition on reanalyses which is formulated in purely syntactic terms as given below:

(32) On-Line Locality Constraint (OLLC):

The target position (if any) assumed by a constituent must be governed or dominated by its source position (if any), otherwise attachment is impossible for the automatic Human Sentence Processor.

(Pritchett (1992: 101))

In (32), the target position is equivalent to the final attachment site of an element and the source position corresponds to the original attachment site of an element. This constraint can account for many types of examples that require reanalyses. However, (32) is not suitable for the framework of the minimalist program (MP), because *government* is no longer used in the MP.[35] Hence, I reformulate (32) as given in (33):

(33) Unconscious Reanalysis Condition:

It is possible for the human parser to make a syntactic reanalysis (i.e., reanalysis is low-cost), only if

(a) The original attachment site α contains the final attachment site β, as illustrated in (i):

(i) α

/...β...\

or

[35] Based on the OLLC proposed in Pritchett (1992), Mulders (2002) also attempts to revise the OLLC in the framework of the MP, as given below:

(i) Twice Revised On-Line Locality Constraint (TROLLC)

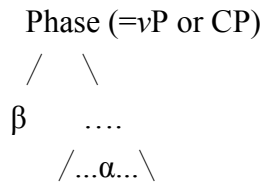
The Human Sentence Processor cannot access material inside a phase once it is closed, unless the material is located in the first edge of that phase.

(Mulders (2002: 176))

Mulders (2005) claims further that relevant phases are *v*P, CP, PP and NP.

(b) β c-commands α, and every phase (i.e., *v*P, CP) containing α contains β as shown in (ii), where order is irrelevant: [36]

(ii)

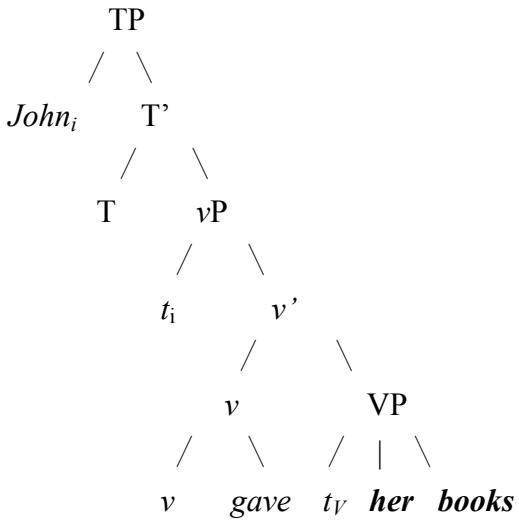


To see how (33) works, I will first consider the acceptable example in (31a), reproduced in (34), for ease of reference:

(34) John gave her books to Mary.

In (34), when *her* is encountered, it is identified as an object of *gave*. On reaching *books*, the parser analyses it as the second complement of the verb. [37] The parse tree at this point is as follows:

(35) a.



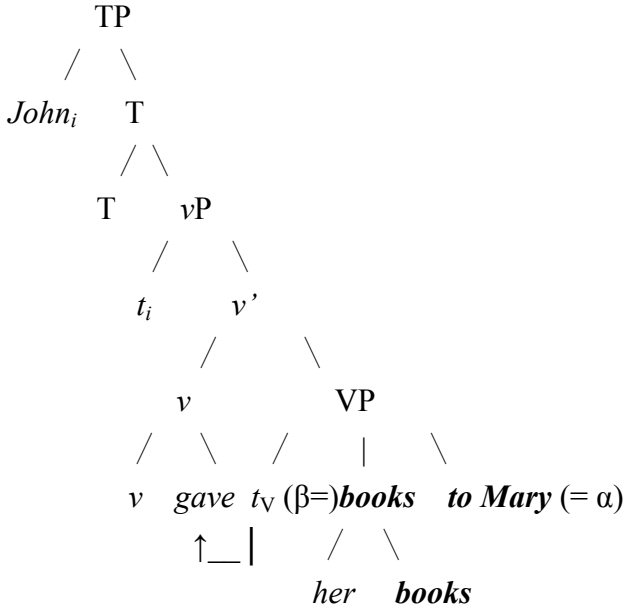
When *to Mary* is encountered, if *her* is reinterpreted as a determiner and *books* is reanalysed as the head of the first internal argument rather than the second, the parse tree will be (35b):

[36] According to Chomsky (2000: 116), *c-command* is defined as in (i) based on *contain* as defined in (ii):

(i) X c-commands Y if X is a sister of K that contains Y, where K may or may not be Y, (ii) K contains Y if K immediately contains Y or immediately contains L that contains Y.

[37] See section 3.1.3.1.

(35) b.



In (35b), the element in the final attachment site *books* (= β) c-commands the original attachment site *to Mary* (= α.), and every phase (i.e., *v*P, CP) containing *to Mary* (= α) contains *books* (=β).[38] According to the Unconscious Reanalysis Condition in (33), this reanalysis is low-cost.[39] Thus, (34) is easy to comprehend.

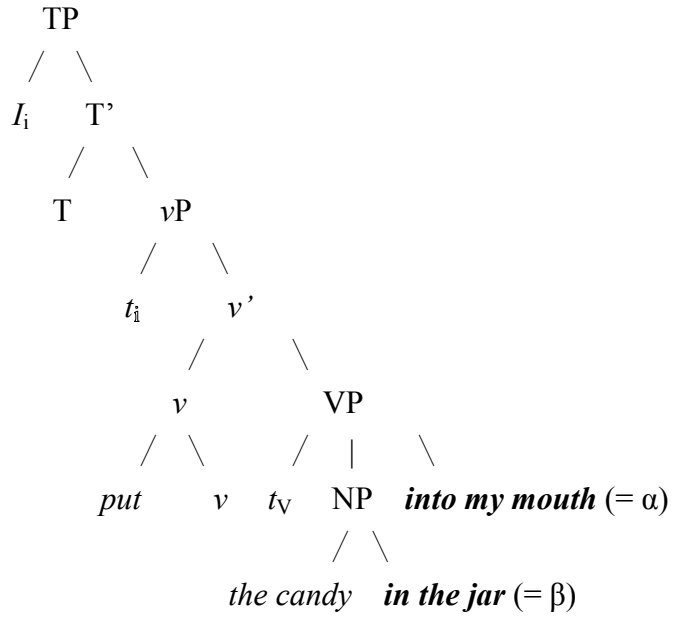
I will then consider (31b), reproduced in (36):

(36) #I put the candy in the jar into my mouth.

When *into my mouth* is encountered, if both *the candy* and *in the jar* underwent reanalysis, the parse tree would be (37):

[38] I assume that a projection of the lower *books* should be regarded as the final attachment site β.
[39] With respect to *her*, its final attachment site is contained in the original attachment site.

(37)



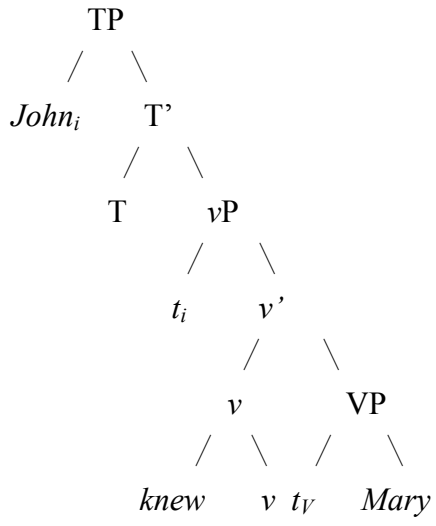
In the above structure, the final attachment site *in the jar* (= β) is neither contained in, nor c-commands, the original attachment site *into my mouth* (= α), resulting in the high-cost reanalysis. Thus, (36) requires conscious processing.

Next, let us turn to an example like (38):

(38) John knew Mary is honest.

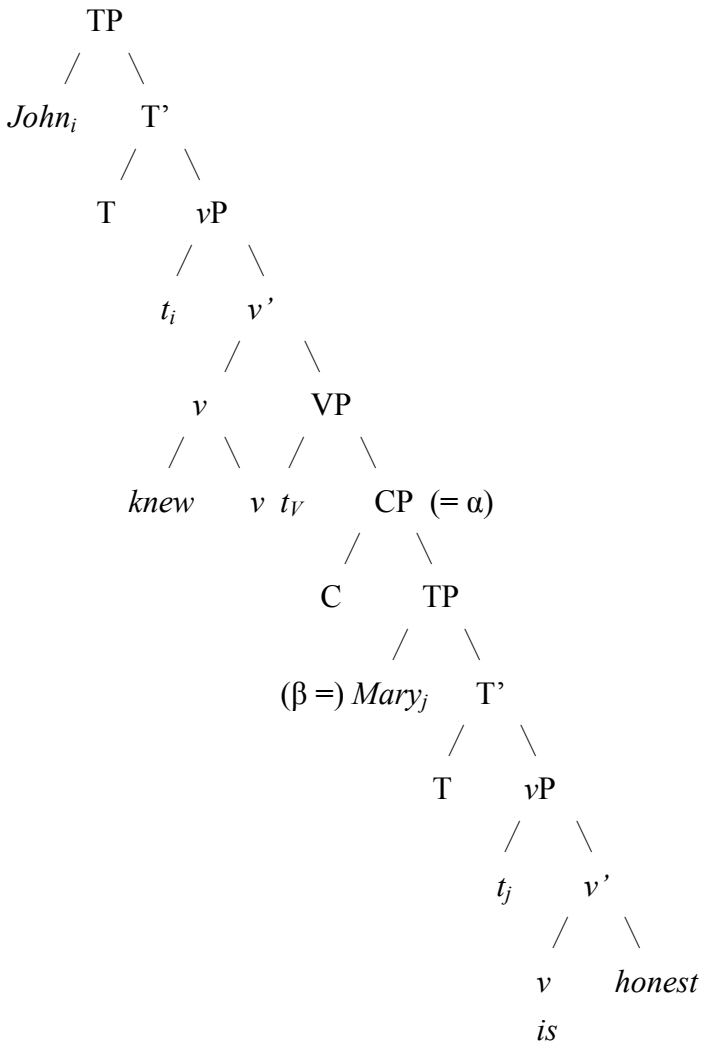
When *Mary* is encountered, it is identified as the direct object of *knew*, yielding a structure like (39a):

(39) a.



When the copula *is* is encountered, *Mary* is reinterpreted as the subject of the embedded clause, and it is kept in store until a theta-role assigner appears. When *honest* is reached, *Mary* is reattached to the specifier position of TP, yielding a parse tree like (39b):[40]

(39) b.



In the above structure, the final attachment site *Mary* (= β) is contained in the original attachment site CP (= α), and hence the reattachment is low-cost. Thus, (38) is acceptable.

Finally, I will consider another type of example like (40):

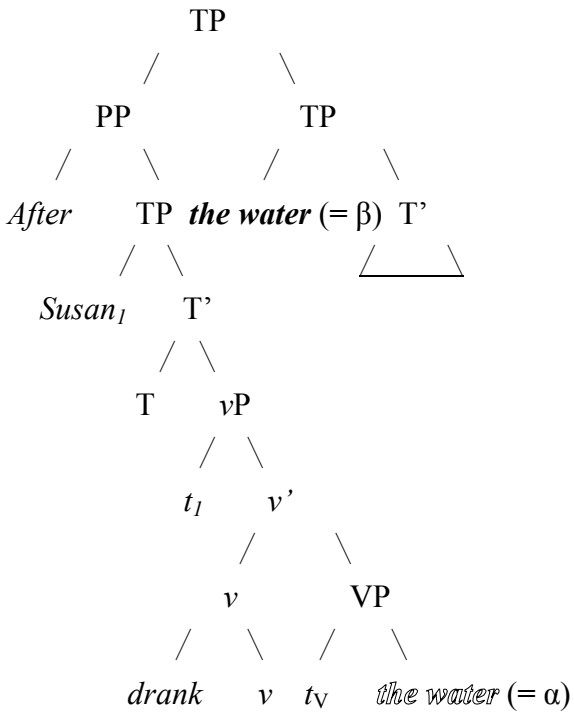
(40) #After Susan drank the water evaporated.

(Pritchett (1992: 101, 104))

[40] It is assumed that the copula is a light verb selecting verbal elements including adjectives.

When *the water* is encountered, it is identified as the direct object of *drank*. As soon as *evaporated* is encountered, *the water* is reinterpreted as the subject of *evaporated*, and at the same time, the verb *drank* is reinterpreted as an intransitive verb, yielding a parse tree like (41), where the original attachment site is indicated by white letters:

(41)



In (41), the final attachment site β can be neither dominated by the original attachment site α nor c-command it. Hence, the reattachment of *the water* to the specifier position of the matrix TP is costly. The example in (40) is therefore hard to comprehend.

3.4 Conclusion

In this chapter, I have first presented an outline of the organisation of the grammar as well as some assumptions in the minimalist program. Then, I have assumed that the parser makes use of UG principles, and that it is universal. Finally, I have discussed the two parsing strategies that I have adopted: (i) the Generalised Theta Attachment; (ii) the Unconscious Reanalysis Condition.

Chapter 4 The Post-Verbal Construction in Japanese

4.1 Introduction

In this chapter, I will discuss the JPVC (Post-Verbal Construction in Japanese). I will first present a critical review of some of the previous accounts of the JPVC: movement analyses and nonmovement analyses. I will then propose a licensing condition for postverbal elements which are adjoined to phrases by External Merge, creating adjunction structures, on the basis of the assumption that the derivation of the JPVC involves no movement. I will also demonstrate that many properties of the JPVC observed in Chapter 2 can be derived under my proposed analysis. Finally, I will discuss the effect of linear distance based on the results of an experiment on acceptability of the JPVC.

4.2 Previous studies

There are two types of possible approaches to the JPVC: (i) movement, (ii) nonmovement. Movement analyses can be further classified into two types: (i-a) rightward movement and (i-b) leftward movement.[1] Looking at the matter from the angle of the underlying form, it is possible to find another dimension: (A) monoclausal structure versus (B) biclausal counterpart. The possible approaches diverging along two independent dimensions are given in Table 1:

[1] A number of researchers who argue for movement analyses do not discuss explicitly why the JPVC is not derived by movement at PF (i.e., PHON) but in the narrow syntax.

Underlying form / Derivation		Monoclausal structure	*Biclausal structure*
Movement	Rightward	Endo (1989), Haraguchi (1973),[2] Kaiser (1999)	*?*[3]
	Leftward	Fukutomi (2007), Kurogi (2006), Whitman (1996)[4]	*Abe (2003), Endo (1996), Tanaka (2001), Watanuki (2006), Whitman (2000)*
Nonmovement		*Sells (1999),*[5] *Soshi and Hagiwara (2004)*	*Kuno (1978a,b), Inoue (1978)*

Table 1. Possible approaches diverging along two independent dimensions

4.2.1 The Monoclausal Structure of the JPVC: Movement analyses

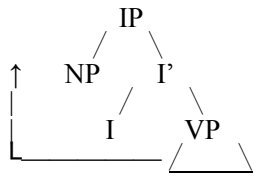
In this subsection, I will consider two types of movement analyses on which JPVCs are derived from a monoclausal structure. I will first discuss a rightward movement analysis proposed by Endo (1989). Then, I will consider a leftward movement analysis presented by Kurogi (2006). I will demonstrate that neither movement analysis is tenable.

4.2.1.1 A Rightward Movement Analysis[6]

In the framework of Government and Binding (GB) Theory, Endo (1989) and Kaiser (1999) claim that JPVCs are generated by rightward movement.[7] Endo

[2] I do not have access to Haraguchi (1973). According to Inoue (1978: 97-98) and Abe (200: 55-56), Haraguchi (1973) argues that JPVCs are derived by applying rightward movement.
[3] It is logically possible that JPVCs may be derived from two clauses by a rightward movement. However, it seems to me that there is little evidence to support such an analysis.
[4] I do not have access to Whitman (1996). According to Endo (1996: 16-17), Whitman (1996) proposes that JPVCs are derived by preposing VP, as shown below:

(i)



This analysis is similar to Kurogi (2006) and Fukutomi (2007) (see 4.2.1.2).
[5] Sells (1999) adopts the framework of LFG in claiming that JPVCs are base-generated (i.e., not derived by movement).
[6] Kural (1997) deals with Turkish constructions corresponding to JPVCs, arguing that such postverbal constructions are derived by rightward movement (cf. Kayne (1994)).
[7] Kaiser (1999) emphasises that it is necessary to analyse JPVCs not only from a syntactic point of view but also from a functional point of view. However, Kaiser has a much more detailed discussion of a functional analysis than a syntactic one. In this subsection, hence, I will mainly

proposes that postverbal elements are moved rightward from a preverbal position, and are right-adjoined to a clause, as schematised in (1), where a trace of a postverbal element is indicated by *t*:

(1) $[_{CP}\,[_{CP}$ ……..t_i……] $XP_i]$
|_____↑

Assuming that NP and S' (i.e., CP) are bounding nodes for Japanese, Endo follows Chomsky (1977) in adopting the Subjacency Condition on movement rules which states that no rule can move a phrase from position Y to position X in (2):

(2) ….X….[$_\alpha$ … [$_\beta$ … Y …] …] ….X … , where α and β are bounding nodes.
(Endo (1989 70, 109))

Based on the assumption that the Right Roof Constraint is not active in Japanese, Endo (1989: 104) claims that ''an element first adjoins to the S'[=CP] from which it originates, then to the next higher S'[=CP], and so on, until it reaches the highest S'[=CP] and adjoins to its right'' (successive-cyclical movement).[8] On this analysis, in (3), for example, *kaisha* (''company'') first adjoins to the CP3, then to CP2, and finally to CP1:

(3) $[_{CP1}\,[_{CP1}$ Ken wa okusan ni $[_{CP2}\,[_{CP2}\,[_{CP3}\,[_{CP3}\ t_i$ yame-yoo to] t_i] omotte-ru tte] t_i]
Ken-Top wife to (he) quit-will that (he) is-thinking that
itta no yo] **kaisha$_i$-o**.
said FP **company-Acc**
Lit. ''Ken told his wife that (he$_i$)'s thinking that (he$_i$)'ll quit t_i, **his company$_i$**.''
(Endo (1989: 102))

This analysis is supported by the fact that JPVCs display locality effects, as observed in Chapter 2, the examples repeated here in expanded form in (4) and (5):

(4) a. *$[_{NP}[_{CP}$ kinoo t_i katta] dress]-o mi-ta no **Mari$_i$-ga**
(I) Yesterday bought dress -Acc saw FP **Mari-Nom**
Lit. "(I) saw the dress t_i bought yesterday, **Mari$_i$**."

---

discuss Endo (1989), where JPVCs are syntactically analysed in detail.
[8] The Right Roof Constraint states that an element cannot move rightward out of the clause in which it is contained (see Chapter 2).

b. *[$_{NP}$[$_{CP}$ t_i Mari-ga katta] mise] ni itta no, **dress$_i$-o**.
(I) Mari-Nom bought store to went FP, **dress-Acc**
Lit.‘‘I went to the store where Mari bought t_i, **a dress$_i$**.’’

c.*?[$_{NP}$[$_{CP}$ t_i Mari-ga hiku] kyoku]-o sitte-ru, **asita$_i$**?
(you) Mari-Nom play piece -Acc know **tomorrow**
Lit. ‘‘Do (you) know the piece which Mari is going to play t_i, **tomorrow$_i$**?’’

d. *Soko ni [$_{NP1}$[$_{CP1}$ [$_{NP2}$ t_i isya]-ga motte-kita] wine]-ga aru yo,
There in doctor-Nom brought wine-Nom exist FP
[$_{CP2}$ tonari ni hikkosite-kita]$_i$
next door in moved
Lit.‘‘There is wine which the doctor t_i brought, **who moved in next door$_i$**.’’

(Endo (1989: 111, 114, 121))

(5) *?[$_{NP}$ [$_{CP}$ [$_{TP}$ Ken-ga t_i moratta] tte-yuu] uwasa] kiita yo, **shougakukin$_i$-o**
(I) Ken-Nom received that rumour heard FP **scholarship-Acc**
Lit.‘‘(I) heard the rumour that Ken received t_1, **a scholarship$_1$**.’’

(Endo (1989: 112))

In (4a-d), each postverbal phrase cannot be associated with a position *t* inside a relative clause. Similarly, in (5), the postverbal direct object is difficult to associate with a position *t* within the nominal complement clause.

Endo argues that the examples in (4) and (5) are unacceptable due to a violation of the Subjacency Condition in (2). In (4a), the postverbal phrase *Mari-ga* (‘‘Mari-Nom’’) moves from a position *t* within the relative clause *kinoo katta dress* (‘‘the dress which *t* bought yesterday’’). This movement violates the Subjacency Condition, because *Mari-ga* crosses two bounding nodes, namely NP and CP. Likewise in (4b-c), *dress-o* (‘‘dress-Acc’’) and *asita* (‘‘tomorrow’’) cross the two bounding nodes, respectively, violating the Subjacency Condition. The example in (4d) also involves a violation of the Subjacency Condition: the postverbal clause *tonari ni hikkosite-kita* (‘‘who moved in next door’’) crosses three bounding nodes, NP1, CP1 and NP2. In (5), a violation of the Subjacecny Condition occurs as well, because *shougakukin-o* (‘‘scholarship-Acc’’) moves from a position *t* within [$_{NP}$ [$_{CP}$ *Ken-ga t moratta tte-yuu*] *uwasa*], crossing two bounding nodes, NP and CP. The examples in (4) and (5) are thus unacceptable.

Another argument that Endo constructs for a movement analysis stands on a basis of a structural constraint on movement called the “Structure Preservation Constraint” (see Emonds (1970); Chomsky (1986)), according to which a head can

move/adjoin only to a head, and a maximal projection can move/adjoin only to a maximal projection. In other words, a head is prohibited from moving or adjoining to a maximal projection and vice versa. More specifically, it is predicted that a non-maximal projection fails to be put in postverbal position, i.e. right-adjoined to CP:

(6) a. *[$_{NP}$ [$_{AP}$ Mizikai][$_{NP}$ France-go-no] t_i] yomda no, **[$_{N}$ syoosetu]$_i$-o**.
(I) Short French -Gen read FP novel -Acc
Lit.‘‘(I) read a short French t_1, **novel$_1$**.’’

b. t_i Yomda no, **[$_{NP}$ [$_{AP}$ Mizikai][$_{NP}$ France-go-no] [$_{N}$ syoosetu]]$_i$-o**
(I) read FP short French -Gen novel -Acc
Lit.‘‘(I) read t_i, [**a short French novel]$_i$**.’’

(Endo (1989: 96))

In (6a), the element *syoosetu* (“novel”), which is a head (N), adjoins to a maximal projection (CP) (see also (26b) in Chapter 2), but on the other hand, in (6b), the whole NP is postposed. If JPVCs are derived by movement, the movement in (6a) violates the Structure Preservation Constraint, explaining why (6a) is not acceptable (see also 4.4.3).

4.2.1.2 Problems with Endo (1989)

The argument for the rightward movement analysis has been based on the premise that if some phenomena are derived by movement, they should obey island constraints such as the Subjacency Condition. In other words, if what look like displacements violate the Subjacency Condition but are still acceptable, it means that they should not be derived by movement. [9]

In this subsection, I will show that Endo’s movement analysis faces empirical problems. I will first demonstrate that movement is not involved in the derivation of the JPVC by giving acceptable examples that would be ruled out by the Subjacency Condition. Then, I will show that the analysis under discussion is unable to accommodate the case where elements cannot be extracted out of indirect questions.

As observed in (37) in Chapter 2, there are acceptable JPVCs that violate the Subjacency Condition, the relevant examples reproduced in (7) and (8):

[9] It is impossible to exclude the possibility that locality effects can be accounted for in terms of mechanisms other than movement. I will argue that the absence/presence of locality effects can follow from parsing strategies in section 5, where a number of examples which appear to violate island constraints but are still acceptable are provided.

(7) [$_{NP}$[$_{CP}$ Taro-ga t_i aisiteiru toiu] uwasa]-ga hontou da yo, **Hanako$_i$-o.**
Taro-Nom love Comp rumour-Nom true is FP **Hanako-Acc**
Lit. ‘‘The rumour that Taro loves t_i is true, **Hanako$_i$**.’’

(8) [$_{NP}$[$_{CP}$ t_i sonkeisiteiru]gakuseitati-ga fueteimasu yo, **ano sensei$_i$-o**.
respect students -Nom increase FP **that teacher-Acc**
Lit. “Students who respect t_i have increased, **that teacher$_i$**.”

The example in (7) is acceptable, but it is structurally the same as (5) in that in (7), the postverbal phrase *Hanako-o* (‘‘Hanako-Acc’’) moves from a position *t* inside the complex NP *Taro-ga aisiteiru toiu uwasa* (‘‘the rumour that Taro loves’’), crossing two bounding nodes, NP and CP. This movement violates the Subjacency Condition. The acceptability status of (7) should therefore be the same as that of (5), which is contrary to fact. Likewise, the example in (8), which is acceptable, has the same structure as (4a) in that in (8), the postverbal element *ano sensei-o* (‘‘that teacher-Acc’’) moves from a position *t* inside the relative clause, crossing two bounding nodes, NP and CP. (8) would thus be unacceptable for the same reason as (4a) (i.e., a violation of the Subjacency Condition). Hence Endo (1989) incorrectly predicts the examples in (7) and (8) to be unacceptable.

The following contrast is also problematic for Endo’s account:

(9) a. [$_{CP}$ t_i Hanako-o aisiteiru kadouka]-ga juuyou desu yo, **Taro$_i$-ga**.
Hanako-Acc love whether -Nom important is FP **Taro-Nom**
Lit. “Whether t_i loves Hanako is important, **Taro**$_i$.
b.*?[$_{CP}$ t_i Hanako-o aisiteru kadooka]-o sitteiru yo, **Taro$_i$-ga**.
Hanako-Acc love whether -Acc (I) know FP, **Taro-Nom**
‘‘I know whether t_i loves Hanako, **Taro$_i$**.’’

Endo’s analysis predicts that extraction of elements out of indirect questions is possible. In (9a), *Taro-ga* (‘‘Taro-Nom’’) moves from a position inside the complement clause [$_{CP}$ *Hanako-o aisiteiru kadooka*] (‘‘whether *t* loves Hanako’’). This movement does not violate the Subjacency Condition, because *Taro-ga* crosses only one bounding node, namely CP. Thus, (9a) is acceptable. The same analysis should be given for (9b): *Taro-ga* (‘‘Taro-Nom’’) moves across only one bounding node, CP, and hence this movement does not violate the Subjacency Condition, which would result in acceptability. However, it is difficult to construe *Taro-ga* as a

subject of *aisiteiru* (‘‘love’’) in (9b). Thus, Endo (1989) can account for the acceptability of (9a), but cannot account for the unacceptability of (9b). This account therefore faces empirical problems.

4.2.1.3 A Leftward Movement Analysis [10]

Assuming that Japanese is a head-initial language (Kayne (1994)), Kurogi (2006) proposes that (10a-b) are derived from (11a-b) respectively by preposing VP/TP to the speficier of a Modal head in which final particles such as *yo* are located, as depicted in (12a-b), where MdP stands for Modal Phrase. [11]

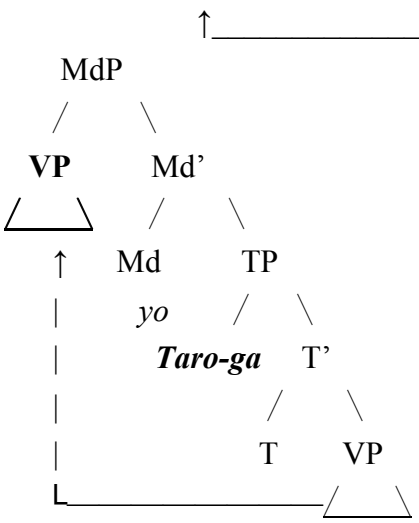
(10) a. Φ_1 Hanako-o aisiteiru yo, **Taro$_i$-ga**.
Hanako-Acc love FP **Taro-Nom**
Lit. ‘‘Φ_i loves Hanako, **Taro$_i$**.’’
b. Taro-ga Φ_i aisiteiru yo, **Hanako$_i$-o**.
Taro-Nom love FP **Hanako-Acc**
Lit. ‘‘Taro loves Φ_i, **Hanako$_i$**.’’
Adapted from (Kurogi (2006: 219))

On Kurogi’s (2006) analysis, the source for (10a) is (11a), where *Hanako-o* (‘‘Hanako-Acc’’) overtly moves to the specifier of VP. The verb phrase [$_{VP}$ *Hanako$_i$-o* [*aisiteiru* t_i]] (‘‘Hanako$_i$-Acc love t_i’’) subsequently moves to the specifier of MdP to check a ‘‘Modal-feature’’, yielding the structure in (12a).

(11) a. [$_{MdP}$ [$_{Md}$ yo] [$_{TP}$ Taro-ga [$_{VP}$ Hanako$_i$-o aisiteiru t_i]]]
↑_____|

[10] A similar analysis for the right dislocation construction in Dutch is proposed in Zwart (2001).
[11] A parallel argument is put forward by Fukutomi (2007), who claims that JPVCs are created by preposing *v*P.

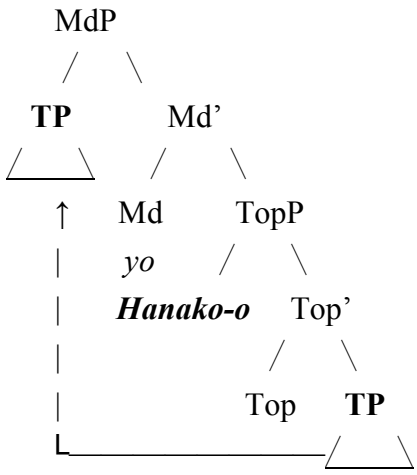
(12) a. Suject: [$_{MdP}$ [$_{\underline{VP}}$ Hanako$_i$-o [aisiteiru t_i]]]$_j$ [$_{Md}$ yo] [$_{TP}$ **Taro$_1$-ga** [$_{\underline{VP}}$ *e*]$_j$]



The source for (10b) is (11b). There *Hanako-o* moves to the specifier of Topic phrase (TopP) to check a ''Topic-feature''. Then, the remnant TP [$_{TP}$ *Taro-ga* [$_{VP}$ *t'$_i$ aisiteiru t$_i$*]]] (''Taro loves'') moves to the specifier of MdP, as shown in (12b).[12]

(11) b. [$_{MdP}$ [$_{Md}$ yo] [$_{TopP}$ Hanako$_i$-o [$_{\mathbf{TP}}$ Taro-ga [$_{VP}$ *t'*$_i$ [aisiteiru *t*$_i$]]]]]

(12) b. Object: [$_{MdP}$ [$_{TP}$ Taro-ga [$_{VP}$ *t'*$_i$ aisiteiru *t*$_i$]]]$_j$ [$_{Md}$ yo] [$_{Top}$ **Hanako$_i$-o**] [$_{TP}$ *e*]$_j$]



[12] Kurogi (2006; 219n5) assumes that the Proper Binding Condition, which states that traces must be bound, should not be violated as long as movements are triggered by both ''Topic'' and ''Modal'' features.

Kurogi (2006) mentions that since the direction of movement is always leftward, it is correctly predicted that the JPVC does not display the Right Roof Constraint effect, without the assumption that the Right Roof Constraint is not active in Japanese:[13]

(13) [$_{MdP}$ [$_{TP}$ [$_{CP}$ t_i Hanako-o aisiteiru koto]-ga hontoo da]] [$_{Md}$ yo],
Hanako-Acc love that -Nom true is FP
[$_{XP}$**Taro$_i$-ga** [$_{TP}$ *e*]]
Taro-Nom
''That t_i loves Hanako is true, **Taro$_i$**.''

(14) [$_{MdP}$ [$_{TP}$[$_{CP}$ Taro-ga t_i aisiteiru koto]-ga hontoo da]] [$_{Md}$ yo],
Taro-Nom love that -Nom true is FP
[$_{TopP}$ **Hanako$_i$-o** [$_{TP}$ e]]
Hanako-Acc
''That Taro loves t_i is true, **Hanako$_i$**.''

The examples in (13) and (14) are acceptable. (13) shows that *Taro-ga* (''Taro-Nom'') moves from within the embedded clause [$_{CP}$ *Hanako-o aisiteiru koto*] (''Hanako-Acc love that'') to the specifier position of a functional category which takes a matrix TP as its complement, and that the remnant TP subsequently moves to the specifier position of MdP. Likewise in (14), *Hanako-o* (''Hanako-Acc) moves out of the embedded clause [$_{CP}$ *Taro-ga aisiteiru koto*] (''Taro-Nom love that'') to the specifier position of the matrix TopP, and the remnant TP moves to the specifier position of MdP.

4.2.1.4 Problems with Kurogi (2006)

In this subsection, I will demonstrate that Kurogi's analysis faces a number of counterexamples. As described in Chapter 2, there can appear in postverbal position nonarguments such as genitive phrases, demonstratives and adjective phrases. Some of the relevant examples are reproduced in (15) in amended form:

[13] Kurogi (2006) does not provide any examples concerning the absence of the Right Roof Constraint effect.

(15) a Hanako-ga Φ_i hon-o yomda yo **Ken$_i$-no**. [Genitive]
Hanako Nom book Acc read FP **Ken Gen**
"Hanako read **Ken's** book."

b. Kinoo tsuini Φ_i eega-o mita yo **ano$_i$**. [Demonstrative]
yesterday finaly movie Acc saw FP **that**
" (I) finally saw **that** movie."

c. Hanako-ga Φ_i kuruma-o katta yo [$_{AP}$ **sugoku ookii]$_i$**. [Adjective]
Hanako ga car Acc bought FP **very big**
"Hanako bought a **very big** car."

Kurogi would claim that all the examples in (15) are derived from sources which contain the relevant postverbal elements undergoing leftward movement, as shown in (16):

(16) a ***Ken$_i$-no**, Hanako-ga [$_{DP/NP}$ t_i hon]-o yomda.
Ken-Gen Hanako-Nom book-Acc read
Lit. "**Ken's**, Hanako read book." (Hanako read Ken's book.)

b. ***Ano$_i$** kinoo tsuini [$_{DP/NP}$ t_i eega]-o mi-ta.
That (I-Top) yesterday finally movie -Acc saw
Lit. ''**That**, I finally saw movie yesterday.''
(I finally saw that movie yesterday.)

c. *[$_{AP}$ **Sugoku ookii]$_i$** Hanako-ga [$_{DP/NP}$ t_i kuruma]-o kat-ta.
Very big Hanako-Nom car -Acc bought
Lit. ''**Very big,** Hanako bought a car." (Hanako bought a very big car.)

Although Kurogi (2006) does not discuss examples like (15) at all, Kurogi would have to assume that nonarguments should move such that (15) can be derived.[14] In (16a), thus, *Ken-no* (''Ken-Gen'') moves leftward from a position inside the noun phrase *hon* (''book''). This movement, however, violates the Left Branch Condition, which states that an element is inhibited from moving out of the specifier position of DP/NP.[15] That is, it is impossible to derive (16a), namely the supposed source for (15a). Hence, there is no way in Kurogi's analysis to produce the acceptable example in (15a).[16] The same is true of the examples in (15b, c).

[14] Since nonarguments do not seem to be feature-driven, they might undergo scrambling.
[15] *The Left Branch Condition*: No NP which is the leftmost constituent of a larger NP can be reordered out of this NP by transformation rule.
(Ross (1986: 127))
[16] It is assumed here that the Left Branch Condition is not a representational constraint.

Let us next observe the following pairs of contrast:

(17) a. [$_{MdP}$ [[t_i Hanako-o aisiteiru koto]-ga hontoo da] [$_{Md}$ yo], [$_{XP}$ **Taro-ga**]$_i$
Hanako-Acc love that -Nom true is FP **Taro-Nom**
''That t_i loves Hanako is true, **Taro$_i$**.'' [=(13)]
b.*? [$_{MdP}$[t_i Hanako-o aisiteiru koto]-o sitteiru [$_{Md}$ yo], [$_{XP}$ **Taro-ga**]$_i$
(I) Hanako-Acc love that –Acc know FP **Taro-Nom**
''I know that t_i loves Hanako, **Taro$_i$**.''

(18) a. [$_{MdP}$ [[t_i Hanako-o aisiteiru kadooka]-ga juuyoo da] [$_{Md}$ yo], [$_{XP}$ **Taro-ga**]$_i$
Hanako-Acc love whether-Nom true is FP **Taro-Nom**
''Whether t_i loves Hanako is important, **Taro$_i$**.''
b.*? [$_{MdP}$[t_i Hanako-o aisiteiru kadooka]-o sitteiru [$_{Md}$ yo], [$_{XP}$ **Taro-ga**]$_i$
(I) Hanako-Acc love whether -Acc know FP **Taro-Nom**
''I know whether t_i loves Hanako, **Taro$_i$**.''

In (17a) and (18a), each postverbal phrase *Taro-ga* (''Taro-Nom'') can be interpreted as a subject of *aisiteiru* (''love''), but on the other hand, in (17b) and (18b), neither postverbal element can. In order to derive (17a), as mentioned earlier, Kurogi would claim that *Taro-ga* moves to the specifier position of a functional category X which takes a matrix TP as its complement. This indicates that *Taro-ga* in (17b) can also be extracted out of the embedded clause *Hanako-o aisiteiru koto* (''that *t* loves Hanako''), moving to the specifier position of XP. The unacceptability of (17b), however, suggests that *Taro-ga* cannot move to such a specifier position. Thus, Kurogi's analysis fails to account for the difference in acceptability between (17a) and (17b). The same occurs with (18a, b).

4.2.2 The Biclausal Structure of the JPVC

In this subsection, I will discuss biclausal analyses for the JPVC. First I will focus on Kuno (1978a, b) who claims that the JPVC is generated from two juxtaposed clauses without movement. Then I will review movement analyses which assume that the JPVC is derived from a biclausal structure by leftward movement (e.g., Abe (2004), Endo (1996), Tanaka (2001), Watanuki (2006), Whitman (2000)).

4.2.2.1 A Nonmovement Analysis

Kuno (1978a, b) and Inoue (1978) argue that the derivation of the JPVC does not involve movement.[17] Kuno (1978a) proposes that the JPVC is derived from two clauses, which are juxtaposed, by complementarily applying a process of ellipsis to elements. On this analysis, the underlying form for (19a) would be (19b), where the truncated portions are underlined: [18]

(19) a. kuruma-o kat-ta yo, **Ken-ga**
Car-Acc bought FP Ken-Nom
''**Ken** bought a car.''
b. [Ken-ga kuruma-o kat-ta yo], [**Ken-ga** kuruma-o kat-ta yo]
Ken-Nom Car-Acc bought FP Ken-Nom car-Acc bought FP

Kuno (1978a; 77-78) argues that examples like (20a) cannot be derived by movement:

(20) a. Yamada$_i$-wa baka da yo, **aitsu$_i$ -wa** **hontooni**.
Yamada-Top fool is FP **that fellow-Top really**
''Yamada is a fool, **that fellow really**.''

(Kuno (1978a: 77))

In the above example, *aitsu-wa* (''that fellow''), together with *hontooni* (''really''), appears in postverbal position, and there is no gap in the clause *Yamada-wa baka da yo* (''Yamada is a fool''). Kuno claims that in (20a), the postverbal elements cannot have been moved from anywhere, and hence, that (20a) should be derived from (20b):

(20) b. Yamada$_i$-wa baka da yo, **aitsu$_i$ -wa** **hontooni** [baka da yo].
Yamada-Top fool is FP **that fellow-Top really** fool is FP
''Yamada is a fool, **that fellow really** [is a fool].''

(Kuno (1978a: 78))

The example in (20b) consists of two clauses. In the second clause, [*baka da yo*] (''is a fool'') is deleted, *aitsu wa hontooni* left behind.

[17] The basic idea of Kuno (1978a) is similar to that of Kuno (1978b).
[18] The two clauses just repeat the same sentence, and hence the first clause should be regarded as independent of the postverbal element.

Kuno (1978a, b) gives an additional argument against rightward movement analyses for JPVCs. He argues that JPVCs do not obey the Right Roof Constraint as shown in (13) and (14), reproduced in (21) with slight modification:

(21) a. [$_{CP}$ Φ_i Hanako-o aisiteiru koto]-ga hontoo da yo, **Taro$_i$-ga**
Hanako-Acc love that -Nom true is FP **Taro-Nom**
''That Φ_i loves Hanako is true, **Taro$_i$**.''
b. [$_{CP}$ Taro-ga Φ_i aisiteiru koto]-ga hontoo da yo, **Hanako$_i$-o**
Taro-Nom love that -Nom true is FP **Hanako-Acc**
''That Taro loves Φ_i is true, **Hanako$_i$**.''

According to Kuno (1978a: 74; 1978b: 61), if the Right Roof Constraint is a universal constraint on rightward movement, the acceptability of examples like (21) suggests that JPVCs are not derived by rightward movement, otherwise Japanese would constitute a counter-example to the Right Roof Constraint.

Kuno (1978a: 74-76) notices that the JPVC displays locality effects (see (4), (5)), but Kuno leaves this issue to future research.

4.2.2.2 Leftward movement analyses

There are two types of leftward movement analyses which assume that the JPVC is generated from a biclausal structure: (I) One approach assumes, following Kayne (1994), that two separate clauses are conjoined by a functional category taking the first clause in its specifier position and the second clause as its complement (e.g., Endo (1996), Whitman (2000)); (II) The other assumes, following Kuno (1978a, b), that two clauses just repeat the same sentence (see footnote 17) (e.g., Abe (2004), Tanaka (2001), Watanuki (2006)).

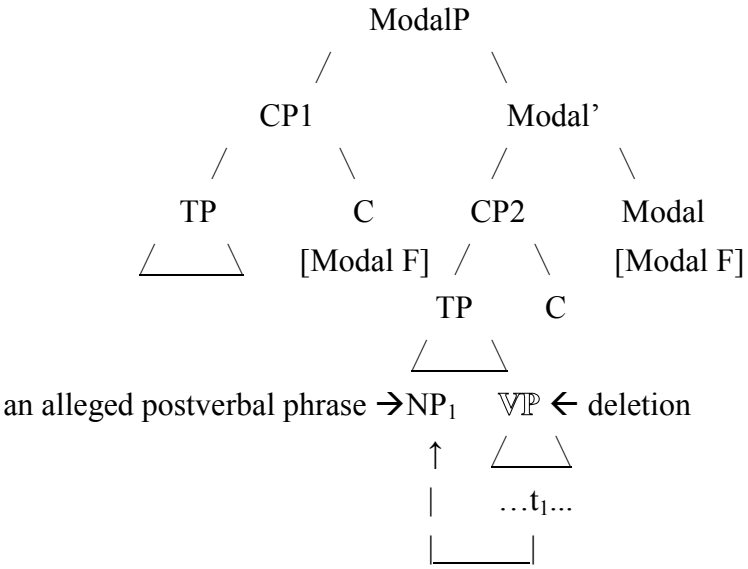
4.2.2.2.1 A Leftward Movement Analysis: Type I

Endo (1996) and Whitman (2000) claim, based on Kayne (1994), that JPVCs are formed by conjoining two clauses.[19] Endo (1996) assumes that there is a functional category called Modal, which ''has a modal feature to check off against the Modal element in its Spec'' (p. 5), and that as (22) shows, two almost identical clauses (CP1,

[19] Kayne (1994) proposes a similar analysis for the Right Dislocation construction in English and the Romance languages.

CP2) occupy the specifier position of a Modal Phrase and the complement position of the Modal head, respectively:

(22)

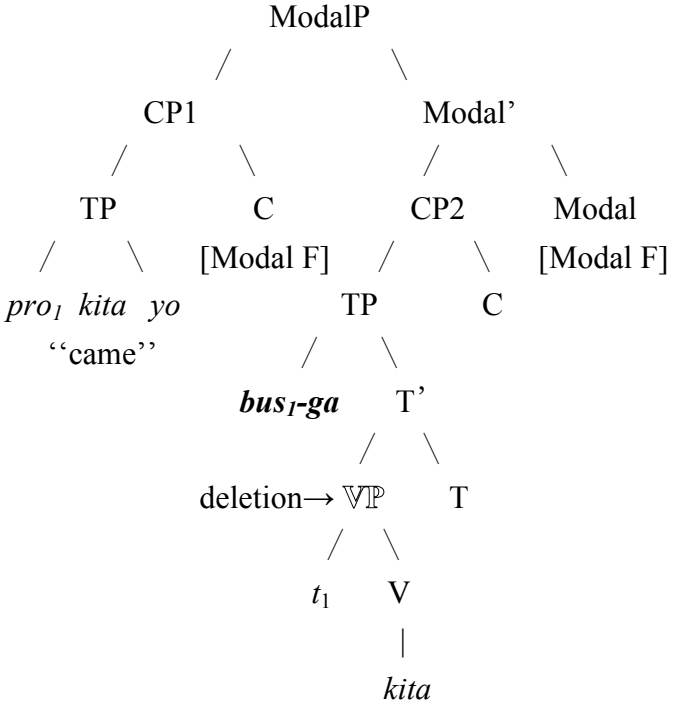


Endo (1996) also proposes that an argument (NP in (22)) in the complement part (CP2 in (22)) undergoes movement outside VP in overt syntax for Case checking (nominative, accusative), and that only VP in CP2 is deleted.[20] On this analysis, the source for the example in (23) is (24):

(23) Kita yo, **bus-ga**.
Came FP, **bus-Nom**
''Here comes **a bus**.''

[20] Whitman (2000) assumes that JPVCs are created by leftward scrambling. This possibility is mentioned in Endo (1996: 15n17) (see also footnote 24).

(24)



Adapted from (Endo (1996: 5))

In (24), the subject *bus-ga* in the second clause CP2 moves outside VP into the specifier position of TP for Case checking, and subsequently the remnant VP *kita* (''came'') is truncated. *Bus-ga* (''bus-Nom'') can thus survive truncation. [21]

The above argument also applies to the example in (25a) where an accusative Case marked NP appears postverbally. The underlying structure for (25a) would be (25b), in which *cake-o* (''cake-Acc'') in the clause CP2 is an alleged postverbal element:

(25) a. Taro-ga Φ_i tabeta yo, **ano cake$_i$-o**.
Taro-Nom ate FP **that cake-Acc**
''Taro ate $\Phi_{i,}$ **that cake$_i$**.''

b. [$_{CP1}$ Taro-ga tabeta yo] [$_{ModalP}$ [$_{CP2}$ [$_{TP}$[$_{AgrP}$ [$_{VP}$ Taro-ga
Taro-Nom ate FP Taro-Nom
ano cake-o tabeta]]]]]
that cake-Acc ate

c. Taro-ga tabeta yo, [$_{ModalP}$ [$_{CP}$ [$_{TP}$ [$_{AgrP}$ **ano cake-o** [$_{VP}$ Taro-ga ***t*** tabeta]]]]].
↑_____|

[21] It seems that Endo (1996) assumes that the morpheme *ta* is not located in the Tense head; otherwise, tense (i.e., *-ta*) would be left behind after VP truncation.

Endo (1996: 6-7) argues that, as (25c) shows, the accusative Case marked NP *ano cake-o* undergoes movement outside VP into the specifier position of AgrP for Case checking, so that *ano cake-o* can avoid VP truncation. Note that this analysis implies that overt Case checking movement is optional; otherwise the nominative Case marked NP *Taro-ga* would also move outside VP, surviving VP truncation.[22]

4.2.2.2.2 Problems with Endo (1996)

As discussed above, Endo (1996) claims that overt Case checking movement (nominative, accusative) enables alleged postverbal arguments to avoid VP truncation. In this subsection, I will critically examine problematic examples for Endo (1996).

Let us first observe the example in (26a).

(26) a. tabeta yo, **ano cake-o Taro-ga**.
ate FP **that cake-Acc Taro-Nom**
''Φ_i ate Φ_j, **that cake$_j$, Taro$_i$**.''

b. [$_{CP}$ *pro*$_i$ *pro*$_j$ tabeta yo] [$_{ModalP}$ [$_{CP}$ [$_{VP}$ **Taro-ga ano cake-o** tabeta]]].
ate FP Taro-Nom that cake-Acc ate

c. *pro*$_i$ *pro*$_j$ tabeta yo, [$_{TP}$ **Taro$_i$-ga** [$_{AgrP}$ **ano cake$_j$-o** [$_{VP}$ ***t*** $_i$ ***t***$_j$ tabeta].
↑ ↑ OK | |
| OK |

d. *pro*$_i$ *pro*$_j$ tabeta yo, [$_?$ **ano cake$_j$-o** [$_{TP}$**Taro$_i$-ga[**$_{ArgP}$ [$_{VP}$ ***t***$_i$ ***t***$_j$ tabeta]]]].
↑ ↑ OK | |
└ ? ┘

The source for (26a) would be (26b), where both *Taro-ga* and *ano cake*-o are within VP in the second clause.[23] As (26c) shows, for Case checking, the nominative Case marked NP *Taro-ga* moves to the specifier position of TP and the accusative Case marked NP *ano cake-o* moves to the specifier position of AgrP. However, since the specifier position of AgrP is lower in the syntactic structure than that of TP, *ano cake-o* cannot precede *Taro-ga* outside VP as shown in (26d). Thus, there is no way in Endo's (1996) analysis to derive (26a).

[22] It is unclear whether or not arguments in the first clause CP1 undergo overt Case checking movement.
[23] It is unclear whether Endo (1996) assumes that the first clause should contain an empty pronoun *pro* in object position.

The second problem concerns pronominal coreference.

(27) Taro$_i$-no hahaoya-ga kare$_i$-o hometa yo.
Taro-Gen mother-Nom he -Acc praised FP
''Taro$_i$'s mother praised him$_i$.''

(28) a. Taro$_i$-no hahaoya-ga hometa yo, **kare$_i$-o**.
Taro-Gen mother-Nom praised FP **he-Acc**
''Taro$_i$'s mother praised Φ_i, **him$_i$**.''
b. *Kare$_i$-o Taro$_i$-no hahaoya-ga t_i hometa yo.
He -Acc Taro-Gen mother-Nom praised FP
''Him$_i$, Taro$_i$'s mother praised t_i''

In (27), *kare* (''he'') can refer to *Taro*. In (28a), the postverbal phrase *kare* can also refer to *Taro*. On Endo's (1996) analysis, (28b) would correspond to the second clause in the source for (28a). In (28b), *kare-o* (''he-Acc'') is moved to the specifier position of ArgP by A-movement for feature checking, but it cannot be co-indexed with *Taro*. If the second clause in the sorce is ill-formed (due to a violation of the Binding Principle (C), which states that R-expressions must be free), it would be predicted that (28a) should be ruled out. The facts, however, are contrary to the prediction. Thus, Endo's (1996) analysis incorrectly excludes the possibility that *kare* refers to *Taro* in (28a).

The third problem comes from the fact that nonarguments such as genitive phrases, demonstratives and adjective phrases can appear in postverbal position, as discussed in 4.2.1.4. The problem is that there is no motivation for such elements to move outside VP. Endo (1999: 15) mentions the possibility that there are two ways for deriving JPVCs; scrambling and A-movement for feature checking.[24] Even if this possibility is accepted, however, it remains impossible to derive the examples in (15), repeated in (29):

[24] Endo (1996: 15) claims that the acceptable example in (i), where *John-ga* (''John-Nom'') is extracted out of a complex NP, is derived by scrambling, because A-movement (for feature checking) generally cannot move across a CP boundary.

(i) Kore wa [$_{NP}$ [$_{CP}$ *pro$_i$* kinoo nonda wine]] da yo, **John$_i$-ga**.
This –Top yesterday drank wine is FP **John-Nom**
''This is the wine that he drank, **John**.''

Endo (1996: 13n15) also notes that the example in (i) is explained by whatever explains the fact that Japanese is generally not subject to the Complex NP Constraint.

(29) a Hanako-ga Φ_i hon-o yomda yo **Ken$_i$-no**. [Genitive]
Hanako Nom book Acc read FP **Ken Gen**
"Hanako read **Ken's** book."
b. Kinoo tsuini Φ_i eega-o mita yo **ano$_i$**. [Demonstrative]
yesterday finaly movie Acc saw FP **that**
" (I) finally saw **that** movie."
c. Hanako-ga Φ_i kuruma-o katta yo [$_{AP}$ **sugoku ookii]$_i$**. [Adjective]
Hanako ga car Acc bought FP **very big**
"Hanako bought a **very big** car."

On Endo's (1996) analysis, the second clauses where the alleged postverbal elements undergo leftward scrambling would be (16), reproduced in (30):

(30) a ***Ken$_i$-no**, Hanako-ga [$_{DP/NP}$ t_i hon]-o yomda.
Ken-Gen Hanako-Nom book-Acc read
Lit. "**Ken's**, Hanako read book." (Hanako read Ken's book.)
b. ***Ano$_i$** kinoo tsuini [$_{DP/NP}$ t_i eega]-o mi-ta.
That (I-Top) yesterday finally movie -Acc saw
Lit. ''**That**, I finally saw movie yesterday.''
(I finally saw that movie yesterday.)
c. *[$_{AP}$ **Sugoku ookii]$_i$** Hanako-ga [$_{DP/NP}$ t_i kuruma]-o kat-ta.
Very big Hanako-Nom car -Acc bought
Lit. ''**Very big,** Hanako bought a car." (Hanako bought a very big car.)

As the examples in (30) show, none of the alleged postverbal elements can undergo scrambling due to a violation of the Left Branch Condition. Hence, Endo (1996) cannot create the examples in (29).

4.2.2.2.3 A Leftward Movement Analysis: Type II[25]

Abe (2004) and Tanaka (2001) assume, following Kuno (1978a), that the JPVC should be derived from two separate clauses, which have no hierarchical relation, as schematised in (31a).

(31) a. [$_{CP1}$ …(*pro*)…… ….], [$_{CP2}$ ……..]

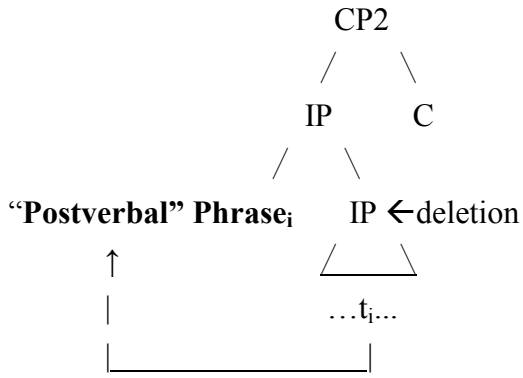
[25] In this subsection. I will mainlv discuss Tanaka (2001), because Abe (2004) and Tanaka (2001) propose almost the same analysis for the JPVC.

According to Tanaka (2001: 558-560), the first clause may or may not contain an empty pronoun *pro* as in (31a), and in the second clause CP2, a "postverbal" phrase is left-adjoined to IP by scrambling in overt syntax as shown in (31b), which is the S-structure representation.[26] Tanaka (2001) proposes further that the IP to which the ''postverbal'' phrase adjoins is deleted in the second clause, as diagrammed in (32):

(31) b. $[_{CP1}\ldots$ (*pro*$_i$)……....], $[_{CP2}\,[_{IP}$ ''**postverbal'' phrase$_i$** $[_{IP}$……t_i……]][27]

Scrambling

(32)



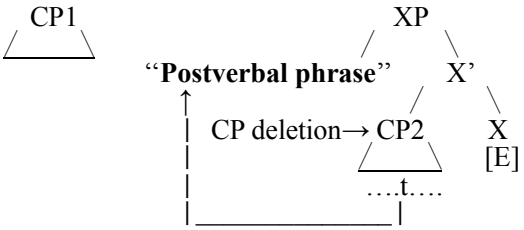
On this analysis, the example in (33) is derived in the way illustrated in (33):

(33) Toaro-ga *pro* kinoo kat-ta yo **kuruma-o**
Ken-Nom yesterday bought FP **car -Acc**
Lit. "Ken bought it yesterday, **a car**." (Ken bought a car yesterday.)

[26] Although Tanaka (2001) follows Saito (1985) in assuming that the operation of scrambling left-adjoins an element to IP, Tanaka claims that nominative Case marked NPs may undergo clause-internal scrambling.

[27] A similar analysis for the JPVC is proposed by Watanuki (2006), who assumes that there is a functional category X which takes the second clause CP2 as its complement, and that a feature called [E] located in X forces an element to move out of CP2 to the specifier position of the functional category. Thus, Watanuki claims that CP2 is deleted under identity with the first clause CP1, as depicted in (i), where CP1 and XP are not conjoined by any elements:

(i)



Adapted from (Watanuki (2006: 259))

(34) a. [Ken-ga *pro* kinoo kat-ta yo], [$_{IP}$ Ken-ga **kuruma-o** kinoo kat-ta yo][28]

—scrambling of *kuruma-o* (“car-Acc”)→

b Ken-ga pro kinoo kat-ta yo, **kuruma$_i$-o** [$_{IP}$ Ken-ga t_i kinoo kat-ta yo].

↑_____|

—deletion of the remnant IP→

c. Ken-ga *pro* kinoo kat-ta yo, **kuruma$_i$-o** ~~[$_{IP}$ Ken-ga t_i kinoo kat-ta yo]~~.

The example in (33) has an underlying structure as given in (34a), where an empty pronoun *pro* appears in the first clause and the “postverbal” element *kuruma-o* (‘‘car-Acc’’) is base-generated in a canonical position in the second clause. Then, *kuruma-o* undergoes scrambling, and is left-adjoined to the IP in the second clause as illustrated in (34b). Finally, as (34c) shows, the lower IP in the second clause is deleted.

The above derivation indicates that there is no syntactic movement relation between a gap (i.e., *pro*) in the first clause and a postverbal phrase in the second clause. To support this, Tanaka argues against a rightward movement derivation of the JPVC. Tanaka points out that the examples in (35) have a number of syntactic properties in common with those in (36), where the gap is filled with a lexical item identical with a postverbal phrase:

(35) a. *?John-ga [$_{NP}$ [$_{CP}$ Mary-ga Φ_i ageta] hon]-o nusunda yo, **Bill$_i$-ni**.
John-Nom Mary-Nom gave book -Acc stole FP **Bill-Dat**
‘‘John stole the book that Mary gave to *him*$_i$, **to Bill$_i$**.’’

b. *? John-ga [$_{NP}$[$_{CP}$ Mary-ga Φ_i nagut-ta toiu] uwasa]-o sinziteiru yo**,**
John-Nom Mary-Nom hit that rumour -Acc believe FP
Bill-o$_i$
Bill-Acc
“John believes the rumour that Mary hit *him$_i$*, **Bill$_i$.**”

(36) a. *?John-ga [$_{NP}$ [$_{CP}$ Mary-ga Bill$_i$ -ni ageta] hon]-o nusunda yo, **Bill$_i$-ni**.
John-Nom Mary-Nom Bill-Dat gave book -Acc stole FP **Bill-Dat**
‘‘John stole the book that Mary gave to Bill$_i$, **to Bill$_i$.**’’

[28] Tanaka (2001: 551n3) assumes that final particles such as *yo* are attached to the end of the sentence.

b. *? John-ga [$_{NP}$[$_{CP}$ Mary-ga Bill$_i$-o nagut-ta toiu] uwasa]-o sinziteiru yo,
John-Nom Mary-Nom Bill-Acc hit that rumour-Acc believe FP
Bill-o$_i$
Bill-Acc
"John believes the rumour that Mary hit Bill$_i$, **Bill$_i$.**"
Adapted from Tanaka (2001: 555, 556)

In (35a), the postverbal NP *Bill-ni* (''Bill-Dat'') cannot be associated with the gap Φ_i within the relative clause Complex NP [$_{NP}$ [$_{CP}$ *Mary-ga* Φ_i *ageta*] *hon*] (''the book that Mary gave''), and likewise in (35b), *Bill$_i$-o* (''Bill-Acc'') cannot be linked with the gap Φ_i inside the noun complement Complex NP [$_{NP}$ [$_{CP}$ *Mary-ga nagut-ta toiu*] *uwasa*] (''the rumour that Mary hit''). The examples in (35) thus display locality effects. The examples in (36) also show locality effects of the same kind: in (36a), the postverbal phrase *Bill-ni* fails to be associated with the identical lexical item inside the relative clause Complex NP, and in (36b), the postverbal element *Bill-o* cannot be linked with the identical lexical item within the noun complement Clause NP. Tanaka claims that if the JPVC were derived from a monoclausal structure by rightward movement, it is difficult to capture the parallelism between (35) and (36) with respect to locality effects because the examples in (36) do not involve syntactic movement. On Tanaka's analysis, (35) and (36) would have the structure as schematically shown in (37), where there is no syntactic movement relation between a gap (i.e., *pro*) in the first clause and an alleged postverbal phrase (see also Abe (2004: 58-59)):

(37) [……..Bill$_i$-ni/o/*pro*$_i$…….], [Bill$_i$-ni/o [……*t*$_i$…….]]
↑_____|

In (37), movement takes place in the second clause regardless of whether the first clause contains *pro* or an overt NP, which is expected to be associated with an alleged postverbal phrase. That is, what occurs in the first clause is independent of the locality effects observed in the second clause. (37) can thus account for the locality effects observed in (35) and (36) in the same way; the Subjacency Condition is violated in the second clause.

Tanaka (2001: 562) provides an additional argument against the claim that the JPVC is derived by a rightward version of scrambling, on the basis of the fact that a postverbal element cannot appear in an embedded environment (see Chapter 2):

(38) a. John-ga [Mary-ga LGB-o yomda to] itta yo.
John-Nom Mary-Nom LGB-Acc read Comp said FP
‘‘John said that Mary read LGB.’’

b. John-ga [LGB_i-o Mary-ga t_i yomda to] itta yo.
John-Nom LGB-Acc Mary-Nom read Comp said FP
‘‘John said that LGB, Mary read.’’

c. * John-ga [Mary-ga yomda, **LGB-o** to] itta yo.
John-Nom Mary-Nom read **LGB-Acc** Comp said FP
‘‘John said that Mary read it, **LGB**.’’

(38b) is derived from (38a) by applying clause-internal scrambling to *LGB-o* (‘‘LGB-Acc’’). In (38c), *LGB-o* undergoes rightward movement. If the JPVC was derived from (38a) by a rightward version of scrambling, (38c) would be as acceptable as (38b). However, (38c) is unacceptable. Thus, Tanaka (2001) suggests that the derivation of the JPVC does not involve a rightward version of scrambling. Note that since Tanaka (2001) assumes that the derivation of the JPVC involves leftward movement, Tanaka can account for the absence of the Right Roof Constraint effect like Kurogi (2006).

Assuming that subordinate clauses, unlike matrix clauses, cannot be repeated for pragmatic reasons, Tanaka (2001: 562ff.) goes on to argue that his proposed analysis accounts for why (38c) is ruled out. Tanaka claims that as (39a) shows, a matrix clause can be repeated without deletion or any empty pronoun in a pragmatically appropriate context (e.g., the speaker wants to emphasise the information of the sentence), and that a subordinate clause cannot be repeated within a subordinate clause as shown in (39b):

(39) a. Mary-ga LGB-o yom-da yo, Mary-ga LGB-o yom-da yo.
Mary-Nom LGB-Acc read FP Mary-Nom LGB-Acc read FP
“Mary read LGB, Mary read LGB.”

b.*John-ga [Mary-ga LGB-o yom-da, Mary-ga LGB-o yom-da to]
John-Nom Mary-Nom LGB-Acc read Mary-Nom LGB-Acc read Comp
it-ta yo.
said FP
‘‘John said that Mary read LGB, Mary read LGB.’’

(Tanaka (2001: 562))

Based on the above observation, Tanaka argues that the underlying structure for (38c)) would be (40):

(40) *John-ga [[Mary-ga *pro* yom-da], [Mary-ga LGB-o yom-da] to] it-ta yo.
John-Nom Mary-Nom read Mary-Nom LGB-Acc read Comp said FP
(Tanaka (2001: 563))

Tanaka claims that (40) is ill-formed for the same reason as (39b)—the subordinate clause is repeated within the subordinate clause—and hence, that the example in (38c) is unacceptable.

4.2.2.2.4 Problems with Tanaka (2001)

In this subsection, I will demonstrate three problems with Tanaka (2001). The first problem with Tanaka (2001) comes from the fact that adjuncts such as adjectives can appear postverbally, whereas such adjuncts cannot undergo scrambling, as discussed earlier, the relevant examples reproduced in (41) and (42), respectively, for ease of reference:

(41) a Hanako-ga Φ_i hon-o yomda yo **Ken$_i$-no**. [Genitive]
Hanako Nom book Acc read FP **Ken Gen**
"Hanako read **Ken's** book."
b. Kinoo tsuini Φ_i eega-o mita yo **ano$_i$**. [Demonstrative]
yesterday finally movie Acc saw FP **that**
" (I) finally saw **that** movie."
c. Hanako-ga Φ_i kuruma-o katta yo [$_{AP}$ **sugoku ookii**]$_i$. [Adjective]
Hanako ga car Acc bought FP **very big**
"Hanako bought a **very big** car."

(42) a ***Ken$_i$-no**, Hanako-ga [$_{DP/NP}$ t_i hon]-o yomda.
Ken-Gen Hanako-Nom book-Acc read
Lit. "**Ken's**, Hanako read book." (Hanako read Ken's book.)
b. ***Ano$_i$** kinoo tsuini [$_{DP/NP}$ t_i eega]-o mi-ta.
That (I-Top) yesterday finally movie -Acc saw
Lit. ''**That**, I finally saw movie yesterday.''
(I finally saw that movie yesterday.)

c. *[$_{AP}$ **Sugoku ookii]$_i$** Hanako-ga [$_{DP/NP}$ t_i kuruma]-o kat-ta.
Very big Hanako-Nom car -Acc bought
Lit. ‘‘**Very big,** Hanako bought a car.” (Hanako bought a very big car.)

Since Tanaka (2001) assumes that the direction of movement is always leftward, Tanaka faces the same kinds of problems as Kurogi (2006) and Endo (1996) do, with respect to the examples in (41). That is, it is impossible to obtain well-formed underlying structures because the Left Branch Condition is violated in the second clause, as shown in (42).

We may note, in passing, that, to solve the above problem, Watanuki (2006) proposes that deletion of the traces of scrambled phrases within remnant IPs makes ungrammatical extraction possible (island repair) (see Merchant (2004)). On Watanuki’s analysis, the underlying structure for (42a) would be (43), where *t indicates the trace of *Ken-no* (‘‘Ken-Gen’’),

(43) Hanako-ga hon-o yomda yo, **Ken$_i$-no**, [$_{IP}$ ~~Hanako-ga [*t_i hon]-o yomda~~]
Hanako-Nom book-Acc FP **Ken-Gen** Hanako-Nom book-Acc read
‘‘Hanako read a book, **Ken’s**, Hanako read a book.”
(Hanako read Ken’s book.)

In (43), *t is deleted together with the remnant IP [$_{IP}$ *Hanako-ga* *t_i *hon-o yomda*]. As a result, the second clause does not violate the Left Branch Condition, and hence (43) is accepted.[29] This analysis predicts that the JPVC shows no locality effects because deletion of traces can rescue all island violations. The facts, however, are contrary to the prediction, as observed earlier. Thus, Watanuki suggests that all locality effects seen in the JPVC should be accounted for in terms of the notion of ‘‘linearity’’. Yet, Watanuki (2006) does not discuss locality effects in detail. I will return to the issue concerning locality effects in section 4.5.

The second problem with Tanaka (2001) concerns pronominal coreference. Tanaka claims that on his analysis, (44a) corresponds to the second clause in (44b) before the remnant IP is deleted, and hence, that the grammatical status of (44b) should be the same as that of (44a) ; both of them violate the Binding Principle (C), which applies at S-structure: [30,31]

[29] It is necessary to assume that the Left Branch Condition is a representational constraint (cf. footnote 16).
[30] Tanaka (2001: 565n12) notes that the Binding Principle (C) applies before deletion.
[31] In (44b), *kare-ga* (‘‘he’’) is leftward moved by a string-vacuous scrambling operation, which is an A-movement (see also Tanaka (2001: 567, 569ff.)).

(44) a. * Kare$_i$-ga [[Mary-ga John$_i$-ni okut-ta] tegami]-o mada yonde inai.
He Mary-Nom John-Dat sent letter -Acc yet read Neg
"He$_i$ has not read the letter that Mary sent to John$_i$."

b. *[[Mary-ga John$_i$-ni okut-ta] tegami]-o mada yonde inai yo, **kare$_i$-ga**.[32]
Mary-Nom John-Dat sent letter-Acc yet read Neg FP, he
Lit. "(He$_i$) has not read the letter that Mary sent to John, **he$_i$**."
(Tanaka (2001: 564-565))

In my judgement, (44b) is not so bad, if not completely acceptable. Even if I follow his judgement, however, when the Topic particle *wa* is attached to *kare* ("he") instead of nominative counterpart *ga,* the acceptability of (44b) is improved as shown in (45b), whereas no effects are observed in the non-JPVC as (45a) shows: [33]

(45) a. * Kare$_i$-wa [[Mary-ga John$_i$-ni okut-ta] tegami]-o mada yonde inai.
He -Top Mary-Nom John-Dat sent letter -Acc yet read Neg
"He$_i$ has not read the letter that Mary sent to John$_i$."

b. [Mary-ga John$_i$-ni okut-ta tegami]-o mada yonde inai yo, **kare$_i$ -wa**.
Mary-Nom John-Dat sent letter-Acc yet read Neg FP, he-Top
Lit. "(He$_i$) has not read the letter that Mary sent to John, **he$_i$**."

If (45a) corresponds to the second clause in (45b) before the remnant IP is deleted, Tanaka would predict the grammatical status of (45b) to be the same as that of (45a). However, the prediction is incorrect.

The above argument also applies to the examples in (28), repeated in (46):

(46) a. Taro$_i$-no hahaoya-ga hometa yo, **kare$_i$-o**.
Taro-Gen mother-Nom praised FP **him**
''Taro's mother praised, **him**.''

b. *Kare$_i$-o [$_{IP}$ Taro$_i$-no hahaoya-ga t_i hometa yo].
Him Taro-Gen mother-Nom praised FP
''Him, Taro's mother praised''

[32] This is Tanaka's judgement.
[33] Discourse factors may have to do with the acceptability. Generally, NPs marked with nominative case particles are introduced as new referents into discourse, and on the other hand, topic phrases convey discourse-old information. If postverbal elements tend to be discourse-old, (45b) will be compatible with the information structure of the JPVC than (44b). See Takami (1995) for a functional analysis of the JPVC.

As discussed earlier, in (46a), *Taro* can be co-indexed with *kare*, whereas in (46b), *Taro* cannot. Tanaka would claim that the second clause in the source for (46a) would be (46b), where *kare-o* is left-adjoined to IP by scrambling. Thus, Tanaka would incorrectly predict (46b) to be as bad as (46a).

The third problem with Tanaka (2001) is that it is incorrectly predicted that quantified NPs cannot appear postverbally.[34] Recall that Tanaka assumes that the first clause in an underlying structure may or may not contain an empty pronoun *pro*. Although Tanaka does not describe in detail how to associate a postverbal phrase with *pro*, we may infer from the following quotation that the two relevant elements are associated with each other via co-indexation (note that Tanaka seems to assume that clauses should be co-indexed with pronouns):

> . . . Specifically, I [=Tanaka] suggest that . . . the S-structure representation in (44).
>
> (44) $[_{S1}$ John-ga pro_i itta yo], $[_{S2}$ [Mary-ga pro_i yomda-tte]$_i$ John -ga
> NOM said NOM read COMP NOM [*sic*] NOM
> itta yo], $[_{S3}$ LGB-o_i] ~~John-ga [Mary-ga t_i yomda tte]~~ ~~itta yo~~].
> said ACC NOM NOM read COMP said
>
> The claim being here is that (44) contains three clauses. The first clause, S1, contains an empty pronoun, pro_i. Being an empty pronoun, this category is not subject to the PBC [Proper Binding Condition]. Similarly, the second clause, S2, contains an empty pronoun, pro_j, to which the PBC does not apply. . . . (p. 569)

Before discussing the third problem, let us observe the following examples in which the establishment of coreference between NPs and pronouns does not depend on *c-command*.[35]

(47) a. The woman who saw John$_i$ in the garage said he$_i$ ran away.
b. The woman who saw someone$_i$ in the garage said he$_i$ ran away.
c. *The woman who saw everybody/nobody$_i$ in the garage said he$_i$ ran away.
(Baker (1995: 42))

[34] This problem is not directly related with Tanaka's claim that the JPVC is derived from a biclausal structure. However, without describing explicitly how to associate an empty *pro* in the first clause with a postverbal element, Tanaka's analysis would fail to capture the intuition that *pro* and the postverbal element have a close relationship syntactically and semantically.

[35] For ease of exposition, in the present section (i.e., 4.2), I define *c-command* as follows: α c-commands β if and only if α does not dominate β and the first branching node dominating α dominates β.

The pronouns in (47a-b) can be co-indexed with the referential expressions *John* and *someone*, respectively. As (47c) shows, however, the quantifiers *everybody/nobody* fail to be antecedents of a pronoun.

The same observation applies to Japanese quantifiers. In (48), each pronoun is not c-commanded by its potential antecedent. In (48a), *soitsu* (''the guy'') can refer to *Taro*. Likewise in (48b), *soitsu* can refer to *dareka* (''someone''). In (48c), however, *soitsu* cannot refer to the non-referential NP *donohitomo* (''everyone'').

(48) a. [[Taro$_i$-o gareiji de mi-ta otoko]-wa soitsu$_i$-ga nige-ta to] it-ta.
Taro-Acc garage in saw man -Top the guy-Nom ran away Comp said
"The man who saw Taro in the garage said he ran away."

b. [dare$_i$-ka-o gareiji de mi-ta otoko]-wa soitsu$_i$-ga nige-ta to it-ta.
someone-Acc garage in saw man -Top the guy-Nom ran away Comp said
''The man who saw someone$_i$ in the garage said he$_i$ ran away.''

c.*?[donohitomo$_i$ gareiji de mi-ta otoko]-wa soitu$_i$-ga nige-ta to it-ta.
everyone garage in saw man -Top the guy-Nom ran away Comp said
"The man who saw everyone in the garage said he ran away."

The above observations fall under the descriptive statement given informally in (49):

(49) Co-indexing a quantified NP with a pronoun is impossible if they lack *c-command* relations.[36]

With (49) in mind, let us return to Tanaka (2001). As mentioned earlier, Tanaka assumes that sentences with a postverbal element consist of two separate clauses which have no hierarchical relation with each other. The first clause may contain an empty category *pro* which is co-indexed with the relevant postverbal phrase as shown in (33a), reproduced in (50):

(50) [$_{CP1}$… *pro*……....], [$_{CP2}$ [$_{IP}$ ''**postverbal'' phrase$_i$** [$_{IP}$……t$_i$ ……]
↑_____|
Scrambling

If a postverbal phrase is a quantified NP, the postverbal phrase cannot be co-indexed with an empty pronoun (i.e., *pro*) in (50), in accordance with (49); in (50) *pro* cannot refer to such a postverbal phrase. Hence, the first clause in (50) has an LF

[36] I will later consider the case where quantifiers c-command pronouns.

representation different from the one which the second clause has, resulting in a semantic mismatch between the first clause and the second counterpart. Thus, the structure in (50) predicts that no quantified NPs may appear in postverbal position. This prediction, however, is contradicted by the fact that a quantified NP can appear postverbally, as shown in (51):[37]

(51) Boku-wa *pro* awa-nakat-ta yo, **darenimo**
I -Top meet-Neg-Past FP, anyone
"I did not meet anyone."

On Tanaka's analysis, the structure for (51) would be (51'):

(51') [boku-wa *pro* awanakatta yo], [[$_{IP}$ **darenimo**$_i$[$_{IP}$ boku-wa t_i awanakatta yo]]]

Since *darenimo* (''anyone'') is a quantified NP, *pro* cannot be co-indexed with *darenimo* in (51'). Hence, the first clause in (51') would have the reading that *I did not meet* for example *a specific person*, and the second one would have the reading that *I did not meet anyone*. That is, there is a semantic mismatch between the two clauses. In order to avoid such a semantic mismatch, it is necessary to assume that the first clause in (51') should contain an empty category other than *pro*. This view is supported by the availability of the idiomatic interpretation in the JPVC (see also Fujimaki (2006)). Let us consider the examples in (52) which contain an idiomatic expression *saji-o nageta* (''gave up'):

(52) a. Taro-wa saji-o nage-ta yo.
Taro-Top spoon-Acc threw FP
b. Saji$_i$-o Taro-wa t_i nage-ta yo.
Spoon-Acc Taro-Top threw FP
c. Taro-wa pro nage-ta yo, **saji-o** [=(11b) in Chapter 2]
Taro-Top threw FP spoon-Acc
"Taro gave up."
"Taro threw a spoon."

[37] The same type of example has been observed in Chapter 2, the example reproduced in (i):

(i) *Φ* ko naka-ta yo, **daremo**.
Come Neg-Past FP anyone
''Nobody came.''

The examples (52a-c) are ambiguous; one is an idiomatic reading and the other the literal reading. The idiom chunk *saji-o* (‘‘spoon-Acc’’) is scrambled in (52b). *Saji-o* appears in postverbal position in (52c), which has the structure in (52c’) if Tanaka is correct:

(52) c’ [Taro-wa pro_i nage-ta yo], [**saji$_i$-o** [~~Taro-wa t_i nage-ta yo~~]]

If *saji* (‘‘spoon’’) is a referential NP in (52c’), then it can be co-indexed with *pro*, and thus (52c) is acceptable in the literal interpretation. In contrast, if *saji* is an idiom chunk, then it could not be co-indexed with *pro*, as the idiom chunk *saji* cannot be the antecedent of an overt pronoun *sore* (‘‘it’’) in (53):[38]

(53) *Taro-wa saji-o nage-ta kedo Hanako wa sore-o nage-nakat-ta
Taro-Top spoon-Acc throw-Past but Hanako-Top it-Acc throw-Neg-Past
‘‘Taro gave up but Hanako did not give up.’’

(52c) would hence be unacceptable in the idiomatic reading. The idiomatic interpretation, however, is available in (52c). Accordingly, *pro* in the first clause in (52c’) is inappropriate.

The claim that null arguments are not necessarily pronouns is further supported by the observation that reflexives such as *zibun* (“self”) can appear postverbally, as shown in (54), where *zibun* (“self”) may refer to the subject *Taro*.

(54) Taro-ga *pro* seme-ta yo, **zibun-o**.
Taro-Nom criticised FP **self-Acc**.
“Taro criticised **himself**.”

(54’) [Taro$_i$-ga pro_j seme-ta yo], [zibun$_j$-o [~~Taro$_i$-wa t$_j$ seme-ta yo~~]]

Suppose that the example in (54) has the structure in (54’), where *pro* is co-indexed with *zibun* (‘‘self’’). In order for (54) to have the reading that *Taro* criticised himself, *Taro* should be co-indexed with *zibun*, and thereby *Taro* would be co-indexed with *pro* as well. However, co-indexing *Taro* with *pro* is impossible for the same reason

[38] In English, however, some idiom chunks can be antecedents of pronouns:

(i) Care was taken of the orphans, but it was insufficient.

(Chomsky (1981: 327))

that co-indexing *Taro* with *kare* (''he'') is impossible in (55), where a pronoun *kare* (''he'') is bound by *Taro*, violating the Binding Principle (B):[39]

(55) * Taro_i-ga kare_i-o seme-ta yo.
Taro-Nom he-Acc criticised FP.
''Taro_i criticised him_i.''

Hence, for (54) to have the reading that *Taro* criticised himself, the null argument should not be an empty pronoun *pro* (see also Baker (1996: 49); Takahashi (2006)). Note that if *zibun* occupies an A-position in (54), it A-binds *Taro* in the second clause, violating the Binding Principle (C) (see (44b); cf. Footnote 30).

As shown above, it is difficult to support the claim that an empty pronoun *pro* should be postulated as a null argument in the first clause regardless of whether or not the postverbal NP is referential. I will have more to say about empty categories in Japanese later on.

4.2.3 Interim conclusion

In the previous subsections, I have shown that there are many empirical problems with movement analyses whether movement is leftward or rightward. We therefore conclude that movement analyses for the JPVC are untenable. I will henceforth assume that the derivation of the JPVC involves no movement. In the following subsection, I will review Soshi and Hagiwara (2004) to provide a basis for a discussion of nonmovement analyses.

4.2.4 The Monoclausal Structure of the JPVC: A nonmovement analysis

In this subsection, I will focus on Soshi and Hagiwara (2004) who argue that the JPVC is derived from a monoclausal structure without movement. I will first give a brief summary of their analysis, and then point out a couple of problems with their analysis.

4.2.4.1 Soshi and Hagiwara (2004)

[39] The Binding Principle (B) can be roughly stated as follows:

i) A pronominal cannot be A-bound by an NP within the same clause.

Soshi and Hagiwara (henceforth S&H) (2004) argue that the derivation of the JPVC involves no movement. S&H assume that (56a) and (56b) have different underlying representations as illustrated in (57a-b), which are based on the argument/adjunct asymmetry in syntactic operations:

(56) a. konsato de Hanako-ga hiku-yo, **chero-o.**
concert in Hanako-Nom played cello-Acc.
"Hanako plays **the cello** in a concert."
b. Hanako-ga chero-o hiku yo, **konsato de**.
Hanako-Nom cello-Acc play FP concert in
"Hanako plays the cello **in a concert**."

(57) a. $[_{CP}[_{CP}$……..pro_i…….] $[XP_i]]$ where XP is a postverbal argument
b. $[_{CP}[_{CP}$……] [XP]] where XP is a postverbal adjunct
Adapted from (S&H (2004: 419, 434))

S&H (2004) claim that the postverbal elements indicated by XPs are base-adjoined to sentence final positions in (57), where *pro* indicates a null argument. S&H also propose that if a postverbal element is an argument and the CP involves a *pro* as shown in (57a), the postverbal argument is licensed through co-indexation with the *pro* and that if a postverbal element is an adjunct/nonargument, *pro* is not included in the CP as shown in (57b). Then, S&H (2004) argue that a postverbal adjunct is licensed by the following condition:

(58) The Unambiguous Modification Condition (UMC)
Modify the closest "possible"modifiee.
(S&H (2004: 424))

S&H note that the factor of closeness in the UMC is a notion specific to postverbal adjuncts. S&H show that the difference in acceptability between (59a) and (59b) depends on which element is the closest possible modifiee.

(59) a. [$_{NP}$[shushou-ga kinoo attei-ta] josei]-o shi-tte-ru yo,
prime minister-Nom yesterday met woman-Acc know FP
Shinbashi-no ryoutei de.
Shinbashi-Gen Japanese-style restaurant at
"(I) know the woman (whom) the prime minister met with **at a Japanese-style restaurant in Shinbashi** yesterday."

b.*[$_{NP}$[shushou-ga kinoo a-tta] josei]-o mi-tanda yo,
prime minister-Nom yesterday met woman-Acc saw FP
Shinbashi-no ryoutei de
Shinbashi-Gen Japanese-style restaurant at
"(I) saw the woman (whom) the prime minister met with **at a Japanese-style restaurant in Shinbashi** yesterday."

(S&H (2004: 423))

In (59a), the locative adverbial *Shinbashi-no ryoutei de* ("at a Japanese-style restaurant in Shinbashi") cannot modify the matrix verb *shi-tte-ru* ("know"), and hence the adverbial can skip the matrix verb, thereby modifying the embedded verb *atte-ita* ("met"), which is the closest possible modifiee. By contrast, in (59b), the locative adverbial can modify the matrix verb *mi-tanda* ("saw") as well as the embedded verb *a-tta* ("met"). The matrix verb, which is the closest possible modifiee, prevents the embedded verb from being modified by the local adverbial.

S&H argue further that parsing factors also constrain the licensing of the postverbal elements:

(60) a. *[Taro-ga matte-ru kara] yotei -o kae-te] iku yo, **gakko de**
Taro-Nom waiting because schedule-Acc change go FP school at
"Because Taro waits for (me) **at school,** (I) will change (my) schedule and go (to school)."

b. [Taro-ga matte-ru kara] iku yo, **gakko-de**.
Taro-Nom waiting because go FP school-at
"Because Taro waits for (me) **at school**, (I) will go. (to school)."

(S&H (2004: 426))

In (60a), the postverbal adjunct *gakko-de* ("at school") can modify neither *yotei-o kae-te* ("(I) change (my) schedule") nor *iku* ("go"), and hence the closest possible modifiee is *matte-ru* ("wait for"). However, the example is unacceptable. S&H attribute the unacceptability of (59a) to a parsing difficulty that would be caused by

retention of the possible modifiee for a relatively long time. On the other hand, (60b) does not require more working memory resources, and hence it is acceptable. S&H (2004: 427) note that the parsing factor of distance is a general condition, and hence, that it also constrains the establishment of the co-indexation of a postverbal element with *pro*.

4.2.4.2 Problems with S&H (2004)

At first sight, it seems that the nonmovement analysis proposed in S&H (2004) has advantages over any movement analyses, in particular, in respect of the case where nonarguments appear in postverbal position. In this subsection, however, I will argue that S&H's (2004) proposal is inadequate with respect to several types of examples which cannot be ignored, and that S&H's (2004) analysis does not go beyond a description of the phenomena.

4.2.4.2.1 An empty pronoun *pro* revisited

S&H (2004) face the same kind of problem as Tanaka (2001) does (see 4.2.2.2.3), because S&H assume that in the case of the postverbal argument, an empty category *pro* is contained in the JPVC, reproduced in (61):

(61) $[_{CP}[_{CP}$……..pro_i…….] $[XP_i]]$ where XP is a postverbal argument

However, the structure in (61) is different from that in (31b) with respect to the structural relationship between *pro* and a postverbal phrase:

(62) $[_{CP1}$… (pro_i)……...], $[_{CP2}\,[_{IP}$ ‘‘**postverbal’’ phrase$_i$** $[_{IP}$……t_i……] [=(31b)]

↑_____|

Scrambling

In S&H, *pro* is c-commanded by the postverbal phrase, and in Tanaka (2001) (i.e., (62)), on the other hand, *pro* is not c-commanded by the postverbal phrase. Hence, I would like to consider a pronoun which has a *c-command* relation with a quantified NP before critically examing the representation in (61).

Rizzi (1986) observes that quantified NPs such as *nessuno* (“nobody”) and *tutto* (“everything”) cannot be dislocated in Italian, as shown in (63), whereas such NPs

can be topicalised, as shown in (64), where the capital letter indicates that focal stress is placed on the topicalised phrase:

(63) a.*Nessuno, lo canosco in questa citta.
Nobody, him I know in this city
"Nobody, I know him in this city."
b.*Tutto, lo diro' alla polizia.
Everything it I will say to the police
"Everything, I will say to the police."

Adapted from (Rizzi (1986: 395))

(64) a. NESSUNO, conosco Φ in questa citta.
"Nobody, I know in this city."
b. TUTTO, diro' Φ alla polizia.
"Everything, I will say to the police."

(Rizzi (1986: 395))

In order to capture the contrast between (63) and (64), Rizzi (1986) proposes the following statement:

(65) A pronoun cannot be locally A-bar bound by a quantified NP.

Adapted from (Rizzi (1986: 395))

Rizzi argues further that "this statement [=(65)] essentially amounts to claiming that pronouns cannot function as primary variables, and can acquire variable status only parasitically, through binding from licit primary variables" (p. 395).[40] As Baker (1995) points out, the statement in (65) can apply to the so-called weak crossover phenomenon, as exemplified in (66), where *his* cannot be interpreted as a variable bound by *who*:

(66) ?*[$_{CP}$ Who$_i$ does [$_{TP}$ his$_i$ mother love t_i]]?

[40] Baker (1995: 35; 1996: 54) interprets "parasitically" to mean that pronouns can become variables only through being c-commanded by a trace, which is a primary variable. This interpretation is confirmed by the following example:

(i) a. Who$_i$ loves his$_i$ mother?
b. [who$_i$ [t_i loves his$_i$ mother]]

In (ia), *who* occupies the specifier position of CP, but its trace A-binds *his*, as shown in (ib). *His* can hence have a bound variable interpretation.

In (66), *who* occupies an A-bar position (i.e., the specifier position of CP), and thereby it cannot bind *his*.[41] Hence, *his* cannot have a bound variable interpretation.

Similarly, the statement in (65) can account for the contrast between (67a) and (67b): [42]

(67) a. Chris_i, I saw her_i in the market yesterday.

b.*Nobody_i, I saw her_i in the market yesterday.

(Baker (2001: 108))

In (67a), the dislocated NP *Chris* occupies an A-bar position, but *Chris* is not a quantified NP. *Chris* can thus A-bar bind *her*. On the other hand, in (67b), *nobody* is a quantified NP, and hence it cannot A-bar bind *her*.

Baker (1995, 1996) applies (65) to give an explanation for the absence of quantifiers in Mohawk that correspond to those in English such as *nobody* and *every*. Baker observes that overt NPs in Mohawk do not appear in argument position, and that a pronoun occupies that position. According to his licensing condition, an overt NP adjoined to the clause at the S-structure level must be coindexed with a pronoun in an argument position (Baker (1995: 43; 1996: 414)). In other words, when an overt NP adjoins to the clause, syntactic structures in Mohawk are similar to dislocation structures like (63) and (67). Thus, if a quantified NP is adjoined to the clause, then it must be coindexed with a pronoun in an argument position (to meet his licensing condition mentioned above), and thereby it would locally A-bar bind the pronoun. This binding, however, is impossible according to (65). That is, the quantified NP in Mohawk, which does not appear in an argument position, fails to have an anaphoric relation with a pronoun. Hence, true quantifiers are not allowed in Mohawk.

Now, let us return to the representation in (61), reproduced in (68):

(68) $[[_{CP}\ldots\ldots\ldots pro_i\ldots\ldots\ldots] [XP_i]]$ where XP is a postverbal argument

As observed earlier, a quantified NP can appear in postverbal position as shown below:

[41] If a quantified NP occupies the specifier of TP (i.e., an A-position), a pronoun can be construed as a bound pronoun as shown in (i), where *everyone* A-binds *his*:

(i) Everyone_1 loves his_1 mother.

[42] Baker (2001) does not relate the statement in (65) to the examples in (67).

(69) Watasi-wa *pro*$_i$ awa-nakat-ta yo, **darenimo$_i$** [=(50)]
I -Top meet-Neg-Past FP, **anyone**
"I did not meet **anyone**."

If the statement in (65) holds true for Japanese and the postverbal phrase occupies an A-bar position, *pro* would not be a variable bound by *darenimo*. That is, the representation in (68) makes the wrong prediction about the acceptability of (69). S&H (2004) might claim that there are two possibilities to solve this problem. One possible account would assume that a postverbal position [XP] in (68) should occupy an A-position. Then, *pro* would be A-bound by the postverbal element, and it would hence be interpreted as a bound pronoun. As discussed earlier, however, the following example is problematic for this account:

(70) Taro$_i$-no hahaoya-ga hometa yo, **kare$_i$-o**. [= (45a)]
Taro-Gen mother-Nom praised FP **him**
''Taro's mother praised, **him**.''

In (70), the postverbal pronoun *kare* (''he'') can refer to *Taro*. If the postverbal phrase occupies an A-position, (70) would violate the Binding Principle (C), because *kare* c-commands *Taro*. Hence, the first possibility is untenable.

The other possible account would be to say that (65) is not active in Japanese (i.e., a pronoun can be locally A-bar bound by a quantifier). In this case, *pro* in (69) can be A-bar bound by the quantified NP *darenimo* (''anyone''), and it can hence have a bound variable interpretation. However, this possibility cannot be supported, either. Consider the contrast in (71a) and (71b). In (71a), *sono hito* (''that person'') cannot have a bound variable interpretation, but in (71b), it can.

(71) a. *Sono hito$_i$ -no sensei-ga donohito$_i$-mo home-ta, yo.
That person -Gen teacher-Nom everyone praised FP
''His$_i$ teacher praised everyone$_i$.''
b. **Donohito$_i$-mo** sono hito$_i$ -no sensei-ga t_i home-ta yo,
Everyone that person-Gen teacher-Nom praised FP
''**Everyone$_i$,** his$_i$ teacher praised t_i.''

The possible account in question would claim as follows: In (71a), *sono hito* ("that person") is not bound by *donohito* (''everyone''), and hence it cannot have a bound variable interpretation. As (71b) shows, however, if *donohito* undergoes scrambling,

it binds *sono hito* (‘‘that person’), and thereby *sono hito* can be interpreted as a variable bound by *donohito* regardless of whether the scrambled phrase occupies an A position or an A-bar position. Thus far, it seems that there are no problems. However, this account cannot apply in the case where a quantified NP appears in postverbal position:

(72) *?Sono hito$_i$ -no sensei -ga *pro*$_i$ home-ta yo, **donohito$_i$-mo**.
That person -Gen teacher-Nom praised FP **everyone**
‘‘His$_i$ teacher praised t_i, **everyone$_i$**.’’

According to the account under discussion, the postverbal quantified NP *donohito* (‘‘everyone’’) could bind not only *pro* but also *sono hito* (‘‘that person’’). That is, *sono hito* would be predicted to have a bound variable interpretation. This prediction, however, is incorrect. Hence, the second possibility is also difficult to accept.

As shown above, the representation in (68) incorrectly excludes the possibility that a quantified NP appears in postverbal position. This suggests that the gap for a null argument should be something other than *pro*.

S&H’s (2004) analysis faces further difficulties when we consider the case where an idiom chunk appears postverbally. As discussed earlier, it is possible for an idiom chunk to appear in postverbal position, as shown in (52c), repeated in (73) for ease of reference:

(73) Taro-wa *pro* nage-ta yo, **saji-o**.
Taro-Top threw FP spoon-Acc
“Taro gave up.”
Lit. “Taro threw a spoon.”

In the above example, the idiom chunk *saji-o* (‘‘spoon-Acc’’) appears in postverbal position. Since the idiom chunk *saji* cannot be the antecedent of a pronoun (see (53)), it could not be co-indexed with *pro*, resulting in failure to be licensed. That is, the representation in (68) incorrectly predicts the example in (73) to be unacceptable in the idiomatic interpretation. An alternative analysis would assume that the idiom chunk should be regarded as an adjunct. Then, the relevant representation would be (57b), reproduced in (74):

(74) [$_{CP}$[$_{CP}$……] [XP]] where XP is a postverbal adjunct

The above structure does not involve *pro*. As mentioned earlier, S&H (2004) argue that a postverbal adjunct is licensed by the following condition:

(75) The Unambiguous Modification Condition (UMC) [= (60)]
Modify the closest "possible"modifiee.

If (75) applies to the idiom chunk *saji* in (73), the idiom chunk would not be licensed because there is no possible modifiee of *saji*. That is, the idiomatic reading would be incorrectly predicted to be impossible in (73). The availability of idiomatic interpretations in the JPVC is therefore problematic for S&H's (2004) analysis.

The following data also challenges the assumption that the null argument in (68) should be *pro*:

(76) Taro$_i$-ga *pro*$_j$ seme-ta yo, **zibun$_j$-o**. [= (54)]
Taro-Nom criticised FP self-Acc.
"Taro criticised **himself**."

As observed earlier, reflexives such as *zibun* ("self") can appear postverbally. S&H (2004) would argue that in (76), *zibun* should be co-indexed with *pro* such that it can be licensed. If *Taro* is coindexed with *zibun*, then *pro* would be coindexed with *Taro* because *pro* is coindexed with *zibun* (i.e., i=j). However, the Binding Principle (B) prevents *pro* from having the same index as *Taro*. Thus, in order for (76) to have the interpretation that *Taro* criticised himself, the gap for a null object in (76) should be something other than *pro*.

It should suffice to conclude from the above discussions that it would be problematic to assume that in (68) the gap for a null argument should be *pro* regardless of the referentiality of the postverbal argument. This makes it difficult to maintain the representation in (68), which involves *pro*.

4.2.4.2.2 Overt NPs

Since S&H argue that the derivation of the JPVC involves no movement, there is no syntactic movement relation between a preverbal gap (i.e., *pro*) and a postverbal argument. This is associated with the fact that overt preverbal NPs may be linked with postverbal NPs, as exemplified in (77):[43]

[43] See footnote 6 in Chapter 2.

(77) a. Kare$_i$-ga kita yo, **Taro$_i$-ga**.
He-Nom came FP, **Taro-Nom**
‘‘He came, **Taro**.’’
b. Aitsu$_i$-ga kita yo, **Taro$_i$-ga.**
That fellow-Nom came FP, **Taro-Nom**.
‘‘That fellow came, **Taro**.’’
c.?Taro$_i$-ga kita yo, **Taro$_i$-ga**.
Taro-Nom came FP, **Taro-Nom**
‘‘Taro came, **Taro**.
d. Taro-ga sore$_i$-o tabeta, yo, **susi$_i$-o**.
Taro-Nom it-Acc ate FP **sushi-Acc**
‘‘Taro ate it, **sushi**.’’
e.?Taro-ga susi$_i$-o tabeta yo, **susi$_i$-o**.
Taro-Nom sushi-Acc ate FP, **sushi-Acc**
‘‘Taro ate sushi, **sushi**.’’

In (77a-c), overt preverbal NPs (e.g., *kare-ga* (‘‘he-Nom’’)) appear in subject position, and in (77d-e), such NPs (e.g., *sore-o* (‘‘it-Acc’’)) appear in object position. However, S&H’s (2004) analysis cannot accommodate the examples in (77) because of the inadequacy of the representation in (57a), reproduced in (78) for ease of reference:

(78) [$_{CP}$[$_{CP}$……..*pro*$_i$…….] [XP$_i$]] where XP is a postverbal argument

Recall that (78) indicates that if a postverbal element is an argument and the CP involves a *pro*, the postverbal argument is licensed through co-indexation with the *pro*. In other words, (78) cannot deal with the case where the CP does not involve *pro* when a postverbal element is an argument. In order to license the postverbal NPs in (77), it will be necessary to amend the representation in (78) so that a postverbal argument can be licensed through co-indexation not only with a gap (i.e., *pro*) but also with an overt preverbal NP. Thus, the representation in (78) cannot apply to JPVCs like (77).

4.2.4.2.3 Locality effects

As mentioned earlier, S&H (2004) note that the parsing factor of distance is a general condition and hence, that it can apply in the case of postverbal arguments:

(79) Taro-wa [$_{CP}$ Yankiisu-de *pro*$_i$ ichiban da to] omo-tte iru yo, **Matsui-ga**.
Taro-Top Yankees-in best player is Comp think FP Matsui-Nom
‘‘Taro thinks that Matsui is the best player in the Yankees.’’
(S&H (2004: 416-417))

In (79), *pro* inside an embedded clause can be associated with the postverbal argument *Matsui-ga* (‘‘Matsui-Nom’’), and the two constituents—*ichiban da to* (‘‘best is Comp’’) and *omotteiru yo* (‘‘think FP’’)—intervene between *pro* and *Matsui-ga*. According to S&H, (79) is acceptable because the distance between *pro* and the postverbal argument is minimal in the sense that the two intervening constituents are predicates and hence, that they are necessary. However, this argument cannot apply to the following contrast in acceptability between (80a) and (80b):

(80) a. [*pro*$_i$ Hanako-o aisiteiru koto]-ga hontoo da yo, **Taro$_i$-ga** [=(17a)]
Hanako-Acc love that -Nom true is FP **Taro-Nom**
‘‘That *pro*$_i$ loves Hanako is true, **Taro$_i$**.’’
b.*? [*pro*$_i$ Hanako-o aisiteiru koto]-o sitteiru yo, **Taro$_i$-ga** [=(17b)]
(I) Hanako-Acc love that -Acc know FP **Taro-Nom**
‘‘I know that *pro*$_i$ loves Hanako, **Taro$_i$**.’’

In (80a), *pro* inside an embedded clause is associated with the postverbal argument *Taro-ga* (‘‘Taro-Nom’’), and three constituents—*Hanako-o* (‘‘Hanako-Acc’’), *aisiteiru koto ga* (‘‘love that -Nom’’), and *hontoo da yo* (‘‘is true FP’’)—intervene between *pro* and *Taro-ga*. Likewise, in (80b), *pro* is inside an embedded clause, and the postverbal element *Taro-ga* (‘‘Taro-Nom’’) is an argument. Three constituents—*Hanako-o* (‘‘Hanako-Acc’’), *aisiteiru koto-o* (‘‘love that -Acc’’), and *sitteiru yo* (‘‘know FP’’)—intervene between *pro* and *Taro-ga*. S&H (2004) would thus predict (80a) to be the same as (80b) with respect to their acceptability. However, (80b) is worse than (80a). Hence, S&H (2004) cannot account for the difference in acceptability between (80a) and (80b).

4.2.4.2.4 Others

S&H (2004) cannot explain why JPVCs are not allowed to appear inside embedded clauses, because the representations in (57) are motivated only by the facts

of the JPVC (i.e., only descriptive of the phenomena, resulting in failure to provide a deeper explanation for the JPVC). Hence, S&H (2004) leave out of account many properties of the JPVC that are observed in Chapter 2. [44]

Furthermore, it may be true that there is an asymmetry between arguments and adjuncts in syntactic properties (Lebeaux (1990); Fox and Nissenbaum (1999); Schütze and Gibson (1999), among others), but it is unclear in S&H (2004) how to determine whether an adjoined phrase (in A-bar position) is an argument or an adjunct before licensing the postverbal phrase. S&H (2004) thus make a circular argument.

The Unambiguous Modification Condition in (58) is also problematic in that it is specific to a postverbal adjunct.

4.2.5 Conclusion

In the first half of this section, I have claimed that there are many empirical problems with movement analyses whether the direction of movement is leftward or rightward, and hence, that the derivation of the JPVC involves no movement. In the second half of the present section, I have reviewed S&H (2004), who argue that the JPVC is derived from a monoclausal structure without movement, and pointed out that S&H's analysis is inadequate, in that it cannot deal with several types of examples which should not be ignored.

4.3 A Proposal: another type of nonmovement approach

As I said earlier, I have assumed that the derivation of the JPVC involves no movement. Since S&H (2004), who adopt a nonmovement analysis, have several empirical problems as shown in the previous subsections, I will propose an alternative analysis for the JPVC. In what follows, I will propose a licensing condition for postverbal elements which are adjoined to phrases via External Merge, creating adjunction structures. I will also propose interpretive rules about adjoined phrases, which assign interpretations to adjunction structures created by External Merge.

4.3.1 Null arguments

[44] As S&H (2004; 420n4) themselves point out, (57) cannot account for why postverbal elements adjoin to sentence final positions but not to other positions such as VPs. I will later discuss the position where the postverbal element appears (see 4.4.1.2).

I have adopted the assumption in (8) in Chapter 3 which states that arguments should be externally merged to the assigners, thereby satisfying the theta criterion (see footnote 23 in Chapter 3). This assumption entails that null arguments are similar to overt counterparts with respect to theta-role assignment. Further, recall that Japanese allows missing arguments to appear in tensed clauses. This fact suggests that even if null arguments appear in the JPVC, they should be licensed independently of the presence of postverbal elements (see 4.4.3). Thus, null arguments appearing in the JPVC should also be licensed by the condition for null arguments proposed in Chapter 3, reproduced in (81):

(81) The licensing condition for null arguments: [45]

A null argument is licensed only if it is theta-role assigned in theta position.

The question then arises as to what type of empty category a null argument is. As discussed earlier, if the JPVC contains an empty category *pro* which is always associated with a postverbal NP, non-referential NPs such as quantifiers could not appear in postverbal position, which is contrary to fact. Hence, I follow Xu (1986) in proposing that the null argument is underspecified, being an empty category that has no inherently specified features such as [+pronominal].[46] Further discussion about empty categories will be presented later.

4.3.2 Interpretable Case features

It has been widely accepted among syntacticians (e.g., Chomsky (1995)) that Case features are uninterpretable, and hence, that if checked, they should be deleted, resulting in invisibility at the interfaces (i.e., SEM and PHON). However, if Japanese case particles are morphologically realised, based on information on Case features, Case features must be visible at the interfaces; they cannot be deleted if checked. Hence, I propose the following statement:

(82) Interpretable Case features:

In Japanese, Case features are interpretable (i.e., visible at the interfaces) only if they are morphologically realised as case particles such as *-ga* and *-o* in the

[45] Null arguments are defined as arguments without phonetic content, and hence they also have to have their Case checked in the same manner as overt counterparts.

[46] Empty categories are classified into four types as shown below (Chomsky 1981, 1982):
i) Empty categories
a. [+anaphor, -pronominal]: NP-trace b. [-anaphor, +pronominal]: *pro*
c. [+anaphor, +pronominal]: PRO d. [-anaphor, -pronominal]: variable

phonological component. [47]

It should be noted that null arguments do not have their Case features realised as morphological case particles and hence, that their Case features are uninterpretable (i.e., deleted when checked).[48]

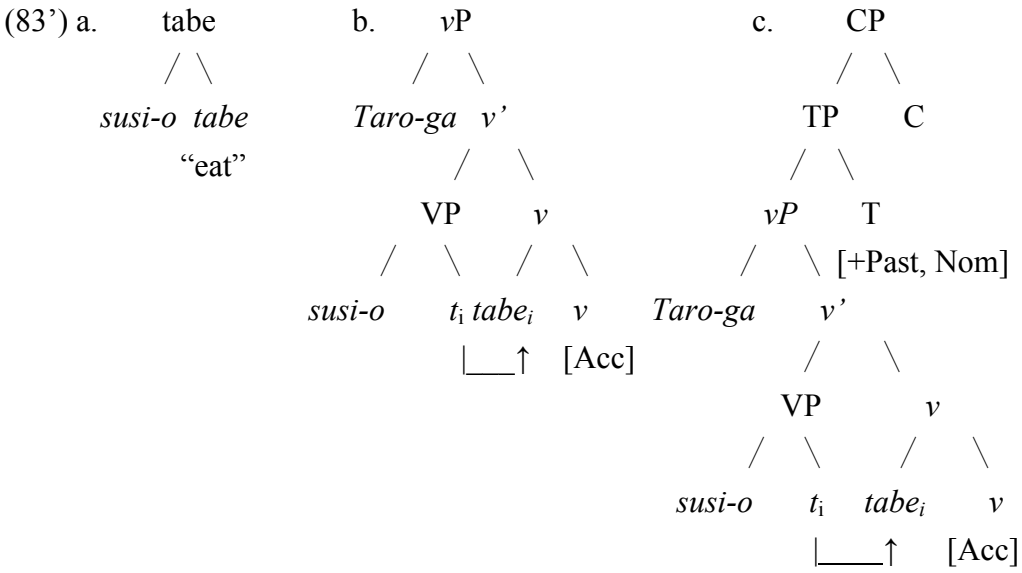
4.3.3 Derivations of non-JPVCs

In this subsection, I will consider examples of Japanese sentences without postverbal elements to see how they are derived given the above assumptions.

I will first take a simple sentence containing no null arguments like (83):

(83) Taro-ga susi-o tabe-ta.
Taro-Nom sushi-Acc eat-Past.
"Taro ate sushi"

A rough sketch of the derivation of (83) would be as illustrated in (83'a-c):



In (83'a), the verb *tabe* ("eat") is merged to the accusative Case marked NP *susi-o* (''sushi-Acc''), which is assigned a theta-role, the verb projected. Then, as in (83'b), VP is merged with the light verb *v*, to which *tabe* (''eat'') is adjoined, *susi-o* checks

[47] See also footnote 3 in Chapter 5.
[48] If all Japanese Case features are interpretable, null arguments would have their Case features realised as case particles (e.g., *-ga*). These particles, however, cannot stand by themselves like the past tense morpheme *-ta*. The Case features of null arguments must thus be uninterpretable.

its Case feature against the Case feature of *v* (i.e., [Acc]), and the nominative Case marked NP *Taro-ga* (''Taro-Nom'') is merged with the light verb, and assigned a theta-role.[49] As (83'c) shows, T is merged to *v*P, and *Taro*-ga remains in the specifier position of *v*P, where the subject checks its Case feature against the Case feature of the finite T.[50, 51] C is subsequently merged to TP.[52]

Now, let us consider an example which contains two null arguments, as shown in (84), where null arguments are indicated by *e*:

(84) e^2 e^1 tabe-ta.
eat-Past
"(I/You/He/She/They) ate (it/them)."

The derivation of (84) will be almost the same as that of (83):

(84') a. tabe
/ \
e^1 *tabe*
"eat"

b. *v*P
/ \
e^2 *v'*
/ \
VP *v*
/ \ / \
e^1 t_i $tabe_i$ *v*
|___↑ [Acc]

c. CP
/ \
TP C
/ \
vP T
/ \ *ta*
e^2 *v'*
/ \
VP *v*
/ \ / \
e^1 t_i $tabe_i$ *v*
|____↑ [Acc]

In (84'a), a null object e^1 is merged to the verb, which assigns a theta-role to e^1, with the verb projected.[53] In (84'b), the null object checks its Case feature against the

[49] More exactly, at this stage of derivation (i.e., at the *v*P Phase), VP is handed over to Φ and to ∑ by TRANSFER.
[50] It is assumed that in Japanese, nominative Case checking should be done in the specifier of *v*P without movement to the specifier of TP (see Fukui (1995); Kuroda (1992)). That is, a subject does not move to the specifier position of TP unless T has an EPP feature (cf. Miyagawa (2001)). The alternative analysis would assume that an assign-nominative-Case feature in T should be construed as an EPP feature which triggers movement, and hence, that the subject should move to the specifier position of TP.
[51] I assume that a complex *v* is adjoined to T at the interfaces. See also section 4.4.1.2.
[52] CP (=a Phase) is built by repeated Merge from the subarray {T, C}.
[53] It is assumed here that the two null arguments in question belong to the same subarray (see section 3.2.1. in Chapter 3).

Case feature [Acc] of *v*, and a null subject e^2 is merged to the light verb, and assigned a theta-role. In (84'c), T is merged to *v*P, then, remaining in the specifier position of *v*P, the null subject e^2 checks its Case feature against the Case feature of the finite T, and finally C is merged to TP.

4.3.4 The JPVC revisited

We are now ready to consider the structure of the JPVC. I have assumed in Chapter 3 that adjunction structures are formed by External Merge. I have also claimed that if External Merge is costless, nothing will forbid elements to adjoin to any phrases unless violations of syntactic principles occur. Incorporating the bare-phrase structure theory into a nonmovement analysis, thus, I propose that External Merge adjoins a postverbal element to a phrase, creating an adjunction structure (see 3.2.6 in Chapter 3).

Let us consider the examples in (85): in (85a) an accusative Case marked NP appears in postverbal position and in (85b) a postpositional phrase (PP) does. If final particles such as *no* are assumed to be dominated by C, the respective syntactic structures of (85a-b) will be (86a-b), which are compatible with adjunct structures built by External Merge.[54] I will refer to the clause in the JPVC except the postverbal element as *the preceding clause*.

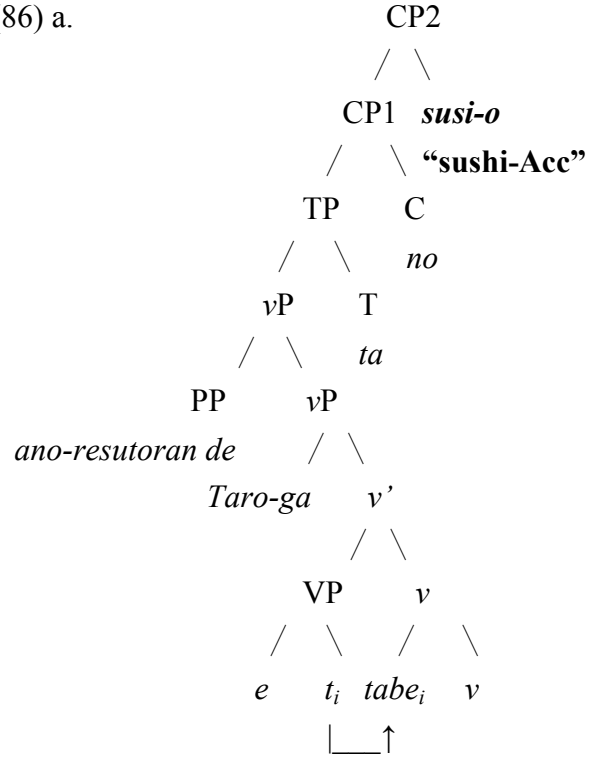
(85) a. Ano resutoran de Taro-ga *e* tabe-ta no, **susi-o**?
that restaurant at Taro-Nom eat-Past Q **sushi-Acc**
"Did Taro eat **sushi** at that restaurant."

b. Taro-ga susi-o tabe-ta no, **ano resutoran-de**?
Taro-Nom sushi-Acc eat-Past Q **that restaurant-at**
"Did Taro eat sushi **at that restaurant**?"

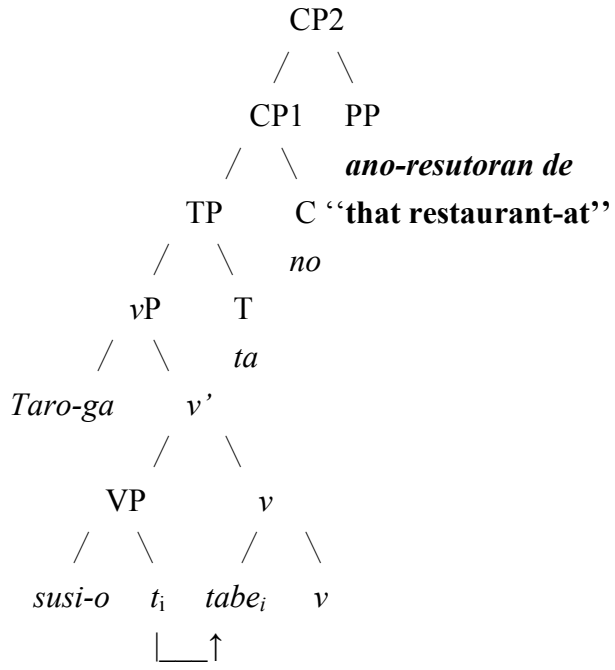
[54] The PP *anoresutoran de* ("that restaurant at") in (85a) is assumed to adjoin to *v*P. In the case where the overt object precedes the PP, like (i), the object is assumed to undergo leftward movement (scrambling), adjoining to *v*P.

i) Taro-ga $susi_i$-o ano-resutoran de t_i tabe-ta no.
Taro-Nom sushi-Acc that restaurant at eat-Past Q
"Did Taro eat sushi at that restaurant?"

(86) a.



b.



In (86a), the postverbal phrase *susi-o* (“sushi-Acc”) is adjoined to CP1, being construed as if it is an object of the verb *tabe* (“eat”). [55] In (86b), the postverbal PP *ano resutoran-de* (“that restaurant at”) is adjoined to CP1, interpreted as a modifier of the verb phrase *susi-o tabe* (“sushi-Acc eat”). This suggests that postverbal

[55] See section 4.4.1.2.

phrases are linked to elements inside the preceding clauses in some way or other. If this relation was regarded as a consequence of movement, it would be accounted for in terms of 'chain' or its equivalent. However, I do not adopt any movement analyses for the reasons discussed above (see 4.2). Hence, I propose the licensing condition in (87):

(87) The licensing condition for the postverbal element[56]
(where X= any syntactic category):
A phrase α adjoined to XP is licensed only if α is associated with β such that
(i) α c-commands β, and
(ii) α is non-distinct from β in terms of Case features.

On the basis of the condition in (87), I propose interpretive rules concerning adjoined phrases as given informally in (88):

(88) Interpretive rules about adjoined phrases (Provisional)
Suppose that α is adjoined to XP (where X= any syntactic category), then
(i) α is construed as an argument sharing properties with β,[57] only if
a. α is an NP or a CP, and
b. α is non-distinct from β in terms of referentiality, and
c. β is in A(rgument)-position (i.e., subject, object).
(ii) α is construed as a potential modifier of β only if α is not construed as an argument.

It may be worth noting, in passing, that theta-role assignment to a null argument through External Merge is not enough to identify the null argument *e* which is assumed to be underspecified (see (81)). In other words, theta-role assignment only determines syntactic positions of null arguments such that the theta structure of a predicate can be compositionally interpreted in the same manner as in the case of overt counterparts. Another mechanism will hence be necessary to identify null arguments so that they can be given appropriate interpretations.[58] The question then arises as to how underspecified empty categories can be identified. As a consequence

[56] *C-command* is defined as in (i) based on *contain* as defined in (ii) (see footnote 36 in Chapter 3):

(i) X c-commands Y if X is a sister of K that contains Y, where K may or may not be Y, (ii) K contains Y if K immediately contains Y or immediately contains L that contains Y.
[57] α and β share properties (e.g., a theta-role, semantic features) unless semantic conflicts occur.
[58] It is reminiscent of Rizzi (1990)'s ECP, which only covers non-pronominal empty categories.

of (88i), however, underspecified null arguments in JPVCs may be identified. That is, the value of a null argument is determined as a result of the null argument and the postverbal phrase sharing their properties with each other. I propose the following functional determination rule (cf. Chomsky (1981, 1982); Xu (1986); Pesetsky and Torrego (2004); Adger and Ramchand (2005)).

(89) Determination of underspecified empty categories (Provisional):[59]

a. Empty categories in argument position (subject or object) are construed as pronominal (*pro*) if they share their properties with referential elements.
b. Empty categories in argument position are construed as variables if they share their properties with non-referential elements such as quantified NPs.
c. Empty categories in argument position are construed as anaphors if they share their properties with reflexives such as *zibun* ("self").

To deal with non-JPVCs that contain null arguments, I add (89d) to (89a-c):

(89) d. The value of empty categories in argument position is contextually determined unless they are c-commanded by anything sharing properties with them.

4.3.5 Evidence for the licensing condition

In this subsection, I will take several types of examples to show how the assumptions proposed in the previous subsection apply.

4.3.5.1 Postverbal NPs and PPs

Let us first consider the example in (90), where identical subscripts indicate that a postverbal element corresponds to a null argument:

[59] This analysis does not account for why Mohawk cannot have any quantified NPs (see 4.2.4.2.1). Following Xu (1986: 91), I assume tentatively that there is a parameter with respect to empty categories (ECs): {(A) ECs with specified features listed in (i), or (B) ECs without such specified features}. If Mohawk uses (A), it will be consistent with the claim that true quantifiers are not allowed in Mohawk.

(i) Empty categories
a. [+anaphor, -pronominal]: NP-trace b. [-anaphor, +pronominal]: *pro*
c. [+anaphor, +pronominal]: PRO d. [-anaphor, -pronominal]: variable

(90) [$_{CP}$ Taro-ga e_i kat-ta yo], **kuruma$_i$-o**.
Taro-Nom bought FP, **car -Acc**
Lit. "Taro bought e_i, **a car$_i$**."

In (90), the postverbal phrase *kuruma-o* (''car-Acc'') is non-distinct from the null argument *e* which has accusative Case checked. If it is assumed that the final particle *yo* occupies C, then the postverbal NP is adjoined to CP by External Merge, thereby c-commanding *e*. The postverbal element can hence be associated with *e*, and thus it is licensed. Furthermore, according to the interpretive rules in (88), the postverbal element is construed as an argument of the verb *kau* (''buy'') because it is non-distinct from the null argument which remains referentially underspecified. Following (89a), the value of the empty category is construed as pronominal.[60] Even if *kuruma-o* was intended to correspond to *Taro-ga* (''Taro-Nom''), for example, *kuruma-o* would not be associated with *Taro-ga* or licensed, because they have different Case features. By contrast, in the case in which *kuruma-o* is intended to be connected with the verb *kau* (''buy''), *kuruma-o* is associated with the verb, which is non-distinct from *kuruma-o* in terms of Case features, and hence *kuruma-o* is licensed. The interpretive rule in (88ii) is also applicable in this case, and thus the postverbal NP is construed as a potential modifier of the verb. In Japanese, however, NPs are not allowed to modify verbs or verb phrases.[61] It is therefore impossible to interpret *kuruma-o* as modifying the verb.[62]

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[60] The coordinate structure in (i) illustrates that a postverbal NP may be associated with more than one null argument:

(i) Taro-ga ***e*$_i$** tsukuri Hanako-ga ***e*$_i$** tabe-ta yo, **sono susi$_i$-o**
Taro-Nom make (and) Hanako-Nom ate FP, the sushi-Acc
"Taro made **it$_i$** and Hanako ate **it$_i$**, **the sushi$_i$**."

If the postverbal NP *sono susi-o* (''the sushi-Acc'') c-commands the two null arguments, the example in (i) will have the correct reading that *Taro made the sushi and Hanako ate it*.

[61] However, adverbial NPs such as *kinoo* (''yesterday'') in Japanese and *this way* in English may be construed as modifiers.

[62] There is no way in my proposed analysis to exclude examples like (i):

(i) **e*$_i$ kokoni ki-ta yo, **Taro$_i$-o**.
here came FP **Taro-Acc**
"Taro came here."
Cf. *e*$_i$ kokoni ki-ta yo, **Taro$_i$-ga**.
here came FP **Taro-Nom**

In (i), the verb *kita* (''came'') is an intransitive verb and an accusative Case marked NP *Taro-o* (''Taro-Acc'') appears in postverbal position. The licensing condition would allow *Taro-o* to be associated with a null argument *e* in subject position because they are non-distinct in terms of Case features, and *Taro-o* would thus be licensed. Then, following the interpretive rules, *Taro* would share properties with the null argument, and hence the example would have the reading that *Taro came*. This, however, is contrary to fact. This problem seems to come from the assumption that the Case features of null arguments should be uninterpretable. If Case features in

The example in (91a) does not contain empty categories corresponding to a postverbal element:

(91) a. [$_{CP}$ Inu-ga i-ta yo], **ano kooen ni**.
dog-Nom existed FP, **that park in**
"There was a dog **in that park**."

The postverbal phrase *ano kooen-ni* ("in that park") is non-distinct from the existential verb *iru* (''exist'') in terms of Case features. If the postverbal PP is adjoined to CP by External Merge, it c-commands the verb, and thereby it can be associated with the verb, satisfying the licensing condition in (87). (88ii) allows the PP to be construed as a modifier of the verb. The locative PP is semantically compatible with the existential verb, and hence (91a) is acceptable. Note that the PP is also associated with the subject *inu-ga* (''dog-Nom'') because they are non-distinct with respect to Case features, and the PP is thus licensed. Based on (89), the PP can be construed as a possible modifier of *inu-ga*. In this case, however, the meaning is anomalous. This is because generally Japanese does not allow PPs to modify NPs. [63]

The following example has a null argument which does not correspond to a postverbal phrase:

(91) b. ? [$_{CP}$ Taro-ga *e* kat-ta yo], **ano mise de**.
Taro-Nom bought FP, **that shop at**
"Taro bought (it/them) **at that shop**."

In (91b), the postverbal locative PP *ano mise-de* (''at that shop'') c-commands the verb *kat-ta* (''bought''), and both are non-distinct in terms of Case features. Hence, the PP can be associated with the verb, licensed, and construed as a potential modifier of the verb. The locative PP is semantically compatible with the verb *kat-ta*. Thus, (91b) is acceptable. The postverbal PP cannot modify *Taro-ga* (''Taro-Nom'') for the same reason that *ano kooen-ni* ("in that park") cannot modify *inu-ga* (''dog-Nom'') in (91a). Similarly, the PP in question c-commands and is non-distinct from,

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Japanese were interpretable whether or not they are morphologically realised, this problem would be dissolved. This possibility should be explored in future research (see also footnotes 48 and 77).

[63] Some PPs can modify NPs if *no* is inserted between them:

(i) Nihon kara-no gakusei
Japan from student
''a student from Japan''

the null argument, and hence the PP is associated with the null argument, being licensed, The Interpretive rules in (88) allow the PP to be construed as a potential modifier of the null argument. However, as shown in (92), modifiers cannot modify null arguments:

(92) a.* Taro-ga [$_{NP}$ takai *e*] tabe-ta yo.
Taro-Nom expensive ate FP
Lit. ‘‘Taro ate expensive *e*.’’
b. *Hanako-ga [$_{NP}$ Furansu-no *e*] kat-ta yo.
Hanako-Nom France -Gen bought FP
Lit. ‘‘Hanako bought French *e*.’’

In (92a), *takai* (‘‘expensive’’) cannot be interpreted as a modifier of a null argument. Likewise in (92b), *furansu-no* (‘‘France-Gen’’) fails to be construed as modifying a null argument (see 4.4.3). Thus, the postverbal PP in (91b) can never modify the null argument for the same reason as in (92).

My proposed analysis may also account for why (93b) is unacceptable. [64]

(93) a. #Kono tsukue-ga susi-o tabe-ta yo.
This desk -Nom sushi-Acc ate FP
“This desk ate sushi”
b. # e_i Susi-o tabe-ta yo**,** **kono tsukue$_i$-ga**.
Sushi-Acc ate FP, **this desk -Nom**

The non-JPVC in (93a) is deviant because the subject *kono tsukue-ga* (“this desk-Nom”) is semantically incompatible with the verb *tabe* (“eat”). As in (90), the postverbal phrase in (93b) is associated with the null argument *e*, thereby being licensed. Thus, the postverbal NP and the null argument share properties including an [inanimate] feature. In other words, (93b) is interpreted as if an inanimate NP is an external argument of *tabe* (“eat”). (93b) is therefore unacceptable for the same reason that (93a) is unacceptable.

The above argument also applies to the following example:

(94) a. #Taro-ga ano kooen de kono syasin-o sit-teiru yo.
Taro-Nom that park in this photo-Acc know FP
“Taro knows this photo in the park.”

[64] # indicates that examples are semantically deviant.

b. #Taro-ga kono syasin-o sit-teiru yo, **ano kooen de**.
Taro-Nom this photo -Acc know FP, **that park in**

The non-JPVC in (94a) sounds bad because the locative PP *ano kooen-de* (“in that park”) cannot modify the stative verb *sitteiru* (“know”) due to semantic incompatibility. In (94b), the locative PP *ano kooen-de* appears in postverbal position. The postverbal PP is associated with the verb *sitteiru* (“know”) and licensed. According to (88ii), thus, the postverbal PP is construed as a potential modifier of the stative verb. However, they are semantically incompatible with each other. (94b) is therefore unacceptable for the same reason as in (94a).

4.3.5.2 Overt preverbal NPs

The licensing condition in (87) also applies in the case where overt preverbal NPs appear in preceding clauses as shown in (79), reproduced in (95):

(95) a. Kare$_i$-ga kita yo, **Taro$_i$-ga**.
He-Nom came FP, **Taro-Nom**
‘‘He came, **Taro**.’’
b. Aitsu$_i$-ga kita yo, **Taro$_i$-ga.**
That fellow-Nom came FP, **Taro-Nom**.
‘‘That fellow came, **Taro**.’’
c. ?Taro$_i$-ga kita yo, **Taro$_i$-ga**.
Taro-Nom came FP, **Taro-Nom**
‘‘Taro came, **Taro**.
d. Taro-ga sore$_i$-o tabeta, yo, **susi$_i$-o**.
Taro-Nom it-Acc ate FP **sushi-Acc**
‘‘Taro ate it, **sushi**.’’
e. ?Taro-ga susi$_i$-o tabeta yo, **susi$_i$-o**.
Taro-Nom sushi-Acc ate FP, **sushi-Acc**
‘‘Taro ate sushi, **sushi**.’’

In (95a), the postverbal element *Taro-ga* (‘‘Taro-Nom’’) c-commands the overt preverbal NP *kare-ga* (‘‘he-Nom’’) and they have the same Case features (i.e., nominative Case). Hence, *Taro-ga* is associated with *kare-ga*, and licensed. If *kare* (‘‘he’’) refers to *Taro*, *Taro* is construed as an argument sharing properties with *kare*. In (95b-c), the postverbal nominative Case marked NPs have the same Case-features

as overt preverbal NPs *aitsu-ga* (‘‘that fellow-Nom’’) and *Taro-ga* (‘‘Taro-Nom’), respectively. As in the case of (95a), thus, the postverbal NPs are licensed. If in (95b) *aitsu* (‘‘that fellow’’) and *Taro* refer to the same person, *Taro* is interpreted as an argument sharing properties with the overt preverbal NP. If in (95c) the identical lexical item in the preceding clause and the postverbal phrase refer to the same person, the postverbal NP is construed as an argument sharing a theta-role with the preverbal NP.

The example in (95d) contains an overt preverbal pronoun *sore-o* (‘‘it-Acc’’) which has the same Case feature as the postverbal element *susi-o* (‘‘sushi-Acc’’). Hence, *susi-o* is licensed in the same way as in (90). If the preverbal pronoun *sore* (‘‘it’’) refers to the postverbal NP s*usi*, the postverbal NP is interpreted as an argument sharing properties with the pronoun. Likewise, in (95e), the postverbal element *susi-o* (‘‘sushi-Acc’’) c-commands an overt preverbal NP which is a lexical item identical with *susi-o*. Thus, the postverbal NP is licensed, sharing a theta-role with the preverbal identical lexical item.

Let us next turn to the case where a postverbal NP is licensed but fails to be construed as an argument sharing properties with an overt preverbal pronoun:

(96) Taro-ga kare$_1$kanojo$_2$-ni at-ta yo, **John$_{1/\#2}$-ni.**
Taro-ga he /she -Dat met FP **John-Dat**
“Taro met him/her, **John**.”

In (96), the postverbal phrase *John-ni* (‘‘John-Dat’’) and an overt preverbal NP *kanojo-ni* (“she-Dat”) have the same Case features. Hence, *John-ni* is associated with *kanoji-ni*, satisfying the licensing condition. However, *John-ni* cannot be interpreted as an argument which shares properties with *kanojo-ni*, because *John-ni* and *kanojo-ni* are distinct in terms of referentiality. By contrast, if *John-ni* is intended to be associated with the pronoun *kare-ni* (‘‘he-Dat’), it can be construed as an argument sharing properties with the pronoun. This is because *John-ni* and *kare-ni* are non-distinct in terms of referentiality (see (95)).

Finally, let us consider examples which are ungrammatical because postverbal arguments are not associated with preverbal pronouns.

(97) a. * Taro-ga kare$_i$-o mi-ta yo, **Jiro$_i$-ga**.
Taro-Nom he-Acc saw FP **Jiro-Nom**
‘‘Taro saw him$_i$**, Jiro$_i$**.’’

b. *Kare$_i$-ga Jiro-o mi-ta yo, **Taro$_i$-o** .
he-Nom Jiro-Acc saw FP **Taro-Acc**
''He$_i$ saw Jiro, **Taro**$_i$.''

In (97a), a preverbal NP *kare-o* (''he-Acc'') has accusative Case and the postverbal NP *Jiro-ga* (''Jiro-Nom'') has nominative Case. Thus, they are different from each other with respect to Case features, and hence *Jiro-ga* is not associated with *kare*, resulting in failure to be licensed. The example in (97a) is therefore ungrammatical in the reading that *Taro saw Jiro*.

Likewise in (97b), the postverbal accusative Case marked NP *Taro-o* (''Taro-Acc'') cannot be associated with a nominative Case marked preverbal pronoun *kare-ga* (''he-Nom''), because they are distinct in Case features. Hence, the postverbal element is not licensed if the example in (97b) is expected to have the reading that *Taro saw Jiro*.

It may be worth noting, in passing, that in (97a) the postverbal NP *Jiro-ga* can be associated with the subject *Taro-ga* because they have the same Case-features, and hence, that *Jiro* is licensed; *Jiro*, however, fails to be construed as an argument sharing properties with *Taro* because *Jiro* and *Taro* are referentially different, and thus (97a) cannot have the interpretation that *Jiro saw him*. The same holds true for (97b) (see also (96)). [65]

4.3.5.3 Quantified NPs

As we have seen, quantified NPs appear in postverbal position:

(98) Watasi-wa *e* awa-nakat-ta yo, **darenimo.** [=(52)]
I -Top meet-Neg-Past FP, **anyone**
"I did not meet **anyone**."

In (98), the postverbal quantified NP *darenimo* (''anyone'') not only c-commands a null argument, but it is also non-distinct from the null argument in terms of Case features. Thus, *darenimo* is associated with the null argument, and hence it is licensed. According to the interpretive rule in (88i), *darenimo* can be construed as an argument sharing properties with the null argument *e* because it is non-distinct from the null argument which remains referentially underspecified. Thus, (98) is

[65] If *Jiro* and *Taro* refer to the same person and *Jiro* is used to correct *Taro* or vice versa, the examples in (97) are acceptable.

acceptable. When it comes to the value of the null argument, it is construed as a variable in accordance with the functional determination rule in (89).[66]

4.3.5.4 A bound variable interpretation

My proposed analysis is compatible with the statement in (67) that a pronoun cannot be locally A-bar bound by a quantified NP. Let us consider the example in (99), where a pronoun *sono hito* (''the person'') cannot have a bound variable interpretation:

(99) *Sono hito$_i$ -no sensei -ga e_i home-ta yo, **donohito$_i$-mo**. [=(74)]
The person -Gen teacher-Nom praised FP **everyone**
'His$_i$ teacher praised e_i, **everyone$_i$**.''

In (99), the postverbal quantified NP *donohito-mo* (''everyone'') is licensed in the same way as in (98). Since the postverbal element adjoins to CP (i.e., an A-bar position), *sono hito* cannot be locally A-bar bound by *donohito-mo*. Hence, *sono hito* cannot be interpreted as a variable bound by *donohito*.

4.3.5.5 Anaphors

As discussed earlier, anaphors may appear in postverbal position.

(100) Taro-ga$_i$ e_i seme-ta yo, **zibun$_i$-o**. [=(57)]
Taro-Nom criticised FP **self-Acc**.
"Taro criticised **himself**."

In (100), the postverbal anaphor *zibun-o* ("self-Acc.") is non-distinct from a null argument which is c-commanded by it, and hence it is licensed. *Zibun-o* and the null argument *e* are referentially non-distinct, and they can hence share properties with

[66] As the following example shows, if the preceding clause does not contain a negative expression, the example is unacceptable although a postverbal element can be associated with a null argument and hence it is licensed:

(i) *Watashi-wa *e* at-ta yo, **darenimo**.
I -Top meet-Past FP **anyone**
''I met **anyone**.''

The difference in acceptability between (i) and (98) seems to have to do with the licensing of negative polarity items (NPIs). However, I cannot say for certain what kind of licensing system can distinguish between (i) and (98).

each other in accordance with the interpretive rules in (88). Suppose here that in (100), the null argument is co-indexed with the subject *Taro-ga* (“Taro-Nom”). Then, the postverbal anaphor is also co-indexed with the subject. *Taro* can therefore be interpreted as the antecedent of *zibun*. Note that *zibun-o* cannot be associated with *Taro-ga* by the licensing condition in (87) because they conflict with each other in terms of Case features.

4.3.5.6 Pronouns

As observed earlier, pronouns may also appear in postverbal position:

(101) a. Taro$_i$-no hahaoya-ga kare$_i$-o hometa yo. [=(29)]
Taro-Gen mother-Nom he -Acc praised FP
‘‘Taro$_i$’s mother praised him$_i$.’’
b. Taro$_i$-no hahaoya-ga e_i hometa yo, **kare$_i$-o**. [=(30a)]
Taro-Gen mother-Nom praised FP **he-Acc**
‘‘Taro$_1$’s mother praised e_i, **him$_i$**.’’

In (101a), *Taro* may be the antecedent of the pronoun *kare* (‘‘he’’). In (101b), the postverbal pronoun *kare-o* (‘‘he-Acc’’) is licensed, and hence it is construed as an argument sharing properties with the null argument *e*. In accordance with the functional determination rule in (89), the null argument is construed as a pronoun. Just as *Taro* can be co-indexed with the overt pronoun *kare* in (101a), so *Taro* can be co-indexed with the null argument (which is construed as a pronoun) in (101b). The postverbal pronoun can hence be interpreted as an element which is co-indexed with *Taro* in (101b). Note that since the postverbal pronoun in (101b) occupies an A-bar position, it can be co-indexed with *Taro* without violating the Binding Principle (C).

4.3.5.7 Postverbal clauses

Clauses may appear in postverbal position, too. I will first take an example which has a postverbal complement clause, as shown in (102):

(102) Taro-ga e_i sinzi-ta yo, **[Mari-ga ie-o kat-ta koto]$_i$ -o**.
Taro-Nom believed FP **Mari-Nom house-Acc bought Comp -Acc**
Lit.‘‘Taro believed it$_i$ [**that Mari bought a house]$_i$.**’’

In the above example, the postverbal CP [*Mari-ga ie-o kat-ta koto*]$_i$ *-o* (‘‘[that Mary bought a house]-Acc’’) c-commands a null argument *e*, and the postverbal CP is non-distinct from the null argument.[67] The CP in question is hence licensed. The interpretive rule enables the postverbal CP to be interpreted as an argument of the matrix verb *sinzi-ta* (‘‘believe-Past’’). The question now arises as to the value of the null argument. It seems that complement clauses are less referential than referential noun phrases, but the clauses may be referential in the sense that they can refer to the time when an event occurs.[68,69] In other words, tensed clauses are more specific in reference than non-referential NPs such as quantifier phrases. In fact, the postverbal complement clause in (102) contains the tense that indicates the time at which a specific event occurred in the past. Accordingly, the null argument in (102) should be *pro*.[70] Note that the postverbal CP is not associated with the subject *Taro-ga*, because the CP is distinct from the subject with respect to Case features.[71]

Now, let us turn to an example where a relative clause appears in postverbal position.

(103) Taro-ga keiki$_i$-o tabe-ta yo, [$_{CP}$ **Mari-ga kinoo kat-ta]$_i$**.
Taro-Nom cake-Acc ate FP, **Mari-Non yesterday bought**
“Taro ate the cake **that Mari bought yesterday**.”

The example in (103) has no null arguments. If the postverbal CP is intended to be linked to the overt object *keiki-o* (“cake-Acc.”), it is licensed. This is because the relative clause is non-distinct from the object in terms of Case features; relative clauses have no Case features. On the assumption that the tensed clause has referentiality, the relative clause and the object are, however, referentially distinct,

[67] Some complement clauses do not have case particles morphologically realised (see also footnote 71).
[68] Kluender (1998: 257) notes that “tense is a temporal form of definite reference,” based on the semantic proposals in for example Partee (1984) and Langacker (1991).
[69] Small clauses appear in postverbal position as shown in (i):

(i) Watashi-wa *e* $_i$ omot-ta yo **[John-no okonai-o arigataku]**$_i$
I -Top thought FP **John-Gen action-Acc thankful**
“I thought **John’s action appreciable**.”

Since small clauses are assumed to be tenseless, they will not be specific in reference in my view. Thus, the value of a null argument in (i) will be construed as something other than *pro*. The same holds true of the case where idiom chunks appear postverbally (see 4.3.5.11). At this point, however, I have nothing more to say about such cases.
[70] It is assumed that at the stage where the interpretive rules apply, information on referentiality concerning a clause is available although tense is not a head of the clause.
[71] If CP does not have case particles, it should be licensed. In this case, the interpretive rules still do not allow the CP to be construed as an argument sharing properties with the subject, but as a modifier of the subject. This interpretation is, however, impossible because it is a syntactic fact that a CP with *koto* as complementiser cannot modify a noun.

and hence the clause cannot be construed as an argument. Thus, the relative clause is interpreted as a modifier of the object NP. This is a desirable result. If the CP is associated with the subject, the meaning will be aberrant.

Finally, let us consider the example where a noun complement clause appears in postverbal position:

(104) Taro-ga e_i uwasa-o kii-ta yo, **[Mari-ga kinoo ie -o**
Taro-Nom rumour-Acc heard FP **Mari-Nom yesterday car-Acc**
kat-ta toiu]$_i$.
bought Comp
‘‘Taro heard the rumour **that Mari bought a house yesterday**.’’

In (104), the null argument *e* appears as complement of the noun *uwasa* (“rumour”), and the postverbal complement clause c-commands *e*, which is non-distinct from the postverbal clause with respect to Case features. Hence, the postverbal clause is licensed. The interpretive rules allow the postverbal clause to be interpreted as an argument of the noun *uwasa.*

4.3.5.8 Honorific agreement

In this subsection, I will show that honorific agreement phenomena observed in the JPVC require that the licensing condition in (87) has to be added to.

Before turning to the JPVC, I will briefly consider two examples in which honorific agreement phenomena are observed in the non-JPVC. In (105) and (106), the verb *goranninaru* (“see”) and the noun *otaku* (“home”) are honorific forms, respectively.

(105). Tanaka kyooju-ga /*sono sagisi$_i$ -ga ano e-o
Tanaka Prof. -Nom/ the swindler-Nom that picture-Acc
goranninarimasita yo,
saw (Hon.), FP.
“Professor Tanaka/the swindler saw that picture.”

(106) Taro-ga kinoo Tanaka kyooju-no /??sono sagisi-no
Taro-Nom yesterday Tanaka Prof. -Gen/ the swindler-Gen
otaku -o houmon-simasita ka
home (Hon)-Acc visited Q
"Did Taro visit Professor Tanaka's/the swindler's home yesterday?"

The examples in (105) and (106) are acceptable when *Tanaka kyooju* ("Professor Tanaka") is used, respectively. This is because a professor is compatible with honorific forms, and hence *Tanaka kyooju* ("Professor Tanaka") can occur with both honorific forms. By contrast, a swindler is conventionally incompatible with honorific forms, and hence *sono sagisi* ("the swindler") cannot occur with the honorific verb or noun.

(107) e_i ano e-o goranninarimasita yo, **Tanaka kyooju$_i$ -ga /*sono sagisi$_i$ -ga**
that picture-Acc. saw (Hon.) FP, **Tanaka Prof. -Nom/ the swindler-Nom**.
"**Professor Tanaka/the swindler** saw that picture."

(108) Taro-ga kinoo otaku$_i$-o houmon-simasita ka
Taro-Nom yesterday home(Hon)-Acc visited Q
Tanaka kyooju$_i$ -no /??sono sagisi$_i$ -no
Tanaka Prof. -Gen./ the swindler-Gen
"Did Taro visit Professor **Tanaka's/the swindler's** home yesterday?"

The same observation may be made of the JPVCs in (107) and (108). When *Tanaka kyooju* ("Professor Tanaka") appears in postverbal position, both examples are acceptable, and on the other hand, when *sono sagisi* ("the swindler") appears postverbally, neither case is acceptable.

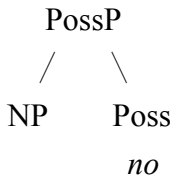
I will first examine the example in (107), which has a null argument. The postverbal NP *Tanaka kyooju* is associated with the null subject, licensed, and hence it is construed as an argument, as in the case of other postverbal arguments. At the same time, however, the postverbal NP *sono sagisi-ga* is also licensed, and it is construed as an argument sharing properties with the null subject. To exclude this undesirable result, let us assume here that the null subject is assigned a feature for "honorific" agreement by the (light) verb, and assume further that such an agreement feature is also included in the licensing condition in (87), reproduced in amended form in (109):

(109) The licensing condition for the postverbal element (Revised)
(where X= any syntactic category):
A phrase α adjoined to XP is licensed only if α is associated with β such that
(i) α c-commands β, and
(ii) α is non-distinct from β in terms of Case features **and honorific features**

Based on the two above assumptions, the postverbal phrase *Tanaka kyooju*, which has an honorific feature, is non-distinct from the null subject in terms of an honorific feature as well as Case features, and thus it is associated with the null subject, licensed, whereas the postverbal NP *sono sagisi*, which has a ''non-honorific'' feature, is distinct from the null subject in terms of the honorific features, and hence it is not licensed. This is a desirable result.

Before proceeding to (108), for expository purposes, let us suppose first that an NP marked with a particle *no* has the structure illustrated in (110), where it is assumed that the particle *no* is a possessive head merged to NP, with the possessive head (Poss) projected by External Merge.[72]

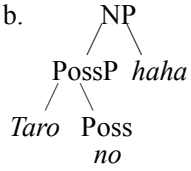
(110)



With this assumption as background, let us return to (108), where there are no null arguments. *Sono sagisi-no* ("the swindler-Poss") as well as *Tanaka kyooju-no* ("Prof. Tanaka-Poss") is associated with the overt object *otaku-o* ("home (Hon)-Acc") because both postverbal possessive phrases (PossPs) are non-distinct from the object in terms of Case features and honorific features. Thus, both postverbal PossPs are licensed. According to the interpretive rules in (88), neither PossP is construed as an argument because neither of them are NP or CP. Hence, each PossP is interpreted

[72] It is assumed that when PossP is accompanied by a modified NP , the structure (ia) would be as in (ib):

i) a. Taro-no haha
Taro-Poss mother
''Taro's mother''
b.



as a potential modifier of the object. That is, just as the PossP *Tanaka kyooju-no* in (106) is conventionally compatible with the honorific form, so is the postverbal one in (108), and on the other hand, just as the PossP *sono sagisi-no* in (106) is not conventionally compatible with the honorific form, neither is the postverbal counterpart in (108). Thus, (108) may or may not be accepted for the same reason as (106).

4.3.5.9 No categorial restrictions

As discussed earlier (e.g., Chapter 3; 4.3.3), I have assumed that adjunction structures may be built by External Merge. I have also claimed that nothing prohibits elements from adjoining to any phrases unless syntactic principles including the licensing condition in (87) are violated. Thus, it is predicted that any syntactic category may be adjoined to a phrase, creating a postverbal construction.[73] This prediction is supported by the examples discussed above and in Chapter 2, some of the examples reproduced in (111):

(111) a. Toaro-ga e_i kinoo kat-ta yo **kuruma-o$_i$** [NP]
Taro-Nom yesterday bought FP **car -Acc**
"Taro bought **a car** yesterday."

b. Taro-wa e_i sittei-ta yo, **[$_{CP}$ Hanako-ga kokoni ki -ta tte]$_i$**. [CP]
Taro-Top knew FP **Hanako-Nom here came Comp**
"Taro knew **that Hanako came yesterday**."

c. Hanako-ga kuruma-o kat-ta yo **sugoku ookii**. [A]
Hanako ga car -Acc bought FP **very big**
"Hanako bought a **very big** car."

d. Kinoo tsuini eega -o mi-ta yo, **ano**. [A][74]
yesterday (I) finally movie-Acc saw FP **that**
" (I) finally saw **that** movie."

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[73] Under my proposed analysis, it is not possible to rule out the following examples in which modifiers immediately follow modifiees, for instance, within NPs (see also Chapter 2). I leave this problem open for future research.

i) a. *[$_{NP}$ ie ookina]
house large
"a large house"
b. *[$_{NP}$hon [watasi-ga kinoo kat-ta]
book I -Nom vesterday bought]
" a book I bought yesterday"

[74] It is assumed here that demonstratives such as *ano* ("that") are adjectives (see Kuno (1973a: 27).

e. Neko-ga nete-iru yo, **san-biki** [Q]
Cat-Nom sleeping FP **three-classifier**
"**Three** cats are sleeping."

e. Taro-wa kinoo kono hon-o yon-da yo, **ano-toshokan de**. [PP]
Taro-Top yesterday this book-Acc read FP, **that library in**
"Taro read this book **in that library** yesterday."

f. Hanako-ga hon-o yomda yo, **Ken-no**. [Possessive Phrase]
Hanako Nom book -Acc read FP **Ken-Poss**
"Hanako read **Ken's** book."

g. Suzuki-san-ga kono-tsukue-o tsukuri-mashita yo, **kinoo**. [Adv]
Suzuki-Mr-Nom this desk-Acc make -Past FP **yesterday.**
"Mr Suzuki made this desk **yesterday**"

In (111a-b), NP and CP appear in postverbal position, respectively. As we have seen, each postverbal phrase is licensed and construed as an argument sharing properties with its relevant null argument *e*. The rest of the examples have adjuncts adjoined to the preceding clauses, respectively. These examples are licensed and construed as modifiers of the relevant phrases within the preceding clauses in the same manner as in (91), (103) and (108).

4.3.5.10 Multiple postverbal phrases

As observed earlier, multiple constituents appear in postverbal position (Chapter 2; 2.2.4.1.2):

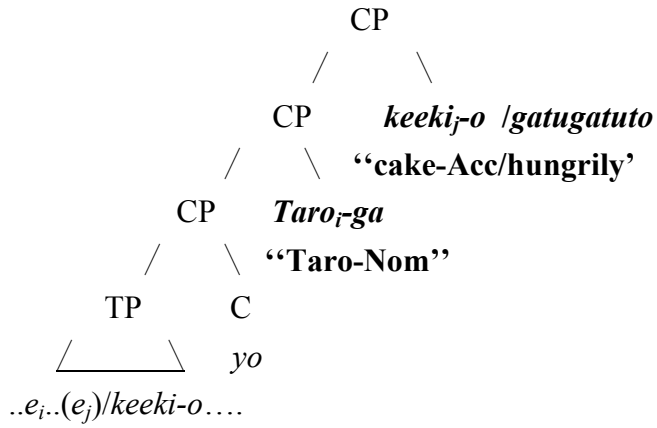
(112) a. e_i e_j tabe-ta yo, **Taro$_i$-ga keeki$_j$-o**.
ate FP **Taro-Nom cake-Acc**
'' He$_i$ ate it$_j$, **Taro$_i$, cake$_j$**.''

b. e_i keeki-o tabe-ta yo, **Taro-ga$_i$ gatugatuto**.
cake-Acc ate FP **Taro-Nom hungrily**
Lit. "He$_i$ ate cake, **Taro$_i$, hungrily**."

The example in (112a) has two null arguments required by the transitive verb *taberu* (''eat''), with two constituents (i.e., *Taro-ga* (''Taro-Nom'') and *keeki-o* (''cake-Acc'') in postverbal position, whereas (112b) contains a single null argument, with two constituents (i.e., *Taro-ga* (''Taro-Nom'') and *gatugatuto* (''hungrily'')) in postverbal position. Suppose that the two postverbal constituents in each example are

adjoined to CP by repeated External Merge, yielding a structure like (113), where the details irrelevant to the present discussion are ignored: [75]

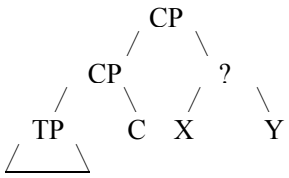
(113)



With the above structure in mind, let us first consider (112a). *Taro-ga* (‘‘Taro-Nom’’) c-commands a null argument e_i in subject position, and they are non-distinct in terms of Case features. Thus, *Taro-ga* is associated with the null argument to be licensed. Furthermore, according to the interpretive rules in (88), *Taro-ga* can be construed as an argument sharing properties including a theta-role with the null argument which is referentially underspecified. Similarly, the other postverbal element *keeki-o* (‘‘cake-Acc’’) can be construed as an argument sharing properties with a null argument in object position. Thus, the example in (112a) has the correct interpretation that *Taro ate cake*.[76] However, there is a possibility that *Taro-ga* might be associated with the null argument in object position, because they are non-distinct with respect to Case features. By the same token, *keeki-o* might be associated with the null argument in subject position. In this case, an inanimate noun would be interpreted as the external argument of the verb *taberu* (‘‘eat’’)—i.e. the example

[75] Prof. Naoki Fukui, in a personal communication, pointed out to me that there is a possibility of multiple postverbal elements forming a constituent as depicted in (i), where X, Y are postverbal elements.

(i)



At this point, I have nothing to say about this possibility. Hence, I assume that multiple postverbal elements adjoin to CP via repeated External Merge.

[76] Although *keeki-o* (‘‘cake-Acc’’) c-commands *Taro-ga* (‘‘Taro-Nom’’), they are distinct with respect to Case features. Hence, *keeki-o* is not associated with *Taro-ga*.

would have the reading that *cake ate Taro*. However, the verb requires an animate subject. This interpretation would hence be semantically deviant (see also (93)).[77]

Now let us turn to (112b). *Taro-ga* can be construed as an argument sharing properties with a null argument in the same manner as in (112a). Note that *Taro-ga* is not associated with *keeki-o* (''cake-Acc') because they are different in terms of Case features. The postverbal adverb *gatugatuto* (''hungrily'') is associated with the verb *tabeta* (''ate''), and construed as a potential modifier of the verb. The postverbal adverb *gatugatuto* can modify the verb because of semantic compatibility. However, the postverbal adverb might also be construed as a potential modifier of each of the other two phrases—*Taro-ga* and *keeki-o*—for the same reason that postpositional phrases are associated with nouns in (91). Yet, adverbs in general are not allowed to modify nouns. Hence, in (112b) neither *Taro* nor *keeki* can be modified by the adverb *gatugatuto*.

4.3.5.11 Idiom chunks

Contrary to what is often assumed, Nunberg, Sag and Wasow (1994) argue that idioms should be treated as compositional—an idiomatic meaning is composed from idiomatic interpretations of the parts of an idiom—as can be seen in the following quotation:

> As we will show, there are compelling reasons to believe that the majority of phrasal idioms are in fact semantically compositional, and that the very phenomenon of idiomaticity is fundamentally semantic in nature. Much of the literature on the syntax of idioms is thus based on the misconception that no such semantic compositionality exists. (p. 491)

Furthermore, Endo (1989) argues as follows:

> Notice that, even if we assume that a non-compositional idiom is entered in the lexicon as a unit, we cannot claim that such semantic non-compositionality

[77] My proposed analysis cannot accommodate the case where a subject and an object do not semantically contradict each other:

i) *e e* hon-o ageta yo, **Taro-ga Jiro-ni**
book-Acc gave FP, **Taro-Nom Jiro-Dat**
''He gave a book him, **Taro, Jiro.**''

Even if *Jiro-ni* (''Jiro-Dat'') corresponds to a null subject, nothing prevents *Jiro-ni* from being associated with the null subject because they are non-distinct in terms of Case features: the Case features of null arguments delete if checked. *Taro-ga* (''Taro-Nom'') can be associated with a null indirect object in the same way as *Jiro-ni* can. The example in (i) would thus have the reading that *Jiro gave a book to Taro*. This interpretation, however, is different from what is expected (see footnote 62 for a relevant problem).

> correlates with syntactic non-compositionality, i.e., that an idiom is dominated by just one node. For, like any other overt NPs, an NP in idioms must be assigned an appropriate Case and be so marked; in Japanese, by such particles as *o* (accusative). . . . and *ga* (nominative) in the case of an idiom like *asi ga deru* (‘exceed the budget’, lit. ‘foot protrudes’). (p. 94)

The two arguments above lead me to propose that in Japanese, idiom chunks marked with case particles such as *-o* should be regarded as arguments (i.e., there are no substantial differences between such idiom chunks and ‘‘normal’’ arguments). This proposal predicts that if idiom chunks are Case-marked, they can be separated syntactically like arguments in non-idiomatic structures, as long as their interpretations are composed through non-ad hoc mechanisms.[78] This prediction is borne out by the fact that idiom chunks undergo scrambling and passivisation:

(114) a. Saji$_i$-o Taro-wa t_i nage-ta yo. [= (54)]
Spoon-Acc Taro-Top threw FP
‘‘Taro gave up.’’

b. Saji$_i$-ga t_i nage -rare -ta.
Spoon-Nom throw-Passive-Past
‘‘ (he/she/they) gave up.’’

Each example in (114) contains an idiomatic expression *saji-o nageru* (‘‘give up’’ lit. ‘‘throw a spoon’’): In (114a), an accusative Case marked idiom chunk *saji-o* (‘‘spoon-Acc’’) appears in a scrambled position, and in (114b), a nominative Case marked idiom chunk *saji-ga* (‘‘spoon-Nom’’) appears in a passivised position (i.e., subject position).[79] ‘‘Normal’’ arguments which appear in scrambled and passivised positions are interpreted compositionally through independently motivated mechanisms for interpreting scrambling and passive constructions (Nunberg, Sag and Wasow (1994: 506)). If case-marked idiom chunks are not treated as arguments (i.e., not interpreted compositionally), it seems difficult to come up with non-ad hoc mechanisms through which both *saji-o* and *saji-ga* in (114) can be interpreted as

[78] The example in (i) contains an idiomatic expression *ago-de tukau* (lit. use with one’s chin, or have a person at one’s beck and call), which involves no arguments. It seems that an idiomatic interpretation in (i) is assigned compositionally, as in the case where idioms involve arguments. At this point, however, I have nothing more to say about idioms in which no arguments are contained.

(i) Taro-wa itumo hito-o ago-de tukau.
Taro-Top always person-Acc chin with use.
‘‘Taro always has people at his beck and call.”

[79] As mentioned earlier, the examples in (114) are ambiguous: one is an idiomatic reading and the other the literal reading

parts of the relevant idioms.[80] Case-marked idiom chunks should therefore be arguments.

Now, let us turn to the examples in (115) where idiom chunks appear in postverbal position:

(115) a. Taro-wa *e* nage-ta yo, **saji-o** [=(54c)]
Taro-Top threw FP **spoon-Acc**
"Taro gave up."
"Taro threw a spoon."
b. Taro-ga Jiro-ni *e* tate-ta yo, **hara-o**
Taro-Nom Jiro-Dat set up FP, **stomach-Acc**
"Taro got upset at Jiro."

In (115a), the postverbal NP *saji-o* (''spoon-Acc'') c-commands a null argument *e* in the preceding clause, and they are non-distinct in terms of Case features. Thus, *saji-o* is associated with the null argument, and is licensed. Since the interpretive rules in (88) are independently motivated ones, *saji-o* can be construed as an argument sharing properties with the null argument whether or not *saji-o* is an alleged idiom chunk. In (115a), the idiom chunk can thus appear in postverbal position, resulting in the availability of the idiomatic interpretation.

The argument immediately above also applies to the example in (115b) which contains an idiomatic expression *hara-o tate-ta* (lit. set up stomach, get upset). If the postverbal element *hara-o* (''stomach-Acc'') is an idiom chunk, the idiomatic interpretation is available.

Some idiom chunks cannot appear in postverbal position. The examples in (116a) and (117a) contain idiomatic expressions *kao-ni doro-o nuru* (lit. daub one's face, make a person lose face) and *abura-o uru* (lit. sell oil, idle away one's time), respectively:

(116) a. Taro-wa ryoosin-no kao-ni doro-o nut-ta yo.
Taro-Top parents-Poss face-Dat mud-Acc daubed FP
''Taro made his parents lose face.''
''Taro daubed his parents' face with mud.''

[80] I have nothing to say about mechanisms to determine the meaning of idioms (see e.g., Chomsky (1981: 146n94) for a discussion about an idiom rule)

b. *?Taro-ga ryoosin-no kao-ni *e* nut-ta yo, **doro -o**.
Taro-Nom parents-Poss face-Dat daubed FP **mud-Acc**
‘‘Taro made his parents lose face.’’

(117) a. Taro-ga kooen de abura-o uttei-ta yo,**.**
Taro-Nom park in oil-Acc sold FP
“Taro was idling away his time in the park.”
‘‘Taro sold oil in the park.’’
b.*?Taro-ga kooen de *e* uttei-ta yo, **abura-o.**
Taro-Nom park in sold FP **oil-Acc**
“Taro was idling away his time in the park.”

The examples in (116b) and (117b) contain postverbal idiom chunks which are licensed in the same way as in (113), but neither of them can have an idiomatic interpretation.

As Fujimaki (2006: 242) points out, however, examples like (116b) and (117b) improve in a context where relevant idiomatic expressions are mentioned in prior discourse:

(118) A: Taro-ga ryousin-no kao-ni doro-o nut-ta no?
Taro-Nom parents-Poss face-Dat mud-Acc daubed Q
‘‘Did Taro make his parents lose face, again?’’
B: ?Ee. Taro-ga *e* nuttanda yo, **doro-o**.
Yes. Taro-Nom (parents’ face) daubed FP, **mud-Acc**
‘‘Yes. Taro made his parents lose face.’’

(119) A: Taro-ga kooen de abura-o utteita, no?
Taro-Nom park in oil-Acc sold Q
“Taro was idling away his time in the park.”
B: ? Ee. kare-ga mata *e* utteita yo, **abura-o**.
Yes. he-Nom again sold FP, **oil -Acc**
“Yes. He was idling away his time, again.”

In (118B), the postverbal idiom chunk *doro-o* (‘‘mud-Acc’’) can be associated with a null argument, and hence it is licensed. Likewise in (119B), the postverbal idiom chunk *abura-o* (‘‘oil-Acc’’) is licensed. Thus, if pragmatic factors are responsible for the difference between the examples in (116b) and (117b) and those in (118B) and (119B) with respect to the availability of the idiomatic interpretations, examples like

(116b) and (117b) should not be treated as exceptional for the claim that postverbal idiom chunks can be construed as arguments. My proposed analysis for postverbal idiom chunks is therefore consistent with Nunberg, Sag and Wasow's (1994) argument that idioms should be treated as compositional.

4.3.6 Conclusion

In this section, on the assumption that Japanese null arguments are underspecified, I have proposed that postverbal elements are adjoined to phrases via External Merge, and that they are licensed through their association with relevant elements in accordance with the licensing condition in (87). I have also provided several kinds of evidence to support the assumptions I have made in the present section.

4.4 Deriving the properties of the JPVC

In this section, first, I will demonstrate that the syntactic positions to which postverbal phrases adjoin are determined by independently motivated interface conditions. Then, I will argue that the restriction of the JPVC to root clauses can also follow from the interface conditions. Finally, I will claim that the acceptability of the preceding clause is a necessary condition for the acceptability of the JPVC.[81] I will discuss other syntactic properties such as locality effects and scope ambiguity in the next section from the point of view of language processing.

4.4.1 The syntactic position of the postverbal phrase

The postverbal phrases can adjoin to any projection via external Merge on the assumptions adopted earlier. In other words, nothing can prohibit postverbal elements from adjoining to maximal projections unless such adjunction is incompatible with bare phrase structure.[82] As the examples in (120) show, however, the postverbal elements are allowed to adjoin neither to *v*P nor to TP. Before going directly to this question, I would like to discuss the head movement a little more fully.

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[81] See (7) in 4.2.1.1.

[82] My proposed analysis does not exclude the possibility that elements are adjoined to the left side of phrases. This implies that scrambled elements are base-generated (see Bošković and Takahasi (1998)). As discussed earlier, however, some nonarguments cannot undergo ''scrambling'' (see (16)). I leave the explanation of this restriction for future research.

(120) a. *Taro-ga e_i kat **kuruma-o$_i$** -ta no. [*v*P adjunction] Impossible
Taro-Nom buy car -Acc -Past Q
"Did Taro buy a car?"

b. Taro-ga e_i kat-ta **kuruma-o$_i$** no. [TP adjunction] Impossible
Taro-Nom buy-Past car -Acc Q

c. Taro-ga e_i kat-ta no **kuruma-o$_i$** [CP adjunction] Possible
Taro-Nom buy-Past Q car -Acc

4.4.1.1 Interface conditions

Let us first suppose that there are morphological restrictions on functional heads such as T. Based on the basic idea advanced in Stowell (1995), I propose a condition on Tense as formulated in (121), which states that Tense must be amalgamated with the Verb at the interfaces.[83] In other words, Tense can be given a proper interpretation only if Tense and the Verb amalgamate.[84]

(121) The Output Condition on T (=Tense):
T (=Tense) must be amalgamated with V at the Interfaces—i.e. PHON and SEM.

(cf. Sakai (2002: 5))

The amalgamation of T with V is realised on the assumption that V moves to T as given in (122).

(122) V moves to T (=Tense)

(Chomsky (1986))

It is likely that complementizers in Japanese (e.g., *-ka, -to, -no, -koto*) may be regarded as bound morphemes just like the past tense morpheme *-ta* and morphological case particles such as *-ga*, because they cannot stand by themselves. I hence propose the following output condition on complementizers formulated in such a way that complmentizers can be given a proper interpretation at the interfaces:

[83] Stowell (1995: http://www.linguistics.ucla.edu/people/stowell/PSIND.htm) assumes that "English present and past originate as affixes on V, and that they must be licensed by virtue of occurring syntactically in the T^o position at some point in the mapping to Logical Form (LF), presumably by means of head-to-head verb movement."

[84] If there is *v* in the relevant structure, the V in this section refers to the little *v* to which the V adjoins, (i.e., a complex *v*).

(123) The Output Condition on Comp in Japanese[85]

A complementizer (Comp) that is phonetically non-null must be amalgamated with V adjoined to T at the Interfaces.

Following Van Riemsdijk (1998), I also adopt the Head Adjacency Principle as given in (124).

(124) The Head Adjacency Principle (HAP)[86]

A transformation process that affects two head positions must be Head Adjunction.

Head Adjunction: Two phonetically identified [=realised] heads are joined, yielding an adjunction structure, in which case the two heads must be strictly linearly adjacent at the moment of application of the rule.

Adapted from (Van Riemsdijk (1998: 644-645))

4.4.1.2 Adjunction to CP

Let us now return to the question concerning the syntactic position of the postverbal phrases. As mentioned above, the postverbal elements are not allowed to adjoin to *v*P and to TP as in (120), repeated here in (125):

(125) a. *Taro-ga e_i kat **kuruma-o$_i$** -ta no. [*v*P adjunction] Impossible
Taro-Nom buy car -Acc -Past Q
"Did Taro buy a car?"

b. *Taro-ga e_i kat-ta **kuruma-o$_i$** no. [TP adjunction] Impossible
Taro-Nom buy-Past car -Acc Q

c. Taro-ga e_i kat-ta no **kuruma-o$_i$** [CP adjunction] Possible
Taro-Nom buy-Past Q car -Acc

In (125a), *kuruma-o* (''car-Acc'') is adjoined to *v*P by External Merge as diagrammed in (126a), where the postverbal phrase intervenes between the verb *kau*

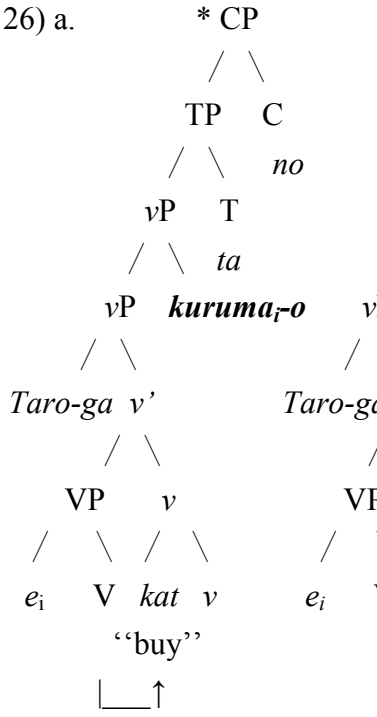
[85] The following example suggests that it is better to classify *-kara* (''because'') as C rather than P for categorial unification:

i) *Taro-ga *e* kat-ta **kono kuruma-o** kara
Taro-Nom buy-Past **this car -Acc** because
''because Taro bought **this car"**

[86] The complete definition of HAP given in Van Riemsdijk (1998: 645) adds Head Substitution: ''a head is moved into head position which is phonetically empty but which may contain Φ-features, thereby unifying the two morphosyntactic feature matrices.''

(‘‘buy’’) and the past particle *-ta*. The verb cannot move to T because the Head Adjacency Principle (HAP) is not observed, and hence a violation of the output condition (121) occurs. In (125b), the postverbal element is merged to TP by External Merge as illustrated in (126b). If the question particle *no* is merged with C, then the past particle *-ta* cannot move to the particle *-no* because the postverbal element intervenes between them, and hence the condition in (123) is violated. In (125c), the postverbal NP is adjoined to CP by External Merge as given in (126c). The verb can move to T, and subsequently to C, because there are no elements intervening between the verb, T, and C. Thus, the interface conditions in (121) and (123) are satisfied, and hence the example is acceptable unless other principles are violated. Therefore, the system assumed here can account for why the postverbal element can never adjoin to *v*P or to TP.[87]

(126) a.



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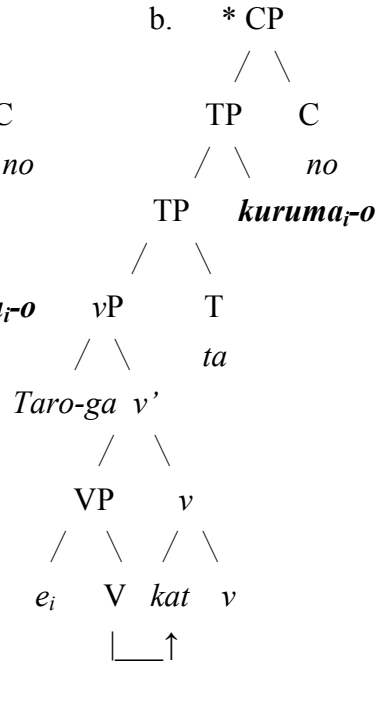
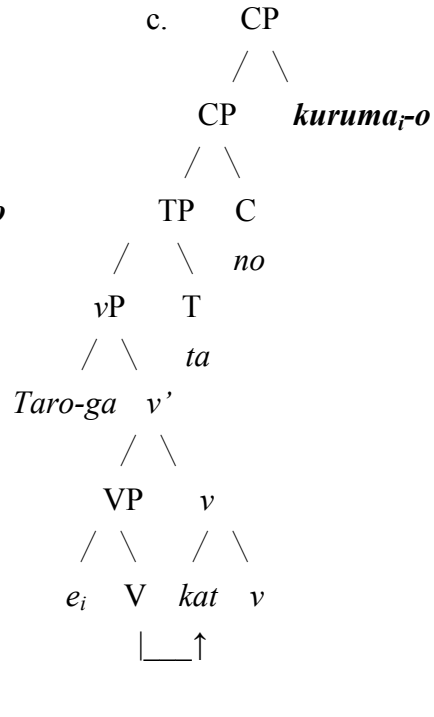


c.



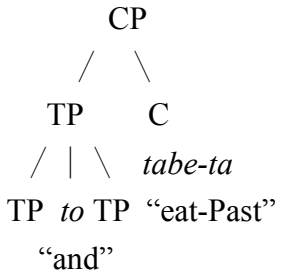
It is worth noting, in passing, that if the verb moves to T and C before the postverbal phrase is adjoined to *v*P or TP, the above argument would be untenable (i.e., it would be impossible to rule out the possibility of *v*P-adjunction and TP-adjunction). For instance, Koizumi (2000) claims that, in Japanese, a verb may move to C out of *v*P as well as T in Narrow Syntax (NS), based on examples like

[87] If there are no final particles such as *no*, the condition in (123) does not apply (see, e.g., (134a)). Hence, postverbal elements adjoin to TP or CP, resulting in ambiguous structures unless there is evidence to the contrary.

(127), in which the subject overtly moves to the specifier of TP, the subjects and the objects forming a syntactic constituent, as sketched in (128). [88] If his analysis is correct, the verb would raise to C in NS.

(127) [[Mary-ga ringo-o 2-tu] to [Nancy-ga banana-o 3-bon]] tabe-ta (koto)
Mary-Nom apple-Acc 2-Cl and Nancy-Nom banana-Acc 3-Cl] eat-Past
Lit. "[Mary two apples] and [Nancy three bananas] ate.
(Mary ate two apples, and Nancy three bananas.)
(Koizumi (2000: 230))

(128)



On Koizumi's assumption, a verb would move to T and C before a postverbal element is adjoined to *v*P or TP, and thereby the postverbal element could be adjoined to *v*P and TP. However, it remains possible to explain why the postverbal element can adjoin neither to *v*P nor to TP, if one follows Chomsky (1995) in adopting a condition on Merge called the Extension Condition formulated in (129):

(129) Extension Condition:
External Merge always applies at the root only.
Adapted from (Chomsky (1995: 248))

The Extension Condition successfully excludes the possibility that the postverbal element adjoins to *v*P or TP after verb movement takes place. That is, if the verb moves to T, and subsequently, the postverbal phrase is adjoined to *v*P by External Merge, then the Extension Condition is violated because the *v*P at which Merge applied is no longer a root. The same is true of the case of TP-adjunction; the TP at which Merge could apply is not a root after it is merged with the C to which the verb moves. Therefore, whether or not verb movement takes place in NS, it is possible to rule out the adjunction of the postverbal phrase to *v*P and to TP. [89]

[88] I have adopted the assumption that V should move neither to T nor to C in NS.
[89] On the assumption that verb movement takes place in NS, V must move to T before the domain

4.4.2 Root phenomena

In this subsection, I will consider the restriction of the JPVC to root clauses. As discussed earlier, postverbal elements cannot appear within subordinate clauses. This restriction follows from the interface conditions adopted above. Let us first observe the following examples:

(130) a.*[$_{CP}$ John-ga e_i tabe-ta **susi$_i$ –o** koto] -wa hontoo da.
John-Nom eat-Past **sushi-Acc** Comp -Top true is
"That John ate **sushi** is true."
b. *[$_{CP}$ e_i susi-o tabe-ta **John$_i$-ga** koto] -wa hontoo da.
sushi-Acc eat-Past **John-Nom** Comp -Top true is
"That **John** ate sushi is true."
c.* Jiro-wa [$_{CP}$ Taro-ga susi-o tabe-ta **kinoo** no]-o sitteiru.
Jiro-Top Taro-Nom sushi-Acc eat-Past **yesterday** Comp -Acc know
''Jiro knows that Taro ate sushi **yesterday**.''

(131) *[Chichi-ga e_i kat-ta **kono ie$_i$-o** node], wareware-wa sengetsu
Father-Nom buy-Past **this house-Acc** because we -Top last month
hikkosi-ta.
move-in-Past
"Because our father bought **this house**, we moved in last month."

In (130a), an accusative Case marked NP *susi-o* (''sushi-Acc'') appears between a past tense morpheme *-ta* and a complementiser *koto*. The output condition in (123) requires that the complementize *koto* should be amalgamated with the complex T *tabe-ta* (''eat-Past''). In accordance with the HAP in (124), however, this amalgamation is impossible due to the presence of *susi-o* between *tabe-ta* and *koto*. Hence, (130a) violates the Output Condition in (123), resulting in the unacceptability.[90] The same occurs with (130b-c).

---

of *v* is handed over to Φ and to ∑ by TRANSFER. Thus, if an ''alleged postverbal element'' was merged to *v*P before a complex *v* moves to T, the complex *v* could not move to T in NS. However, T does not have to move to C before the postverbal element is adjoined to TP unless the HAP in (124) applies in NS. Hence, if verb movement takes place in NS, it would be necessary to assume here that the HAP should apply in NS.

[90] Postverbal elements cannot be adjoined to embedded clauses:

i) a. *? [$_{CP}$ Taro-ga e_i shika-ta to] **musuko$_i$-o** omot-ta
(I) Taro-Nom scold-Past Comp (his) **son-Acc** think-Past
"I thought that Taro scolded **his son**".

The example in (131) has an alleged postverbal element which is contained in an adjunct. If *node* (''because'') is classified as a complementiser, the unacceptability of (131) can be accounted for in the same way as in (130): an accusative Case marked NP *kono ie-o* (''this house-Acc'') intervenes between *node* and a complex T *kat-ta* (''buy-Past''), and hence *node* cannot amalgamate with the complex T, violating the Output Conditin in (123).[91]

Kurogi (2006) has proposed a different account of the failure of JPVCs to allow postverbal elements to appear in subordinate clauses. Kurogi argues that independently of the JPVC, final particles such as *yo* cannot appear in subordinate clauses (see Masuoka and Takubo (1992:211)), as shown in (132):

(132) a Kimi-wa [$_{CP}$ Taro-ga sono kodomo-o shika-ta (*yo) koto]-o shit-teiru no.
you-Top Taro-Nom the child -Acc scolded FP Comp-Acc know Q
"Do you know that Taro scolded his son?".
b. Ame-ga futta (*yo) node, takusi-ni notta.
Rain -Nom fell FP because, (I) taxi -Dat took
"I took a taxi because it rained."

Kurogi (2006) claims further that the JPVC always requires final partices such as *yo*, and hence, that the root phenomena of the JPVC would follow (see also Endo (1996)):

(133) *Kimi-wa [$_{CP}$ Taro-ga shika-ta yo **sono kodomo-o** koto]-o shit-teiru no.
you-Top Taro-Nom scolded FP **the child -Acc** Comp-Acc know Q
"Do you know that Taro scolded **his son**?"

In (133), the embedded clause contains a final particle *yo*. Thus, (133) is unacceptable for the same reason that the examples in (132) are unacceptable.

However, Kurogi's anlaysis faces difficulties when we consider the case where JPVCs are possible without final particles, as shown in (134a), which fails to appear within the subordinate clause as demonstrated in (134b) (see also (130). [92] Note that

---

b. *?[$_{CP}$ John-ga Mary-ni e_i watasita koto] -ga **ano hon$_i$-o** hushigida
John-Nom Mary-Dat handed Comp -Nom **that book-Acc** surprising
"That John handed **that book** to Mary is surprising."

As will be shown in section 4.5.3.6, the unacceptability of examples like (i) can be accounted for in terms of parsing strategies.

[91] See footnote 85.

[92] I examined frequency with which final particles are used in JPVCs based on the corpus data provided by *Department of Information and Media Sciences Faculty of International*

there is a pause between *shikat-ta* (‘‘scolded’’) and *sono kodomo-o* (‘‘the child-Acc’’) (see 2.2.4.4. and note 12 in Chapter 2).

(134) a. Taro-ga e_i shikat-ta, **sono kodomo$_i$-o.**
Taro-Nom scolded **the child -Acc**
“Taro scolded the child.”
b. *Kimi-wa [$_{CP}$ Taro-ga e_i shika-ta **sono kodomo$_i$-o** koto]-o shit-teiru no.
you -Top Taro-Nom scold-Past **the child -Acc** Comp-Acc know Q
“Do you know that Taro scolded **his son**?”

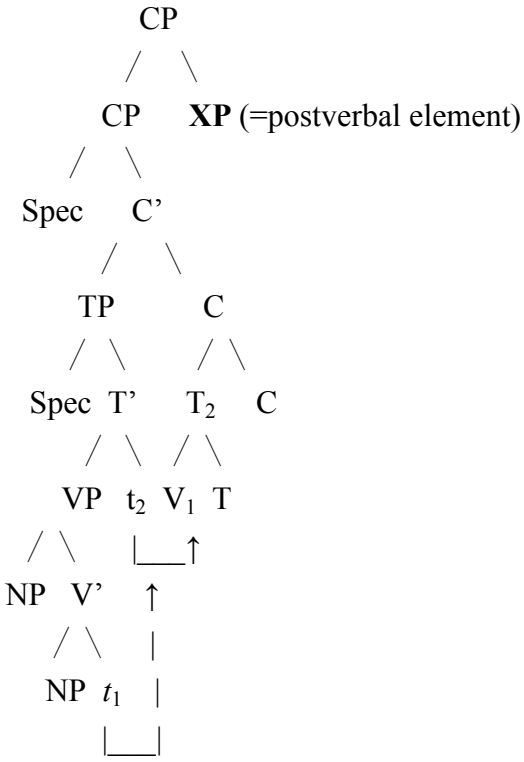
The difference in acceptability between (134a) and (134b) suggests that the failure of the JPVC to appear in the embedded clause cannot be attributable to the absence of final particles. It is therefore necessary to account for the root phenomenon observed in the JPVC in a different way.

Kural (1997) also discusses the impossibility of subordinate postverbal constructions. As mentioned in footnote 6, he deals with the Turkish counterpart of the JPVC, arguing for a movement analysis.[93] He argues that the relevant structure is as in (135), where all the projections are assumed to be head-final:

Environmental Engineering, The University of Kitakyushu in Japan (http://www.env.kitakyu-u.ac.jp/corpus/docs/index.html). This corpus contains 50 interviews between two native speakers of Japanese. Each interview consists of a 15 minute free conversation and a ten minute “role play”. In the corpus, 204 examples of JPVCs were found: eighty-eight JPVCs occurred with the final particles such as *yo* and *ne* (43.1%), eighty-six with the question particles (42.2 %), twenty-three without any particles (11.3%), seven with other particles including negative forms (3.4%).

[93] Kural (1997) claims that the postverval construction in Turkish obeys island constraints such as Subjacency.

(135)



Adapted from Kural (1997: 500)

He assumes that the verb raises rightward to T, and the T amalgamated with the verb moves rightward to C. He also assumes that the postverbal phrase moves rightward from the preverbal position and adjoins rightward to the CP at S-Structure.

As shown in (188a) in Chapter 2, the PVC in Turkish is also ruled out in embedded contexts. In order to exclude the possibility that the PVC appears in subordinate clauses, Kural makes two assumptions:

(136) a. Adjunction to an XP in a Case position is prohibited across the board, forcing the PVC to move out of its own CP into the main clause.[94]

b. Scrambled phrases cannot adjoin to any projection between the accusative Case position and the S-Structure position of the verb in C^0.

(Kural (1997: 502))

If (136) are extended to apply to the case of the JPVC, it will be possible to exclude the PVC within the embedded clause. However, (136) seem to be stipulations that are

[94] Kural notes that this assumption is associated with Chomsky (1986a), where adjunction to arguments is prohibited.

motivated only by the facts of the PVC. As I have shown above, the same effects as stipulations like (136) can be derived from independently motivated principles.

4.4.3 A necessary condition for the acceptability of the JPVC

The acceptability of the preceding clause is a necessary condition for the acceptability of the JPVC.[95] As discussed earlier, Endo (1989) attributes the unacceptability of examples like (137a) to a violation of the Structure Preservation Constraint.

(137) a. * Mizikai France-go no e_i yomda no, **syoosetu$_i$-o**. [=(7a)]
(I) Short French Poss read FP **novel -Acc**
''(I) read a short French e_i, **novel$_i$**.''
b. * Mizikai France-go no *e* yomda no.
(I) Short French Poss read FP
''(I) read a short French *e*.''
c. e_i yomda no, **syoosetu$_i$-o**.
(I) read FP **novel -Acc**
''(I) read e_i, **a novel$_i$**.''
d. *e* yomda no.
(I) read FP
''(I) read *e*.''

Endo (1989) claimed that in (137a) *syoosetu-o* (''novel-Acc''), which is assumed to be a head (N), adjoins to a maximal projection (CP), violating the Structure Preservation Constraint. As (137b) shows, however, even if the postverbal element is not present, the example is still unacceptable. By constrast, if *mizikai France-go no* (''short french'') is not present, as shown in (137c-d) respectively, the examples become acceptable regardless of the presence of a postverbal element. Hence, I propose the following descriptive statement:

(138) A postverbal element can be merged with its preceding clause only if the preceding clause is acceptable.[96]

With (138) in mind, let us consider (139):

[95] Sells (1999) takes a similar view.
[96] A similar statement is made in Sells (1999).

(139) a.* Taro-ga [$_{NP}$ takai *e*] tabe-ta yo. [= (92a)]
Taro-Nom expensive eat-Past FP
‘‘Taro ate (something) expensive.’’
b.* Taro-ga [$_{NP}$ takai *e*] tabe-ta yo **susi-o**.
Taro-Nom expensive eat-Past FP **sushi-Acc**
‘‘Taro ate expensive sushi.’’

The example in (139a) corresponds to the preceding clause in (139b). Hence, the example in (139b) has nothing with which the postverbal element *susi-o* (‘‘sushi-Acc’’) can be merged. Thus, (139b) is unacceptable.

The same reasoning applies to the following example:

(140) a. *[Totemo ie-o] kat-ta yo.
very house-Acc buy-Past FP
(Lit.) “(I) bought a very house.”
b. *[Totemo ie-o] kat-ta yo, **takai**
very house-Acc buy-Past FP **expensive**
(Lit.) “(I) bought a very house **expensive**.”

In (140b), the preceding clause *totemo ie-o kat-ta yo* (‘‘(I) bought a very house’’) corresponds to (140a), and hence, the postverbal element *takai* (‘‘expensive’’) cannot be merged with anything. (140b) is thus unacceptable.

4.4.4 Conclusion

In this section, I have first demonstrated that the syntactic positions to which postverbal phrases adjoin are determined by independently motivated interface conditions. Then, I have argued that the restriction of the JPVC to root clauses can also follow from the interface conditions. Finally, I have claimed that the acceptability of the preceding clause is a necessary condition for the acceptability of the JPVC.

4.5 Locality and Parsing strategies

In the previous sections, I have argued that JPVCs are not derived by movement (internal merge), and hence, that they have nothing to do with “movement constraints”. In other words, this claims that regardless of how far a postverbal

phrase is from the relevant element (e.g., a null argument), the postverbal phrase can be licensed as long as the licensing condition is satisfied. As described in Chapter 2, however, JPVCs display locality effects. In the present section, I will demonstrate that such locality effects follow from the interaction of parsing strategies with syntactic principles, based on the claim that JPVCs which display locality effects are grammatical. I will also argue that when a nominative Case marked quantified NP appears in postverbal position, the preferred reading of scopally ambiguous JPVCs can be accounted for in terms of the proposed parsing strategies. Finally, I will discuss the case of the locality effect which suggests that it is necessary to put forward a further parsing strategy.

4.5.1 Parsing Japanese sentences

Before discussing how locality effects in the JPVC are derived from the interaction of syntactic principles with parsing strategies, I will show how parse trees are assigned to normal Japanese sentences. Let us first consider the following simple sentence:

(141) Taro-ga susi -o tabe-ta, yo.
Taro-Nom sushi-Acc eat-Past FP
"Taro ate sushi."

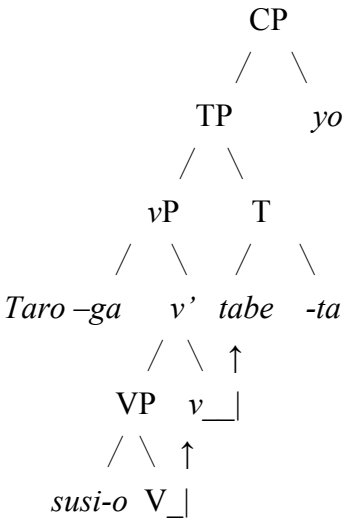
When *Taro-ga* ("Taro-Nom") is encountered, it is classified as a nominative Case marked NP, which has neither a theta-role assigned nor its Case feature checked. According to the Generalised Theta Attachment adopted in Chapter 3, which is reproduced in (142), to maximally satisfy syntactic principles (e.g., the theta criterion), *Taro-ga* is kept in store (i.e., left unattached to anything) until a theta-role assigner (i.e., a predicate) and T are encountered; otherwise, the theta criterion would not be locally satisfied.[97]

(142) Generalised Theta Attachment:
Every principle of the Syntax attempts to be maximally satisfied at every point during processing.

[97] In Japanese, T should not appear in the parse tree until a predicate is encountered in accordance with a head-driven parsing strategy.

When *susi-o* (“sushi-Acc”) is reached, it is identified as an accusative NP which has neither a theta-role assigned nor its Case feature checked. *Susi-o* is also kept in store for the same reason as *Taro-ga*. On reaching the verb *tabe-ta* (“ate”), the parser identifies it as a verb which may assign two theta-roles. The Generalised Theta Attachment attempts to apply to locally satisfy syntactic principles. The two stranded NPs (i.e., *Taro-ga* and *susi-o*) are integrated as arguments to have theta-roles assigned and their Case features checked on the assumption that the subject *Taro-ga* remains in the specifier position of *v*P where it has a theta-role assigned by *v*, and checks its Case feature against the Case feature of a finite T. When the final particle *yo* is encountered, C is merged to TP, yielding the parse tree as illustrated in (143), where a light verb to which the verb *tabe* (“eat”) is attached is assumed to move to T.

(143)



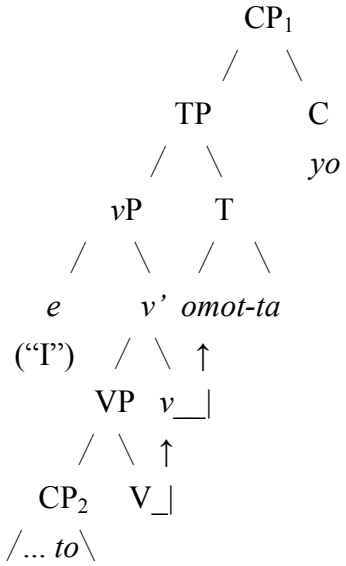
Let us then turn to a complex sentence:

(144) [$_{CP1}$ *e* [$_{CP2}$ Taro-ga susi-o tabe-ta to] omot-ta, yo.
(I) Taro-Nom sushi-Acc eat-Past Comp think-Past FP
“I thought that Taro ate sushi.”

In (144), the parse tree for an embedded clause is the same as (143) except the final particle *yo* (which is assumed to be dominated by C). When *to* (“Comp”) is encountered, the main clause is reanalysed as an embedded clause, and as a result, the clause is kept in store (i.e., left unattached to anything) until a theta-role assigner is encountered. When the matrix verb *omot-ta* (“think-Past”) is reached, it is identified as a transitive verb, and hence a null argument *e* is posited in subject position. The null argument and the stored clause have theta-roles assigned and their

Case features checked in appropriate positions. Then, *yo* (“Comp”) and TP are merged, yielding a parse tree like (145), the details irrelevant to the present discussion ignored:

(145)

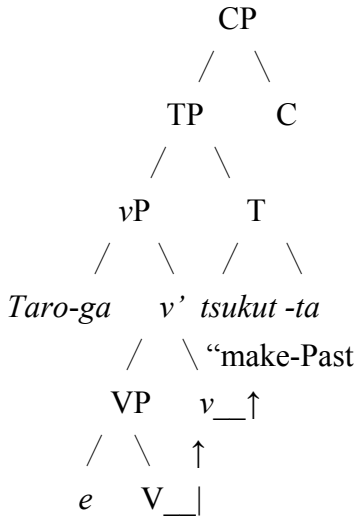


Let us now consider a different type of embedded clause: a relative clause.

(146) [NP [CP Taro-ga *e* tsuku-ta] susi]-o tabe-ta yo.
Taro-Nom make-Past sushi-Acc eat-Past FP
“(I) ate the sushi that Taro made.”

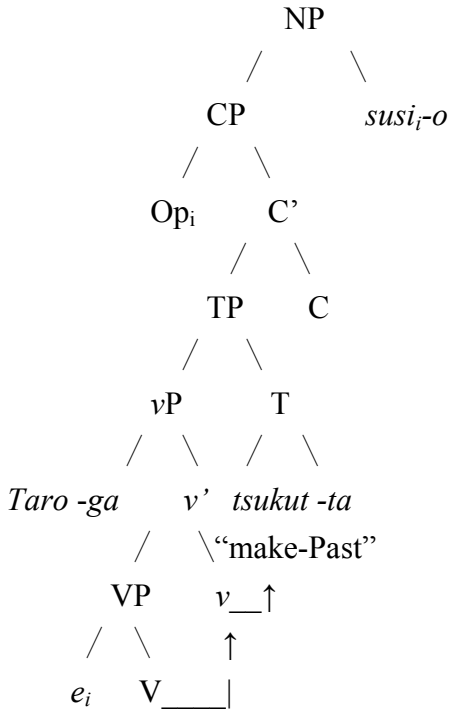
After *Taro-ga* (“Taro-Nom”) is encountered, it is identified as a nominative NP and left unattached for the same reason as mentioned above. On reaching *tsukut-ta* (“make-Past”), the parser realises that it is a verb which has two theta-roles, and hence it is necessary to postulate a gap as a null argument to maximally satisfy syntactic principles. The parse tree at this point is as follows:

(147) a.



When encountering *susi-o* ("sushi-Acc"), the parser realises that there are no pauses between *tsukutta* (''make-Past'') and *susi-o*. Hence the main clause analysis is revised such that the CP can be analysed as a relative clause in which a null operator (Op) is assumed to appear in the specifier of the CP as illustrated in (147b).[98] There the null object *e* is reanalysed as a variable bound by the Op:[99]

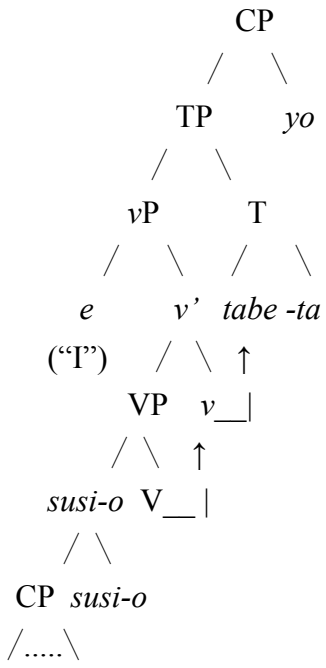
(147) b.



[98] I assume that the parser employs prosodic information.
[99] It is assumed that the null operator is externally merged to CP, and that the empty category *e* is construed as a variable in terms of the functional determination of empty categories proposed in the previous section (see (89b)). I am not concerned here with a more detailed discussion about internal structures of Japanese relative clauses. The structure in (147b) should thus be considered tentative.

At this stage, the whole NP is identified as an argument which does not have a theta-role and a Case feature checked. Thus, it is kept in store until a theta-role assigner appears. When the matrix verb *tabe-ta* ("eat-Past") is encountered, the stored whole NP is attached to the verb, at the same time as a null subject is postulated in the specifier of the matrix *v*P. A portion of the final parse tree is diagrammed in (147c):

(147) c.



4.5.2 JPVCs

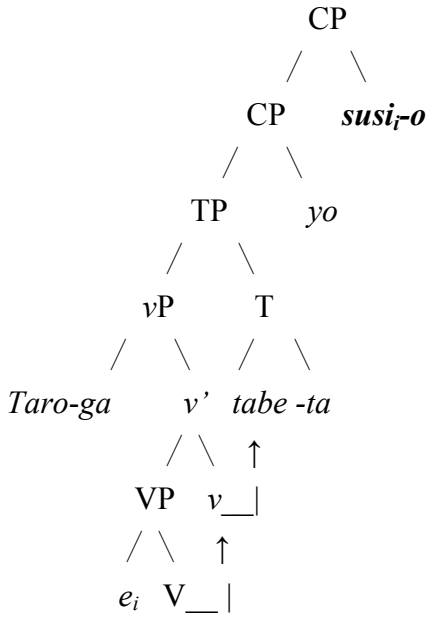
I will now return to an example of the JPVC which contains a null argument intended to be connected with a postverbal element:

(148) Taro-ga *e* tabe-ta yo, **susi-o**
Taro-Nom eat-Past FP, **sushi-Acc**
"Taro ate it, **sushi**."

In (148), when encountering the verb *tabe-ta* ("ate"), the parser identifies it as a verb which has two theta-roles. To maximally satisfy syntactic principles, the parser postulates a gap as a null argument (i.e., object), at the same time as integrating *Taro-ga* as an argument so that *Taro-ga* can receive a theta-role from the verb and check its Case feature against the Case feature of the finite T. The postulated null object is also assigned a theta-role and has its Case feature checked like an overt

counterpart. Then, *yo* ("Comp") is encountered, and C and TP are merged.[100] When *susi-o* ("sushi-Acc") is encountered, it is identified as an NP which has neither a theta-role assigned nor its Case feature checked. However, it is impossible to make a structural reanalysis such that the postverbal NP can receive a theta-role and check its Case feature. Otherwise, word order would be rearranged. Thus, the NP is adjoined to a root CP, and the licensing condition subsequently attempts to apply in order to assure that the postverbal NP can be licensed. The final parse tree is given in (149), where identical subscripts indicate that the postverbal element is expected to be linked with the null argument:

(149)



The parser attempts to associate the postverbal NP *susi-o* with an appropriate element *e* to satisfy the licensing condition in (109), reproduced in (150):

(150) The licensing condition for the postverbal element
(where X= any syntactic category):
A phrase α adjoined to XP is licensed only if α is associated with β such that
(i) α c-commands β, and
(ii) α is non-distinct from β in terms of Case features and honorific features

[100] If the clause ends with the final particle, the parse tree at this stage will be the same as in (141) except that the object position is null, as illustrated in (i).

(i) [$_{CP}$ [$_{TP}$ [$_{vP}$ Taro-ga [$_{VP}$ *e* tabe-ta]]] yo]
Taro-Nom eat-Past FP

In (149), *susi-o* is associated with the postulated null object *e* which is c-commanded and is non-distinct from it in terms of Case features and honorific features.[101] Hence the postverbal NP is licensed. Then, the postverbal phrase may be construed as if it is an object of the verb *tabe* ("eat") (see (88)). It may be interesting to note that if JPVCs have no final particles, the acceptability is decreased. The reason may be that a relative clause analysis has priority over a main clause analysis during processing of a sentence unless there is an intervening pause (see footnote 92). In other words, a final particle prevents a main clause from being reanalysed as a relative clause.

Let us next consider an example of the JPVC where a nonargument appears in postverbal position:

(151) Taro-ga susi-o tabe-ta yo, **kinoo.**
Taro-Nom sushi-Acc eat-Past FP **yesterday**
"Taro ate sushi, **yesterday**."

The example in (151) is analysed in the same way as in (141) until the final particle *yo* is encountered. That is, the parse tree at this point will be the same as in (143). When an element *kinoo* ("yesterday") is encountered, the parser adjoins it to the CP after noticing that there are no elements following it. The parse tree is thus the same as in (143) again except that the postverbal phrase is adjoined to CP. The licensing condition in (150) attempts to apply. As a result, *kinoo* is construed as a modifier of the verb phrase *sushi-o tabe-ta* ("ate sushi").

4.5.3 The Unconscious Reinterpretation Condition

If multiple interpretive options put a great burden on working memory (Reinhart (2006)), it is necessary to narrow down such options because the functioning of the parser is controlled by the limited working memory (see footnote 27 in Chapter 3). The human parser hence employs some strategies to avoid a great load being posed on working memory. Since there are many potential elements to be associated with the postverbal phrase, as discussed earlier, the parser should use a strategy to minimise multiple options for association. However, the postverbal element is adjoined uniquely to a root CP, and thus the re-interpretation concerning the postverbal element seems to be irrelevant to structural reattachment which is

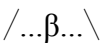
[101] As discussed in the previous section, there are many options to associate a postverbal phrase with an element within the preceding clause in accordance with the licensing condition. In the next subsection, I will propose a parsing strategy to reduce multiple options.

restricted by the syntactic reanalysis condition adopted in Chapter 3, reproduced in (152):

(152) Unconscious Reanalysis Condition:[102]

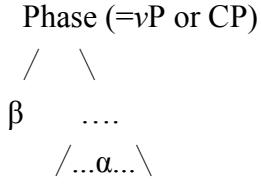
It is possible for the human parser to make a syntactic reanalysis, only if

(a) The original attachment site α contains the final attachment site β, as illustrated in (i):

(i)


or

(b) β c-commands α, and every phase (i.e., *v*P, CP) containing α contains β as shown in (ii), where order is irrelevant:

(ii)


It is therefore necessary to assume another strategy of how to reduce the burden on working memory. I propose a condition applicable to reinterpretations without syntactic reanalyses in (153):

(153) Unconscious Reinterpretation Condition (UREC) [103]

It is impossible for the human parser to associate a syntactic object X with α, if there is β such that α is similar to β and β is closer to X than α is.

‘‘Similar’’ and “closer” are defined in (154) and (155), respectively: [104]

(154) α is similar to β iff

a. α, β and X are non-distinct in terms of categorial features (i.e., syntactic categories) and Case features (e.g., nominative, accusative), or

b. both α and β are potential modifiees of X.[105]

[102] An unconscious reanalysis is low-cost. In other words, a high-cost reanalysis is done consciously (see Chapter 3).

[103] Low-cost association is unconscious reinterpretation.

[104] The conditional clause in (155b) makes it difficult to unify the three relations in terms of a path between a postverbal phrase and the relevant element. I will later give evidence for the necessity of this condition (see the example in (175) in section 4.5.3.3).

(155) Suppose that X c-commands α and β. Then,

β is closer to X than α is iff

a. β contains α, or

b. β c-commands α unless every phase (i.e., *v*P, CP) containing α contains β, or

c. otherwise (i.e., if β neither contains nor c-commands α), a path between β and X is shorter than the one between α and X.

Put in another way, the UREC states that attempts can be made to associate X with α without conscious efforts (i.e., in a low-cost manner) until an appropriate interpretation is given to X unless there are competing elements like β.

4.5.3.1 Locality effects

In light of the UREC in (153), it is now possible to consider the locality effects observed in the JPVC. For convenience, I will describe such effects according to the structural relation between α, the potential associate and β, a potential intervener, in (153) which is divided into three types in (155).

Type I: β containing α

I will begin with the type of (155a). Let us consider the examples in (156) where phrases containing null arguments are non-distinct in the sense of (154a) from the postverbal elements which are expected to be associated with the null arguments.[106]

(156) a. *? [$_{NP}$[$_{CP}$ e_i ano sensei-o sonkeisiteiru toiu] uwasa] -ga
that teacher-Acc respect Comp rumour-Nom
hontoo dat-ta yo, **gasuseitati$_i$-ga.**
true was FP **students -Nom**
''The rumour that *they$_i$* respect that teacher was true, **the students$_i$**''

[105] The problem of how to give a precise formulation of *potential modifiees* will be left to future research.

[106] *?* indicates relatively unacceptable examples.

b.*?[$_{NP}$[$_{CP}$ Op$_o$ [$_{TP}$ e_i t_o sonkeisiteiru]]sensei$_o$ -ga fueteimasu yo,
respect teachers-Nom increase FP
gakuseitati$_i$-ga.
students -Nom
‘‘Teachers who they$_i$ respect have increased, **students$_i$**.’’

c. *? [$_{NP}$[$_{CP}$ gakuseitati-ga e_i sonkeisiteiru toiu] uwasa] -o Taro-ga
students -Nom respect Comp rumour -Acc Taro-Nom
sitteiru yo**,** **ano sensei$_i$-o**
know FP **that teacher-Acc**
“Taro knows the rumour that the students respect *him*$_i$, **that teacher$_i$**.”

d. *?[$_{NP}$[$_{CP}$Op$_o$[$_{TP}$ t$_o$ e_i sonkeisiteiru]] gakuseitati$_o$]-o Taro-ga sitteiru yo,
respect students -Acc Taro-Nom know FP
ano sensei$_i$-o.
that teacher-Acc
“Taro knows the students who respect *him*$_i$, **that teacher$_i$**.”

e. *? [$_{CP}$ e_i ano sensei-o nayamasase-ta koto]-ga hontoo da-ta, yo.
that teacher-Acc annoyed that -Nom true was FP
[$_{CP}$ gakuseitati-ga benkyou-si nai koto]-ga
students -Nom study not that -Nom
“That *it*$_i$ annoyed that teacher was true, **[that the students do not study]$_i$**.”
“Teachers who *they*$_i$ respect have increased, **students$_i$**.”

f. *? [$_{CP}$ gakuseitati-ga e_i sinziteiru koto]-o Taro-ga sitteiru yo,
that teacher-Nom believe that -Acc Taro-Nom know FP
[$_{CP}$ ano sensei-ga yameru koto]-o
that teacher-Nom resign that -Acc
“Taro knows that the students believe *it*$_i$, **that that teacher will resign$_i$**.”

In (156a), the matrix subject is a complex NP [*gakuseitati-ga e sonkeisiteiru toiu uwasa*]-*ga* (‘‘[the rumour that *e* respect that teacher]-Nom’’) which has nominative Case as well as containing a null argument. The nominative Case marked postverbal NP *gakuseitati-ga* (“students-Nom”) c-commands the null argument and they are non-distinct with respect to Case features. According to the UREC in (153), the complex NP has priority over the null subject for association with the postverbal NP, because the complex NP contains the null subject and they are non-distinct in terms of categorial features and Case features. Thus, if the postverbal NP in (156a) attempts to be associated with the null subject within the complex NP, this

interpretation will be performed with consciousness.[107] The same is true of (158b), where the relative clause contains a null subject as well as a null operator and its trace.

In (156c), the matrix object is a complex NP which contains a null argument and has an accusative Case feature. When the matrix verb *sitteiru* (''know'') is encountered, the complex NP is analysed as a scrambled element because *Taro-ga* (''Taro-Nom'') follows the complex NP.[108] The postverbal NP *ano sensei-o* ("that teacher-Acc") is expected to be associated with the null argument, because they are non-distinct in terms of Case features. As in the case of (156a-b), however, the postverbal NP is prevented by the complex NP from being associated with the null argument, which is contained in the complex NP. In (156c), thus, the postverbal NP is difficult to associate with the null argument. The same occurs with (156d).[109] [110]

In (156e), a clause appears in postverbal position. The postverbal clause is non-distinct from a clause which contains a null argument with respect to categorial and Case features. Thus, the clause containing the null argument blocks the postverbal clause from being linked to the null argument. Thus, (156e) is difficult to comprehend. Similarly, in (156f), the postverbal clause is non-distinct from the clause containing a null argument with respect categorial and Case features. Thus, the postverbal clause is blocked from being associated with the null argument.

Type II: β c-commanding α[111]

I will then turn to the case of (155b) in which the association of a postverbal NP with a null subject inside a complex NP is blocked by an element c-commanding the null subject:

[107] The complex NP is non-distinct in terms of Case features from the postverbal NP, and they can hence be associated with each other. According to the interpretive rule in (88), they are not referentially non-distinct, resulting in failure to share properties with each other. Further, the postverbal NP cannot be construed as modifying the complex NP. Hence the example is difficult to comprehend.

[108] I follow Miyagawa (2001) in assuming that a scrambled element moves to the specifier of T (see (160a')).

[109] I will consider examples without overt matrix subjects like *Taro-ga* (see (158)).

[110] I will later discuss the case where an overt matrix subject appears in the initial position of a sentence (see (159)).

[111] *&* indicates that a postverbal phrase is associated with a wrong element, resulting in a different interpretation from what is intended.

(157) a. & [$_{NP}$[$_{CP}$ e_i ano sensei-o sonkeisiteiru toiu] uwasa]-o sitteiru yo**,**
that teacher-Acc respect Comp rumour-Acc (I) know FP
gakuseitati$_i$-ga.
students-Nom
"(I) know the rumour that *they$_i$* respect that teacher, **the students$_i$**."

b. &[$_{NP}$[$_{CP}$ Op$_o$[$_{TP}$ e_i t_o sonkeisiteiru]] sensei$_o$]-o sitteiru yo,
respect teahcher-Acc (I) know FP
gakuseitati$_i$-ga.
students-Nom
"(I) know the teacher who *they$_i$* respect, **the students**."

c. & [$_{CP}$ e_i ano sensei-o sonkeisiteiru koto]-o sitteiru yo**,**
that teacher-Acc respect that -Acc (I) know FP
gakuseitati$_i$-ga.
students -Nom
"(I) know that *they*$_i$ respect that teacher, **the students$_i$**."

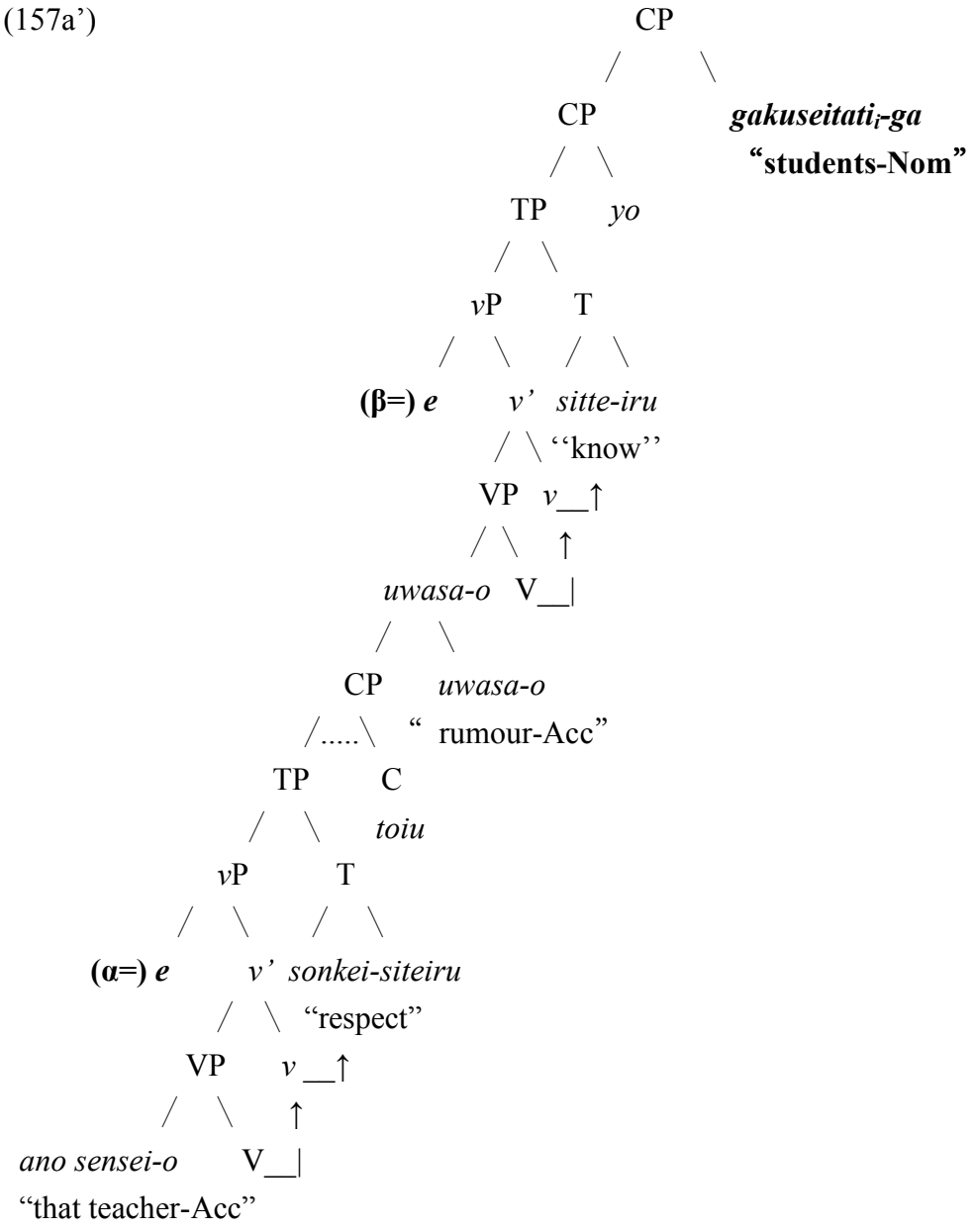
d. & [$_{CP}$ e_i ano sensei-o sonkeisiteiru kadouka]-o sitteiru yo**,**
that teacher-Acc respect whether -Acc (I) know FP
gakuseitati$_i$-ga.
students-Nom
"(I) know whether *they$_i$* respect that teacher, **the students$_i$**."

e. #[$_{CP}$ e_i ano sensei-o nayamase-ta koto]-o sitteiru yo,
that teacher-Acc annoyed that -Acc (I) know FP
[$_{CP}$ gakuseitati-ga benkyou-si nai koto]-ga
students -Nom study not that -Nom
"(I) know that *it$_i$* annoyed that teacher, **[that the students do not study]$_i$**."

In (157a), when the verb *sonkeisiteiru* (''respect'') is encountered, a null subject is postulated, and subsequently the null subject and *ano sensei-o* ("that teacher-Acc") have theta-roles assigned and their Case features checked. On reaching *toiu* (''Comp''), the parser reanalyses the main clause as an embedded clause, and hence keeps it in store until a theta-role assigner appears. When *uwasa*-o (''rumour-Acc'') is encountered, it is merged to the embedded clause, creating a complex NP. The complex NP does not have a theta-role, and thereby it is kept in store. As soon as the parser encounters the matrix verb *sitteiru* (''know''), it postulates a null argument as a matrix subject. Then, the null matrix subject and the stored complex NP are integrated to get theta-roles assigned and their Case features checked. Afterwards,

the final particle *yo* is merged with the matrix TP, and the postverbal NP is adjoined to the root CP. The final parse tree will be as follows:

(157a')



In (157a'), the null subject *e* (=β) in the main clause c-commands the null subject *e* (=α) in the embedded clause. They are non-distinct in terms of Case features. Thus, the matrix subject has priority over the embedded counterpart for association with the postverbal NP. (157a) would therefore have the reading that *the students know the rumour that someone respects that teacher*, which is different from what is expected.

Similarly, each of the postulated matrix null subjects in (157b-e) blocks the postverbal element from being associated with the embedded null subject, and hence each postverbal phrase prefers to be construed as a subject of the matrix verb although (157e) is semantically deviant.[112]

The following examples also show that matrix null arguments have priority over embedded counterparts for association with postverbal elements:

(158) a. *? [$_{NP}$[$_{CP}$ gakuseitati-ga e_i sonkeisiteiru toiu] uwasa]-o sitteiru yo,
students -Nom respect Comp rumour Acc (I) know FP
ano sensei$_i$-o.
that teacher-Acc
"(I) know the rumour that the students respect *him*$_i$, **that teacher$_i$**."

b.*?[$_{NP}$[$_{CP}$Op$_o$[$_{TP}$ t_o e_i sonkeisiteiru]] gakuseitati$_o$]-o sitteiru yo,
respect students -Acc (I) know FP
ano sensei$_i$-o.
that teacher-Acc
"(I) know the students who respect *him*$_i$, **that teacher$_i$**."

c. ??[$_{CP}$ gakuseitati-ga e_i sonkeisiteiru koto]-o sitteiru yo, **ano sensei$_i$-o**
Students-Nom respect that -Acc (I) know FP that teacher-Acc
"(I) know that the students respect *him*$_i$, **that teacher**."

d. ??[$_{CP}$ gakuseitati-ga e_i sonkeisiteiru kadouka]-o sitteiru yo,
Students -Nom respect whether -Acc (I) know FP
ano sensei$_i$-o
that teacher -Acc
"(I) know whether the students respect *him*$_i$, **that teacher**."

e. ??[$_{NP}$ [$_{CP}$ gakuseitati-ga e_i sinziteiru toiu] uwasa]-o sitteiru yo,
students -Nom believe Comp rumour-Acc (I) know FP
[$_{CP}$ ano sensei-ga yameru koto]-o
that teacher-Nom resign that -Acc
"(I) know the rumour that the students believe *it*$_i$, [**that that teacher will resign]$_i$**."

In (158a), when the verb *sonkeisiteiru* (''respect'') is reached, a null object is postulated, and subsequently *gakuseitai-ga* (''students-Nom'') and the null object have theta-roles assigned and their Case features checked. When *toiu* (''Comp'') is encountered, the main clause is reanalysed as an embedded clause, and hence it is

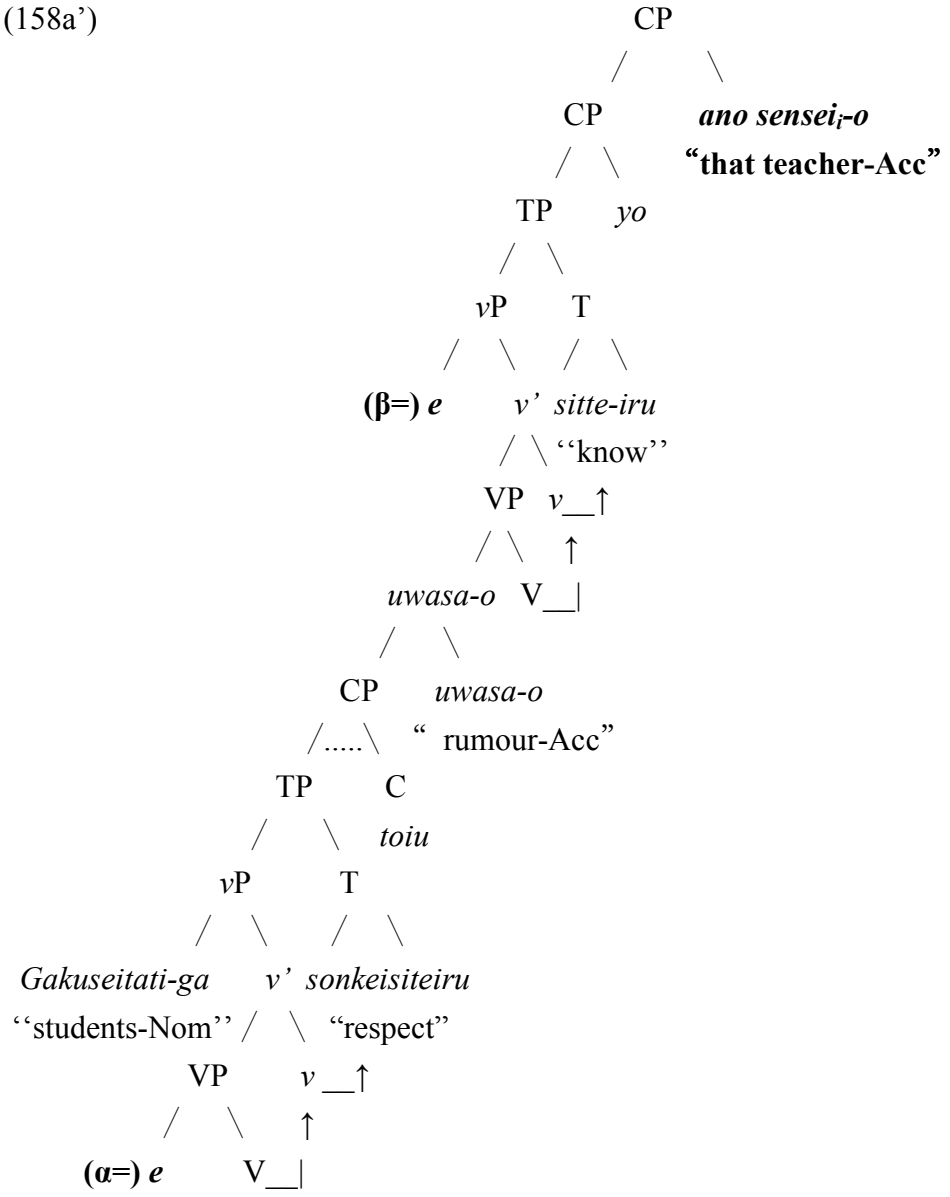
[112] This is because *sitteiru* (" know") does not take a sentential subject.

kept in store until a theta-assigner appears. When *uwaso-o* (‘‘rumour-Acc’’) is encountered, it is merged to the embedded clause, producing a complex NP. The complex NP does not have a theta-role, and hence it is kept in store. On reaching the matrix verb *sitteiru* (‘‘know’’), the parser postulates a null argument as a matrix subject. Then, the null matrix subject and the stored complex NP are integrated, theta-roles assigned and their Case features checked. Afterwards, the final particle *yo* is merged to the matrix TP, and the postverbal element *ano sensei-o* (‘‘that teacher-Acc’’) is adjoined to the root CP, yielding the parse tree as shown in (158a’).

In (158a’), the null subject *e* (=β) in the main clause c-commands the null object *e* (=α) in the embedded clause. They are non-distinct in terms of Case features, because their Case features are uninterpretable (i.e., deleted). Thus, the matrix null subject has priority over the embedded null object for association with the postverbal NP.[113] Likewise in (158b-e), each of the postulated matrix null subjects prevents the postverbal NP from being associated with the embedded null object, and thus the examples are difficult to comprehend. It should be noted that (158a-b) can be accounted for in a different manner: with respect to Case features, in each example, the postverbal element is non-distinct from the complex NP which contains the null object, and thus the postverbal NP is blocked by the complex NP from being associated with the null object (see (156)).[114]

[113] My proposed analysis allows (158a) to have the reading that *the teacher knows the rumour that the students respect someone*. This interpretation, however, is impossible. I will not enter into details here (see footnotes 62 and 77).
[114] Hence, the examples in (158a-b) are worse than those in (158c-e).

(158a')



Furthermore, the above argument also applies to the examples where overt matrix subjects appear in the initial position of a sentence:

(159) a. &Taro-ga [$_{NP}$[$_{CP}$ e_i ano sensei-o sonkeisiteiru toiu] uwasa]-o
Taro-Nom that teacher-Acc respect Comp rumour -Acc
sitteiru yo**, gakuseitati$_i$-ga.**
know FP **students -Nom**
"Taro knows the rumour that *they$_i$* respect that teacher, **the students$_i$**."

b. &Taro-ga [$_{NP}$[$_{CP}$ Op$_o$[$_{TP}$ e_i t_o sonkeisiteiru]] sensei$_o$]-o sitteiru yo,
Taro-Nom respect teacher-Acc know FP
gakuseitati$_i$-ga.
students -Nom
"Taro knows the teacher who *they$_i$* respect, **the students**."

c. &Taro-ga [$_{CP}$ e_i ano sensei-o sonkeisiteiru koto]-o sitteiru yo,
Taro-Nom that teacher-Acc respect Comp -Acc know FP
gakuseitati$_i$-ga.
students -Nom
"Taro knows that *they$_i$* respect that teacher, **the students$_i$**."

d. &Taro-ga [$_{CP}$ e_i ano sensei-o sonkeisiteiru kadouka]-o sitteiru yo**,**
Taro-Nom that teacher-Acc respect whether -Acc know FP
gakuseitati$_i$-ga.
students -Nom
"Taro knows whether *they$_i$* respect that teacher, **the students$_i$**."

In (159), on encountering the embedded verbs *sonkeisiteiru* ("respect"), the parser misanalyses *Taro-ga* as external arguments of the verbs. In other words, *Taro* in each example is construed as the subject corresponding to the embedded null subject in the example in (157a). The matrix null subjects postulated by the parser hence have priority over the true null subjects for association with the postverbal NPs.[115]

Type III: β neither containing nor c-commanding α

Let us then consider the type of (155c) (i.e., the case where β neither contains nor c-commands α). Observe (160), where postverbal NPs have accusative Case, matrix subjects are complex NPs containing null objects, and matrix objects appear in the initial position of sentences by undergoing the operation of scrambling:

[115] If *Taro* were reanalysed as a matrix subject through reattachment, this reanalysis would be high-cost because of a violation of the Unconscious Reanalysis Condition in (152b). I will later consider some examples which seem to be unacceptable due to syntactic reanalyses.

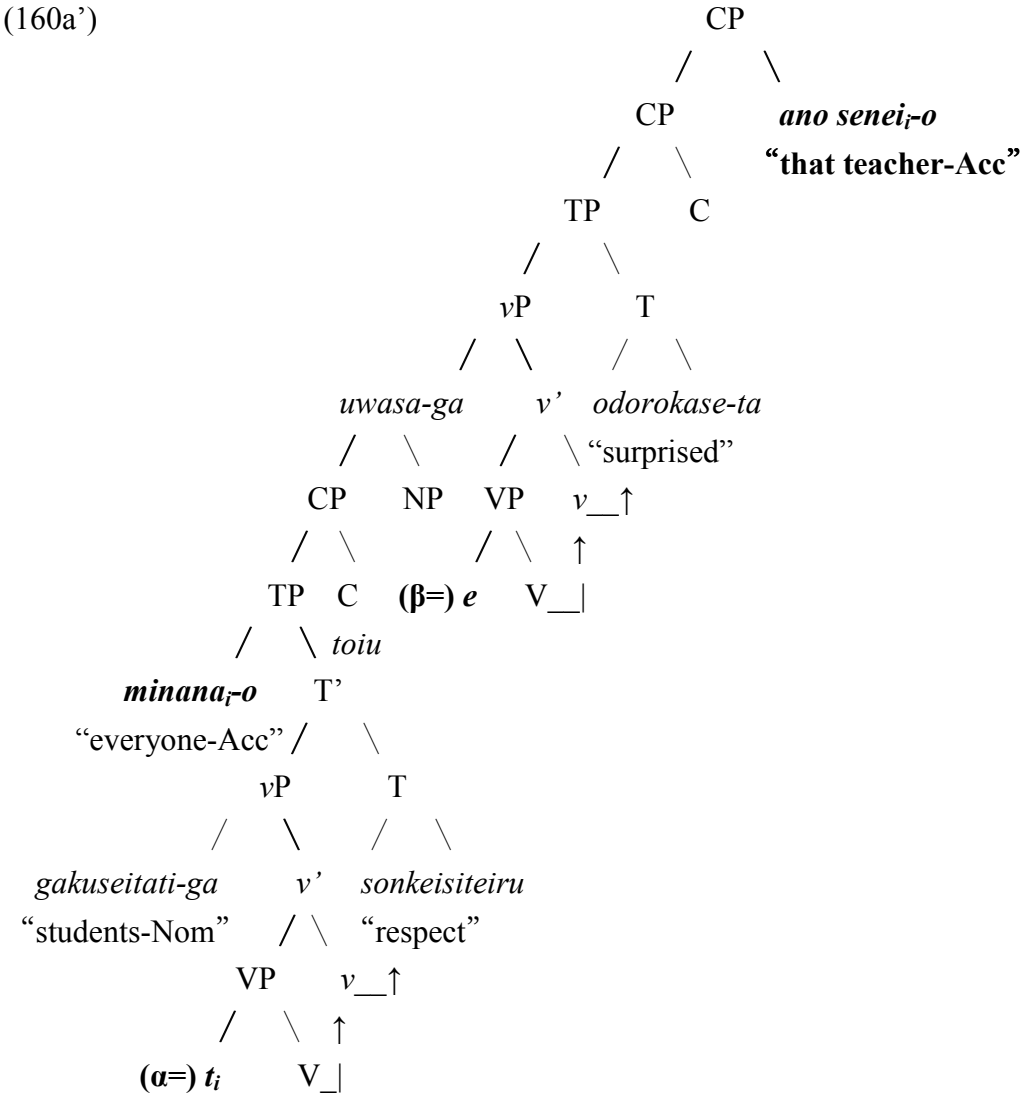
(160) a. & Minna-o [$_{NP}$[$_{CP}$gakuseitati-ga e_i sonkeisiteiru toiu] uwasa]-ga
Everyone-Acc students -Nom respect Comp rumour -Nom
odorokaseta yo, **ano sensei$_i$-o**.
surprised FP **that teacher-Acc**
''The rumour that the students respect *him$_i$* surprised everyone, **that teacher$_i$**''

b. & Minna-o [$_{NP}$[$_{CP}$Op$_o$[$_{TP}$ t_o e_i sonkeisiteiru]] gakuseitati-ga nayamase-ta yo,
Everyone-Acc respect students-Nom annoyed FP
ano sensei$_i$-o
that teacher-Acc
"The students who respect *him$_i$* annoyed everyone, **that teacher$_i$.**"

In (160a), when the embedded verb *sonkeisiteiru* (''respect'') is encountered, the parser incorrectly analyses *minna-o* (''everyone-Acc'') and *gakuseitati-ga* (''students-Nom'') as arguments of the embedded clause verb. The parse tree at this point thus contains no null arguments. *Minna-o* ("everyone-Acc") should also be construed as a scrambled element.[116] On reaching *toiu* (''Comp''), the parser amends the main clause analysis such that the clause can be assigned a theta-role, and thereby the clause is kept in store until a theta-role assigner appears. When encountered, a theta-role assigner *uwasa-ga* (''rumour-Nom'') is merged to the stored clause, and assigns the clause a theta-role, the complex NP created. However, the complex NP has no theta-role at this stage, and hence it is stored. When reaching a matrix verb, the parser postulates a null object as an argument of the matrix verb, and subsequently integrates both the null object and the complex NP to the matrix verb, so that both of them can be assigned theta-roles and Case-checked. As soon as the postverbal NP is attached to a root CP, the licensing condition attempts to apply in order to guarantee that the postverbal NP is licensed. The parse tree at this point is illustrated in (160a'):

[116] See footnote 108.

(160a')



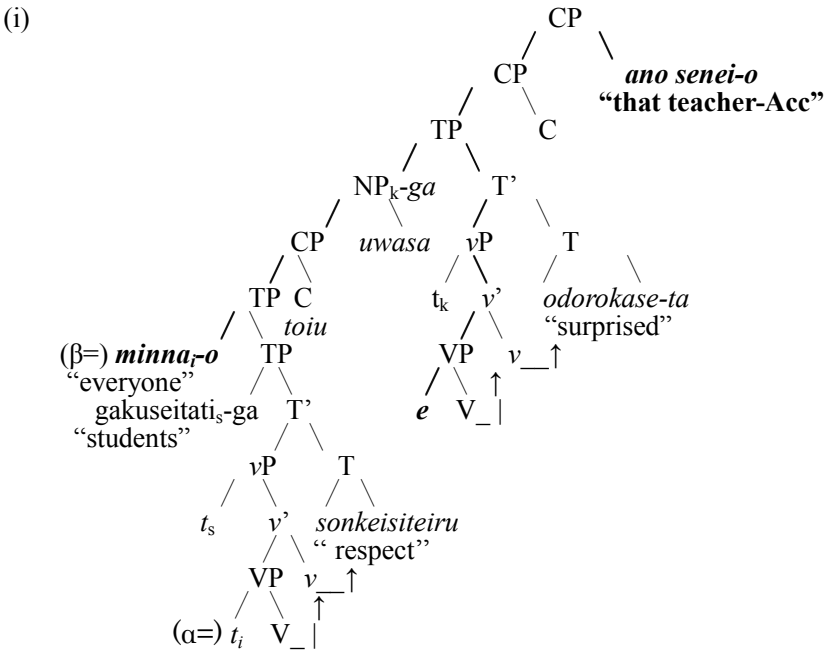
In (160a'), the postverbal NP *ano sensei-o* ("that teacher-Acc") fails to be associated with the embedded object t_i (=α), which is incorrectly analysed as the trace of the scrambled object *minna-o* (''everyone-Acc''). Furthermore, the null object of the matrix verb is closer to the postverbal NP than any other element non-distinct from it. The matrix object hence takes precedence over such elements for association with the postverbal NP. [117] The alternative analysis would reattach *minna-o* to the matrix

[117] If the nominative subject (i.e., *uwasa-ga* ("rumour-Nom")) moved to the specifier of T, the null object of the matrix verb would not have priority over *minna-o* ("everyone-Acc") for association with the postverbal NP because the null object has a longer path to the postverbal NP than *minna-o* has, as shown below:

TP as a scrambled element (see also footnote 115). This reanalysis, however, is costly (see (152b)). The postverbal NP in the above example is hence difficult to associate with the null object within the complex NP.[118]

In (160b), the relative clause contains a null argument that is expected to be associated with the postverbal NP. On encountering the embedded verb *sonkeisiteiru*

(i)



At first sight, there seem to be no empirical differences between the assumption immediately above and my proposed analysis. However, this assumption is untenable. Let us consider the example in (ii) where the postverbal NP is expected to be associated with the null object of the matrix verb:

(ii) [$_{NP}$[$_{CP}$ Minna-o gakuseitati-ga sonkeisiteiru toiu] uwasa]-ga e_i odorokas-eta yo,
Everyone-Acc students-Nom respect Comp rumour Nom surprised FP
ano sensei$_i$-o.
that teacher-Acc
''The rumour that the students respect everyone surprised *him$_i$*, **that teacher$_i$**''

In (ii), the postverbal NP is easy to associate with the matrix null object. This suggests that the complex NP subject remains in the specifier of *v*P and hence, that the null matrix object is closer to the postverbal NP than *minna-o* is (see also footnote 50).

[118] When null objects appear in matrix clauses as well as in embedded clauses, if postverbal elements can be construed as arguments sharing properties with the null matrix objects, they can be associated with the null embedded objects as well:

(i) a. [$_{NP}$[$_{CP}$gakuseitati-ga e_i sonkeisiteiru toiu]uwasa] -ga e_i odorokas-eta yo, **ano sensei$_i$-o.**
students-Nom respect Comp rumour-Nom surprised FP that teacher-Acc
''The rumour that the students respect e_i surprised e_i, that teacher$_i$.''
b.[$_{NP}$[$_{CP}$Op$_o$[$_{TP}$ *t$_o$ e$_i$* sonkeisiteiru]] gakuseitati-ga e_i nayamase-ta yo, **ano sensei$_i$-o**
respect students-Nom annoyed FP **that teacher-Acc**
''The students who respect e_i annoyed e_i, **that teacher$_i$.**''

In (ia), *ano sensei-o* (''that teacher-Acc'') can be associated with the null embedded object. The same is true of (ib). My proposed analysis, however, incorrectly predicts examples like (i) to be unacceptable because the null matrix objects would block the association of the postverbal elements with the null embedded objects in the same manner as in (160). I leave this problem open for future research.

("respect"), the parser analyses *minna-o* ("everyone-Acc") as an internal argument of the verb, and thereby the embedded clause is assumed not to contain a null object. When encountering the matrix verb, the parser postulates a null argument as a matrix object to maximally satisfy syntactic principles. The parse tree at this point would thus be as follows:

(160b') [$_{NP}$[$_{CP}$Op$_o$[$_{TP}$ t_o minna-o sonkeisiteiru]] gakuseitati]-ga *e* nayamase-ta.
everyone-Acc respect students -Nom annoyed
"The students who respect everyone annoyed *e*."

When the postverbal NP *ano sensei-o* ("that teacher-Acc") is encountered, it is attached to the root CP. The null object in the matrix clause is closer to the postverbal NP than the embedded object is, and hence the postverbal NP is associated with the postulated null object. Alternatively, if *minna-o* was reanalysed as a matrix object in such a way that a null object may be postulated in the embedded clause, this type of reattachment would be costly because the final attachment site is not sufficiently close to the original attachment site according to the Unconscious Reanalysis Condition in (152b). Thus the postverbal NP may not be associated with the null object in the embedded clause without conscious efforts.

I will turn to further examples in which incorrect syntactic-analysis leads to the wrong association:

(161) a. *? Taro-ga [$_{NP}$[$_{CP}$ gakuseitati-ga e_i sonkeisiteiru toiu] uwasa]-o
Taro-Nom students-Nom respect Comp rumour- Acc
sitteiru yo**, ano sensei$_i$-o.**[119]
know FP **that teacher-Acc**
"Taro knows the rumour that the students respect *him$_i$,* **that teacher**."

b. *? Taro-ga [$_{NP}$[$_{CP}$Op$_o$[$_{TP}$ t_o e_i sonkeisiteiru]] gakuseitati-o sitteiru yo,
Taro-Nom respect students-Acc sitteiru FP
ano sensei$_i$-o
that teacher-Acc
"Taro knows the students who respect *him$_i$*, **that teacher$_i$.**"

---

[119] The example in (i) is unacceptable probably because the complex NP containing a null argument has the same type of Case that the postverbal NP has:

(i) *? Taro-wa [$_{NP}$[$_{CP}$ gakuseitati-ga e_i sonkeisiteiru toiu] uwasa]-o sitteiru yo, **ano sensei$_i$-o**
Taro-Top student-pl-Nom respect Comp rumour-Acc know FP **that teacher-Acc**
"Taro knows the rumour that the students respect *him$_i$,* **that teacher**."

c. *? Taro-ga [$_{CP}$ gakuseitati-ga e_i sonkeisiteiru koto]-o sitteiru yo**,**
Taro-Nom students -Nom respect that -Acc know FP
ano sensei$_i$-o
that teacher-Acc
"Taro knows that the students respect *him$_i$,* **that teacher**."

d. *? Taro-ga [$_{CP}$ gakuseitati-ga e_i sonkeisiteiru kadouka]-o sitteiru yo**,**
Taro-Nom students -Nom respect whether -Acc know FP
ano sensei$_i$-o
that teacher-Acc
"Taro knows whether the students respect *him$_i$,* **that teacher**."

In each example in (161), whether the matrix object is a complex NP or a clause, *Taro-ga* ("Taro-Nom") is incorrectly analysed as an element in the embedded clause.[120] In other words, *Taro-ga* is construed as an argument of *sonkeisiteiru* ("respect"). Thus, there are no appropriate elements with which the postverbal NP can be associated. An alternative analysis would be to say that *Taro-ga* should be reattached to the matrix TP as the subject. Yet, this syntactic reanalysis would be costly according to the Unconscious Reanalysis Condition in (152b). Hence, the postverbal NPs in the above examples are difficult to associate with the null objects in the embedded clauses.

The above claim may be supported by the acceptability of the following example where incorrect analyses are avoided by the use of an overt object instead of a covert one.

(161) c' Taro-ga [$_{CP}$ gakuseitati-ga *aitsu$_i$-o* sonkeisiteiru koto]-o sitteiru yo**,**
Taro-Nom students-Nom that fellow-Acc respect that -Acc know FP
ano sensei$_i$-o
that teacher-Acc
"Taro knows that the students respect *that fellow*$_i$, **that teacher$_i$**."

In (161c'), when the embedded verb is encountered, *gakuseitati-ga* ("students-Nom") and *aitsus-o* ("that fellow-Acc") is correctly analysed as arguments of the embedded verb, and at the same time, *Taro-ga* is kept in store until the matrix verb appears.[121] When *sitteiru* ("know") is encountered, *Taro-ga* is analysed as the matrix subject

[120] *Taro-ga* ("Taro-Nom") could be construed as the NP marked with the exhaustive-listing *ga* (see Kuno (1973a: 38)).
[121] cf. (165b).

without syntactic reanalyses. The phrase which contains the overt object *aitsu-o* ("that fellow-Acc") is a clause (i.e., CP), and hence no elements prevents the postverbal NP from being linked to *aitsu*. The contrast in acceptability between (161c) and (161b') therefore indicates that (161c) involves a wrong analysis, but (161c') does not.

It is important to note that the example in (161a) remains unacceptable even if an overt object is inserted in the embedded clause like (161c'):

(161) a'. *? Taro-ga [$_{NP}$[$_{CP}$ gakuseitati-ga *aitsu$_i$-o* sonkeisiteiru toiu] uwasa]-o
Taro-Nom students-Nom that fellow-Acc respect Comp rumour Acc
sitteiru yo**, ano sensei$_i$-o**
know FP **that teacher-Acc**
"Taro knows the rumour that the students respect *that fellow*$_i$, **that teacher**$_i$."

In (161a'), *Taro-ga* would not be analysed as an element of the embedded clause. However, a matrix object containing the embedded object under discussion blocks the association of the postverbal NP with *aitsu* ("the fellow"), and thereby the postverbal NP is difficult to interpret as coreferential with *aitsu*.

I will then move on to a couple of examples without syntactic misanalyses, where matrix objects precede matrix subjects in (162) and matrix subjects precede matrix objects in (163).[122]

(162) a. *?[$_{NP}$[$_{CP}$ *e$_i$* ano sensei-o sonkeisiteiru toiu] uwasa]-o
that teacher-Acc respect Comp rumour -Acc
Taro-ga sitteiru yo**, gakuseitati$_i$-ga.**
Taro-Nom know FP **students -Nom**
"Taro knows the rumour that *they$_i$* respect that teacher, **the students$_i$**."
b.*? [$_{NP}$[$_{CP}$Op$_o$[$_{TP}$ *e$_i$ t$_o$* sonkeisiteiru]] sensei$_o$]-o Taro-ga sitteiru yo,
respect teacher-Acc Taro-Nom know FP
gakuseitati$_i$-ga.
students -Nom
"Taro knows the teacher who *they$_i$* respect, **the students**."

[122] At first sight, it seems that the examples in (162) are similar to those in (156c-d), but they are different. In (162), complex NPs and postverbal elements are different in terms of Case features and in (156c-d), on the other hand, complex NPs and postverbal elements are non-distinct in terms of Case features.

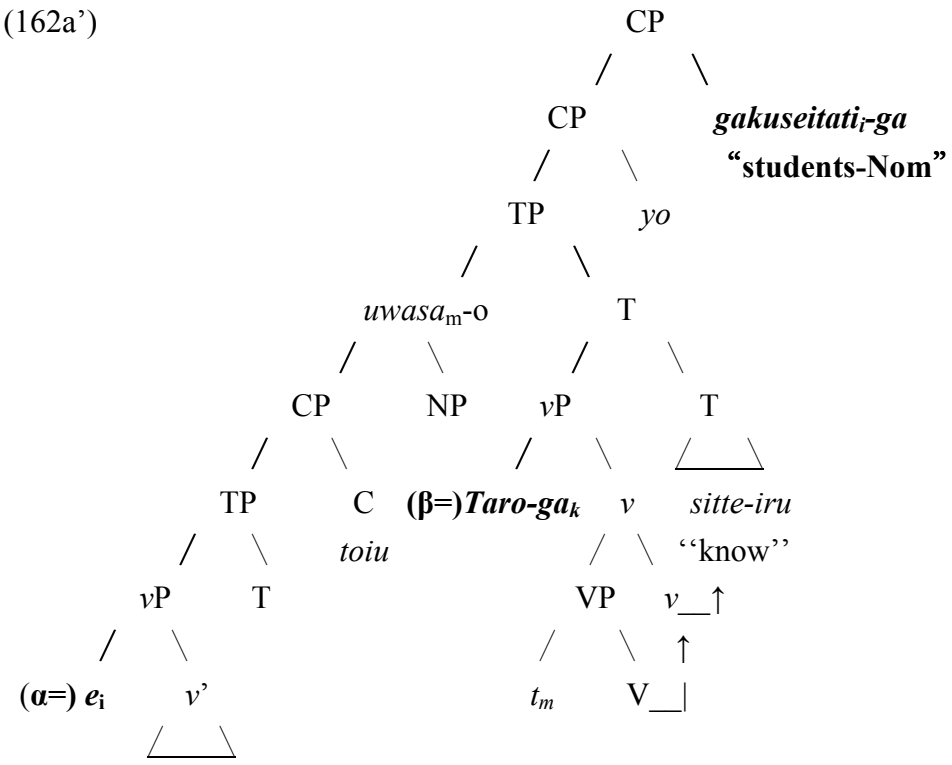
(163) a. *?[$_{NP}$[$_{CP}$gakuseitati-ga e_i sonkeisiteiru toiu] uwasa] -ga minna-o
students -Nom respect Comp rumour -Nom everyone-Acc
odorokas-eta yo, **ano sensei$_i$-o**.
surprised FP **that teacher-Acc**
''The rumour that the students respect *him*$_i$ surprised everyone, **that teacher$_i$**.''

b. *?[$_{CP}$ gakuseitati-ga e_i sonkeisiteiru koto] -ga minna-o
students -Nom respect that -Nom everyone-Acc
odorokas-eta yo, **ano sensei$_i$-o**.
surprised FP **that teacher-Acc**
''That the students respect *him*$_i$ surprised everyone, **that teacher$_i$**.''

c. *?[$_{CP}$ gakuseitati-ga e_i sonkeisiteiru kaduka] -ga minna-o
students -Nom respect whether -Nom everyone-Acc
nayamas-eta yo **ano sensei$_i$-o**.,
annoyed FP **that teacher-Acc**
''Whether the students respect *him*$_i$ surprised everyone, **that teacher$_i$**.''

When the matrix verb *sitteiru* (''know'') in (162a) is encountered, as (162a') shows, the complex NP (i.e., the matrix object) is analysed as a scrambled element, at the same time as the matrix subject *Taro-ga* and the trace of the complex NP have theta-roles assigned and their Case features checked, respectively.

(162a')



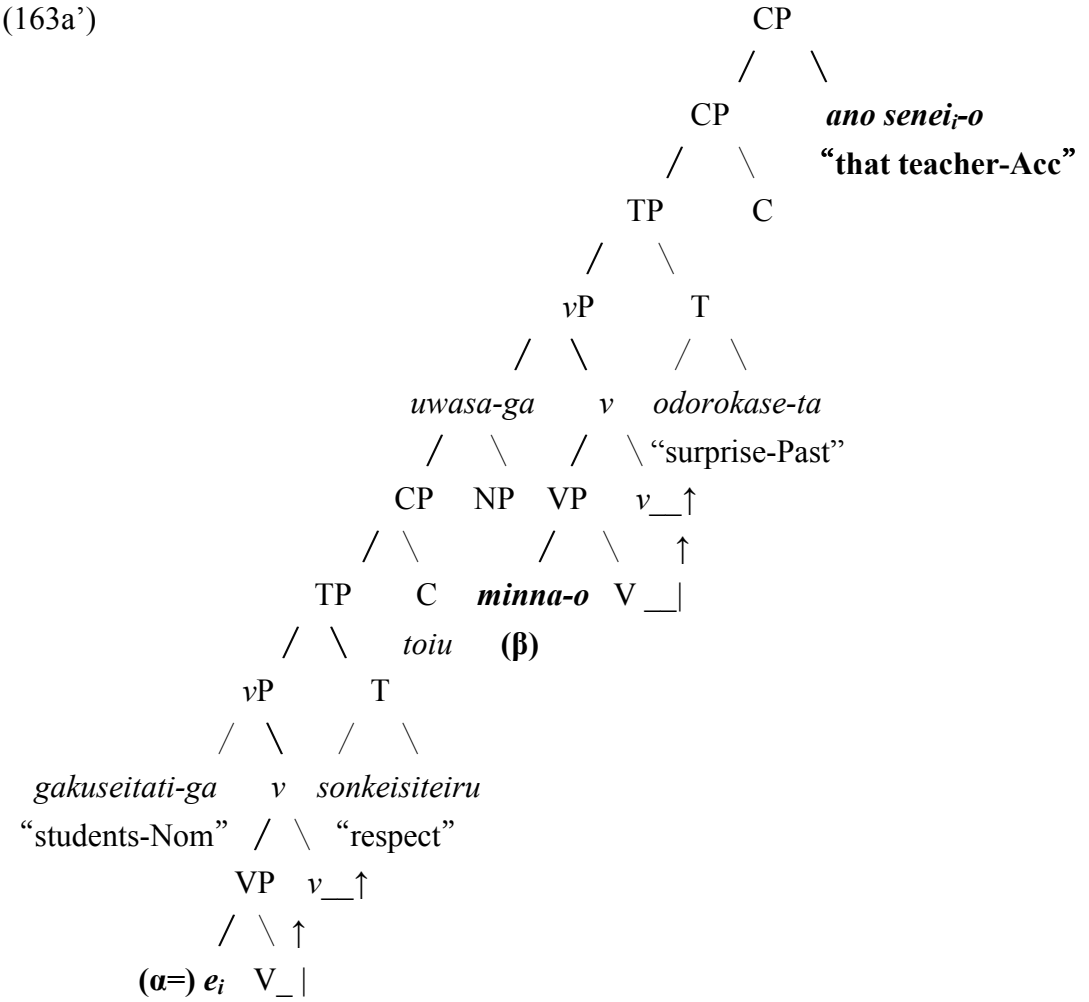
The matrix subject *Taro-ga* neither c-commands nor contains the null subject e_i (=α) which is postulated within the matrix object. However, e_i has a longer path to the postverbal NP than *Taro-ga* has. Thus, *Taro-ga* takes precedence over e_i for association with the postverbal NP. It is hence difficult to construe the postverbal NP as the subject within the complex NP. The same is true of the example in (162b) where the complex NP containing the relative clause not only has an accusative Case feature but it also contains a null subject within it. [123]

The example in (163a) has a partial parse tree as follows:

[123] The unacceptability of (i) would be accounted for in the same way as in (162a):

(i) *?[$_{NP}$[$_{CP}$ e_i ano sensei-o sonkeisiteiru toiu] uwasa]-o Taro-wa sitteiru yo**, gakuseitati$_i$-ga.**
that teacher-Acc respect Comp rumour Acc Taro-Top know FP **students-Nom**
"Taro, knows the rumour that *they*$_i$ respect that teacher, **the students$_i$**."

(163a')



As (163a') shows, the relevant null object e_i (=α) is farther from the postverbal NP than *minna-o* (=β) is. As a result, the postverbal NP is blocked by *minna-o* from being associated with the null object e_i (=α). The same is true of the examples in (163b-c).

4.5.3.2 The absence of locality effects

In this subsection, I will discuss acceptable examples where postverbal elements can be associated with null arguments which are contained in such embedded clauses as complement clauses and relative clauses. These examples are grouped into three types as listed below:

Type I: Phrases containing null arguments are different from postverbal phrases with respect to categorial features.

Type II: Phrases containing null arguments are different from postverbal phrase with

respect to Case features.

Type III: Phrases containing null arguments are different from postverbal phrases with respect to both categorial features and Case features.

These three types will be presented in turn.

Type I: Different categorial features

I will first consider Type I: phrases containing null arguments are different from postverbal phrases with respect to categorial features: Type I is subdivided into two patterns, as shown below:

(164) a. [$_{\mathbf{CP}}$ e_i…….]-Nom ….**NP**$_i$-Nom
e_i can be associated with a postverbal nominative Case marked NP

b. [$_{\mathbf{NP}}$ e_i…….]-Nom ….**CP**$_i$-Nom
e_i can be associated with a postverbal nominative Case marked CP

Observe (165), which belong to (164a) (cf. (156a)).

(165) a. [$_{CP}$ e_i ano sensei-o sonkeisiteiru koto]-ga hontoo da-ta yo,
that teacher-Acc respect that -Nom true was FP
gakuseitati$_i$-ga.
students$_i$-Nom
"That *they$_i$* respect that teacher was true, **the students$_i$**.

b.[$_{CP}$ e_i ano sensei-o sonkeisiteiru kadouka]-ga juuyou desu yo,
that teacher-Acc respect whether -Nom important is FP
gakuseitati$_i$-ga.
Students -Nom
"Whether *they$_i$* respect that teacher was important, **the students$_i$**.

In (165a), a nominative Case marked NP *gakuseitat-ga* (''students-Nom'') appears in postverbal position. It is different in terms of categorial features from the clause [$_{CP}$ *ano sensei-o sonkeisiteiru koto*]-*ga* (''[that *e* respect that teacher]-Nom''), which contains a null argument. That is, the clause is not similar to the null argument in the sense of (154). Thus, the clause does not prevent the postverbal NP from being associated with the null argument, and hence (165a) is acceptable. The same is true of (165b).

Let us next turn to the case of (164b):

(166) [$_{NP}$ [$_{CP}$ e_i ano sensei-o nayamasase-ta toiu] uwasa]-ga
that teacher-Acc annoyed Comp rumour-Nom
hontoo da-ta yo, **[$_{CP}$ gakuseitati-ga benkyou si nai koto]-ga**
true was FP students -Nom study do not that -Nom
"The rumour that it_i annoyed that teacher was true, [**that the students do not study]$_i$**."

In (166), the clause [*gakuseitati-ga benkyou si nai koto*]-*ga* (''[that the students do not study]-Nom'') appears postverbally. With respect to categorial features, the clause is different from the complex NP [$_{NP}$ e_i *ano sensei-o nayamasase-ta toiu uwasa*]-*ga* (''[the rumour that *it* annoyed that teacher]-Nom'') which contains a null argument. As in the case of (165), nothing blocks the postverbal element from being associated with the null argument. Thus, (166) is acceptable.

Type II: Different Case features

I will then consider Type II: phrases containing null arguments are different from postverbal phrases with respect Case features: Type II is further classified into two patterns, as shown below:

(167) a. [$_{NP}$……. e_i…..]-**Nom** ….NP$_i$-**Acc**
e_i can be associated with a postverbal accusative Case marked NP
b. [$_{CP}$……. e_i…..]-**Nom** ….CP$_i$-**Acc**
e_i can be associated with a postverbal accusative Case marked CP

Now let us look at the examples in (168) which belong to the first pattern in (167a):

(168) a. [$_{NP}$[$_{CP}$ gakuseitati-ga e_i sonkeisiteiru toiu] uwasa]-ga hontoo dat-ta yo,
Student-Pl.-Nom respect Comp rumour-Nom true was FP
ano sensei$_i$-o
that teacher-Acc
"The rumour that the students respect him_i was true, **that teacher.**"

b.[$_{NP}$[$_{CP}$ Op$_o$ [$_{TP}$ e_i t_o sonkeisiteiru]]gakuseitati$_o$-ga fueteimasu yo,
respect students -Nom increase FP
ano sensei$_i$-o.
that teacher-Acc
"Students who respect *him$_i$* have increased, **that teacher$_i$**."

In (168a), an accusative Case marked NP *aso sensei-o* (''that teacher-Acc'') appears in postverbal position. It is different in terms of Case features from the complex NP [$_{CP}$ *gakuseitati-ga sonkeisiteiru toiuu uwasa*]-*ga* (''[the rumour that the students respect *e*]-Nom'') which contains a null arugment. In other words, the complex NP is not similar to the null argument in the sense of (154). Thus, the complex NP does not block the postverbal NP from being associated with the null argument, and hence (168a) is acceptable. The same account can be given for (168b). [124]

The following example belongs to the second pattern in (167):

(169) [$_{CP}$ gakuseitati-ga e_i sinziteiru koto]-ga hontoo dat-ta yo,
students-Nom believe that -Nom true was FP
[$_{CP}$ ano sensei-ga yameru koto]-o
that teacher-Nom resign that-Acc
"That the students believe *it$_i$* was true, [**that that teacher will resign]$_i$**."

In (169), a clause [*ano sensei-ga yameru koto*]-*o* (''[that that teacher will resign]-Acc'') appears postverbally. With respect to Case features, the clause is different from a clause [*gakuseitati-ga sinziteiru koto*]-*ga* (''[the students believe *e*]-Nom'') which contains a null argument. As in the case of (168), nothing blocks the postverbal element from being associated with the null argument. Thus, the acceptability of (169) results.

Type III: Different categorial and Case features

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124 The example in (i) is less acceptable than those in (168) although the postverbal phrase is different from the complex NP which contains a null argument in terms of Case features:

(i) *? John-ga [$_{NP}$[$_{CP}$Mary-ga e_i age-ta] hon]-o nusunda yo, **Bill$_i$-ni**.
John-Nom Mary-Non gave book-Acc stole FP **Bill-Dat**
"John stole a book that Mary gave to him$_i$. to **Bill$_i$**"

The reason that (i) is unacceptable may be that an NP marked with a dative particle *ni* is likely to be analysed as a locative PP, and hence, that *Bill-ni* ("Bill-Dat") is interpreted as a potential modifier of the matrix predicate.

Now let us turn to Type III. This type is also subdivided into two patterns:

(170) a. [**CP**……. e_i…..]-**Nom** ….**NP$_i$-Acc**
e_i can be associated with a postverbal accusative Case marked NP
b. [**NP**……. e_i…..]-**Nom** ….**CP$_i$-Acc**
e_i can be associated with a postverbal accusative Case marked CP

Observe the following examples:

(171) a. [$_{CP}$ gakuseitati-ga e_i sonkeisiteiru koto]-ga hontoo dat-ta yo,
students-Nom respect that -Nom true was FP
ano sensei$_i$-o
that teacher-Acc
"That the students respect *him$_i$* was true, **that teacher.**"
b. [$_{CP}$ gakuseitati-ga e_i sonkeisiteiru kadouka]-ga juuyou des yo,
students-Nom respect that -Nom important is FP
ano sensei$_i$-o
that teacher-Acc
"Whether the students respect *him$_i$* is important, **that teacher.**"

In (171a), an accusative Case marked NP *ano sensei-o* (''that teacher-Acc'') appears in postverbal position. The postverbal NP is different from the clause [*gakuseitati-ga sonkeisiteiru koto*]-*ga* (''[the students respect *e*]-Nom'') which contains a null argument with respect to not only categorial features but also Case features. Hence, the clause is not similar to the null argument in the sense of (154), resulting in failure to block the association of the postverbal NP with the null argument. Thus, (171b) is acceptable. The same is true of (171b).

The example in (172) belongs to the second pattern in (167b):

(172) [$_{NP}$[$_{CP}$ gakuseitati-ga e_i sinziteiru toiu] uwasa]-ga hontoo dat-ta yo,
students-Nom believe Comp rumour-Nom true was FP
[$_{CP}$ ano sensei-ga yameru koto]-o
that teacher-Nom resign that-Acc
"The rumour that the students believe *it$_i$* was true, [**that that teacher will resign]$_i$**."

In the above example, the clause [*ano sensei-ga yameru koto*]-*o* (‘‘[that that teacher will resign]-Acc’’) appears in postverbal position. With respect to categorial and Case features, the clause is different from the complex NP [*gakuseitati-ga sinziteiru toiu uwasa*]-*ga* (‘‘[the rumour that the students believe *e*]-Nom’’) which contains a null argument. As in the case of (171), nothing blocks the postverbal element from being associated with the null argument, resulting in the acceptability of (172).

All the examples observed above contain nothing corresponding to β, a potential intervener, in (153). Postverbal elements can thus be associated with null arguments within embedded clauses. This indicates that the locality effects observed in JPVCs are irrelevant to syntactic constraints on movement.

Finally, I will mention a problematic case where copulative sentences involve complex predicative NPs:

(173) a. kore-wa [$_{NP}$[$_{CP}$ Op$_1$ e_i t$_1$ oikaketa]] neko da yo, **ano inu$_i$-ga**.
This-Top chased cat is FP **that dog-Nom**
“This is a cat which *it$_i$* chased, **that dog$_i$**.”
b. kore-wa [$_{NP}$[$_{CP}$ Op$_1$ t$_1$ e_i oikaketa]] neko da yo, **ano inu$_i$-o**.
This-Top chased cat is FP **that dog-Acc**
“This is a cat which chased *it$_i$*, **that dog$_i$**.”

In (173), the NPs marked with the topic particle *wa* (i.e., *kore-wa* (‘‘this-Top’’)) are non-distinct from the postverbal NPs in terms of categorial features and Case features, c-commanding null arguments which are contained in complex predicative NPs [$_{NP}$ *e oikaketa neko*] (‘‘ a cat which it chased or a cat which chased it’’). Hence *kore-wa* would prevent the postverbal elements from being associated with the null arguments (i.e., *e*). Furthermore, even if the NPs marked with the topic particle *wa* are not c-commanded by the postverbal elements, the complex predicative NPs, which contain the null arguments, block the association of the postverbal NPs with the null arguments because the complex NPs are non-distinct from the postverbal NPs with respect to Case features. However, each postverbal element in (173) is easy to associate with the null argument *e* within the complex predicate NP. At this point, I have no clear idea of how this problem should be dissolved. [125]

[125] *Kore-wa* could be reattached to CP, as schematically illustrated below:

4.5.3.3 Postverbal Adjuncts

In this subsection, I will discuss the case where adjuncts appear in postverbal position. Let us first consider examples like (174) which display locality effects:

(174) a &[Shushou-ga kinoo at-ta josei]-o mitanda yo,
Prime minister-Nom yesterday met with woman-Acc saw FP
Shinbashino-no ryoutei-de.
Shinbashi -Gen Japanese-style restaurant at
"(I) saw the woman whom the prime minister met with **at a Japanese-style restaurant in Sinbashi** yesterday."

(Soshi and Hagiwara (2004: 423))

b. &Watasi-wa [$_{CP}$ Taro-ga ano mise de koinu-o kat-ta to] omot-ta yo,
I -Top Taro-Nom that shop at puppy-Acc bought that thought FP
kinoo.
yesterday.
"(I) thought [that Taro bought a puppy at that shop], **yesterday**."

In (174a), after encountering the postvebal PP, the parser realises that there are no following elements, and it then starts to associate the postverbal phrase with a modifiee. The matrix verb *mita* ("saw") can be modified by the locative PP, and it also contains the complex NP in which the other verb *atta* ("met with") is contained, and hence the matrix verb is chosen as a modifiee over the embedded one. In other words, the postverbal locative PP is difficult to associate with the verb *at-ta* ("met with") within the relative clause.

The same account can be given for (174b). The matrix verb *omot-ta* ("thought") not only contains the embedded verb *kat-ta* ("bought") but it can also be modified by

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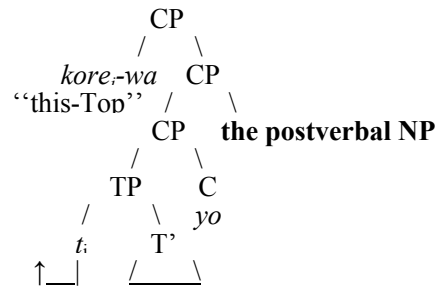
(i)



If topicalised elements occupy the specifier position of TP, the reattachment to CP is low-cost according to the Reanalysis Condition. In the structure in (i), *kore-wa* is no longer a potential intervener because it is not c-commanded by the postverbal NP.

kinoo (“yesterday”). Hence, the matrix predicate blocks the association between *kinoo* and *kat-ta*.

Next, let us turn to the case where, although one element asymmetrically c-commands another one, the former has no priority over the latter for association:

(175) Kyooju-ga kuruma-o kat-ta yo, **yuumei-na**
Professor-Nom car-Acc bought FP, **well-known**
(Lit.) “A professor bought a car, **well-known.**”

The example in (175) has two readings: the postverbal adjective *yuumei-na* (“well-know”) may modify *kyooju-ga* (“professor-Nom”) or *kuruma-o* (“car-Acc”). This ambiguity can be derived from the UREC. That is, although a subject c-commands an object, the subject does not block the association between the object and the postverbal phrase because the subject is contained in every phase (i.e., *v*P) which contains the object (see (155b)) (note that *kyooju-ga* occupies the specifier position of *v*P). Hence, *yuumei-na* (“well-known”) may be associated with both arguments without conscious efforts. This account is further supported by the following unambiguous example:

(175’) Kuruma$_i$-o kyooju-ga t_i kat-ta yo, **yuumei-na**
car-Acc Professor-Nom bought FP, **well-known**
Lit. “A car$_i$, a professor bought t_i, **well-known.**”

In (175’), the object *kuruma-o* (‘‘car-Acc’’) is moved to the specifier position of TP by scrambling. The scrambled NP c-commands *kyooju-ga* (“professor-Nom”), and is not contained in every phase which contains *kyooju-ga*. Hence, *kuruma-o* has priority over *kyooju-ga* for association with the postverbal element *yuumei-na* (“well-known”), resulting in the absence of ambiguity.

Finally, let us consider the example in (176) where the postverbal relative clause can be associated with an element in the embedded clause:

(176) [$_{CP}$ Taro-ga kuruma-o damatte untensi-ta koto]-o
(I-Top) Taro-Nom car -Acc without permission drove that -Acc
siteru yo, [**Hanako-ga kinoo kat-ta]**.
know FP **Hanao -Nom yesterday bought**
“I know that Taro drove the car **Hanako bought yesterday** without permission.”

There are no potentially modifiees between the postverbal relative clause and *kuruma* ("car") in the embedded clause, and the postverbal relative clause can hence be associated with *kuruma*.

4.5.3.4 Interim Summary

The examples discussed in the previous subsections (i.e., 4.5.3.1; 4.5.3.2; 4.5.3.3) are summarised in table 2, where β is an intervening element similar to both α and a postverbal phrase in the sense of the UREC in (153):

Examples	(Dis)similarity Pattern	Relation between α and β	Locality effect
(156a,b)	[**NP** e_i …]-Nom…**NP$_i$-Nom**	β contains α	Yes
(156c,d)	[**NP** e_i …]-Acc….**NP$_i$-Acc**	β contains α	Yes
(156e)	[CP e_i….]-Nom….**CP$_i$-Nom**	β contains α	Yes
(156f)	[CP e_i…]-Acc…. **CP$_i$-Acc**	β contains α	Yes
(157a,b)	[NP e_i…]-Acc….**NP$_i$-Nom**	β c-commands α	Yes
(157c-d)	[CP e_i…]-Acc….**NP$_i$-Nom**	β c-commands α	Yes
(157)	[CP e_i….]-Acc….**CP$_i$-Nom**	β c-commands α	Yes
(158a,b)	[NP e_i...]-Acc…..**NP$_i$-Acc**	β c-commands α	Yes
(158c,d)	[CP e_i…]-Acc….**NP$_i$-Acc**	β c-commands α	Yes
(158e)	[CP e_i…]-Acc….**CP$_i$-Acc**	β c-commands α	Yes
(159a,b)	SUBJ [NP e_i…]-Acc…**NP$_i$-Nom**	β c-commands α	Yes
(159c,d)	SUBJ [CP e_i…]-Acc….**NP$_i$-Nom**	β c-commands α	Yes

Examples	(Dis)similarity Pattern	Relation between α and β	Locality effect
(160a-b)	OBJ [$_{NP}$ e_i...]-Nom….**NP$_i$-Acc**	Neither	Yes
(161a,b)	SUBJ [$_{NP}$ e_i..]-Acc…..**NP$_i$-Acc**	Neither	Yes
(161c,d)	SUBJ [$_{CP}$ e_i…]-Acc... **NP$_i$-Acc**	Neither	Yes
(161c,d)	SUBJ [$_{CP}$ e_i…]-Acc... **NP$_i$-Acc**	Neither	Yes
(162a,b)	[$_{NP}$ e_i….]-Acc…SUBJ, **NP$_i$-Nom**	Neither	Yes
(163a)	[$_{NP}$ e_i...]-Nom…OBJ, **NP$_i$-Acc**	Neither	Yes
(163b,c)	[$_{CP}$ e_i...]-Nom…OBJ, **NP$_i$-Acc**	Neither	Yes
(165a,b)	[**$_{CP}$** e_i…….]-Nom ...**NP$_i$-Nom**	N/A	No
(166)	[**$_{NP}$** e_i…….]-Nom ...**CP$_i$-Nom**	N/A	No
(168)	[$_{NP}$……. e_i....]-Nom …**NP$_i$-Acc**	N/A	No
(169)	[$_{CP}$……. e_i…..]-Nom ….**CP$_i$-Acc**	N/A	No
(171a,b)	[**$_{CP}$**……. e_i…..]-Nom ….**NP$_i$-Acc**	N/A	No
(172)	[**$_{NP}$**……. e_i…..]-Nom ...**CP$_i$-Acc**	N/A	No
(174a,b)	[$_{v}$P ….. vP] **PP**	β contains α	Yes
(175)	[$_{CP}$[$_{CP}$ NP-Nom NP-Acc…] **CP**]	N/A	No (ambiguous)
(176)	[$_{CP}$ [$_{CP}$ …..NP……]…..] **CP**	N/A	No

Table 2: The presence and absence of locality effects in the JPVC

4.5.3.5 Scope ambiguity

It was shown in Chapter 2 that the JPVC has a scope relation which is different from the one which the corresponding non-JPVC has, the relevant examples reproduced below:[126]

(177) Dareka-ga subete-no-hon-o yom-da.
someone-Nom all book-Acc read
"Someone read all books."
someone >> all, *all >>someone

(178) a. Dareka-ga e_i yom-da yo, **subete-no-hon$_i$-o**.
someone-Nom read FP, **all book-Acc**
"Someone read *them$_i$*, **all books$_i$**."
someone >> all, all >>someone
b. e_i Subete-no-hon-o yom-da yo, **dareka$_i$-ga**.
all book-Acc read FP, **someone-Nom**
"*He$_i$* read all books, **someone$_i$**."
someone >> all, ??all >>someone

In (177), *dareka* ("someone") takes scope over *subete-no hon* ("all books"), but not vice versa. By contrast, in (178a), either *dareka* ("someone") or *subete-no-hon* ("all books") may take scope over the other. As for (178b), as mentioned in Chapter 2, *dareka* ("someone") preferentially takes scope over *subeteno-hon* ("all books").

In what follows, I will demonstrate that the preferred reading of a scope ambiguity in the JPVC can follow from the parsing strategies I have adopted thus far. Before discussing this point, I propose a scope assignment rule in (179) to capture the fact that scrambling changes quantifier scope interpretation, as shown in (180), based on Aoun and Li (1993: 204) and Abe (2004: 57) (cf. Kural (1997: 504)):

(179) Scope assignment rule
QP_1 (quantifier phrase) may take scope over QP_2 only if
a. QP_1 c-commands QP_2 or
b. QP_1 c-commands the element co-indexed with QP_2. [127]

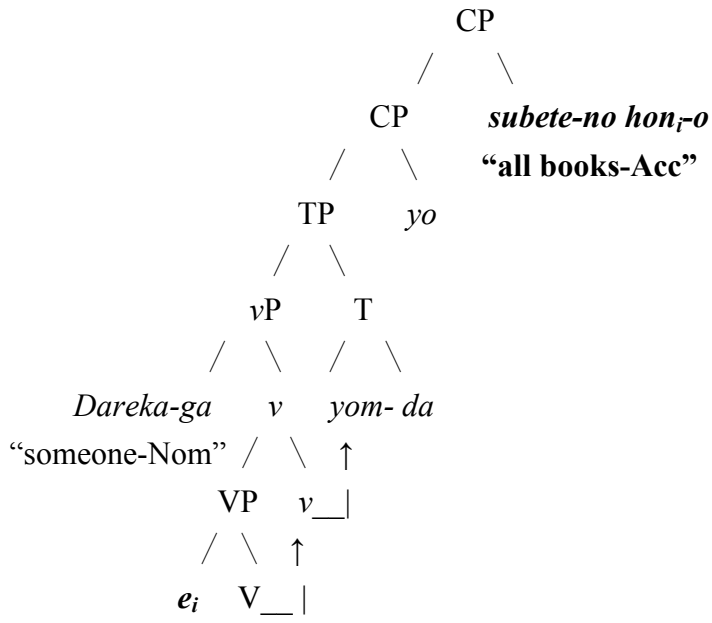
[126] *X* >> *Y* indicates that *X* takes scope over *Y*.
[127] The element co-indexed with QP_2 may or may not be the trace of QP_2 (cf. Aoun and Li (1993); Abe (2004)).

(180) **Subete-no-hon$_i$-o** dareka-ga t_i yom-da.
all **book-Acc** someone-Nom read
someone >> all, all >> someone

In (180), the object is scrambled leftward to the initial position of the clause, and a scope ambiguity emerges. This ambiguity can be explained by the scope assignment rule in (179): *subete-no hon* ("all books") c-commands *dareka* ("someone"), and hence the former takes scope over the latter in accordance with (179a); *dareka* ("someone") c-commands the element co-indexed with *subete-no hon* ("all books") (i.e., the trace of *subete-no hon*), and *dareka* can hence take wide scope in accordance with (179b). Furthermore, the absence of ambiguity in (177) also comes from the rule in (179). In (177), *dareka* ("someone") c-commands *subete-no hon* ("all books"), whereas *subete-no hon* ("all books") cannot c-command *dareka*. Thus, *dareka* takes scope over *subete-no hon*, but not vice versa.

With this in mind, let us return to the example in (178a), assuming that the structure for (178a) is (178a'):

(178a')

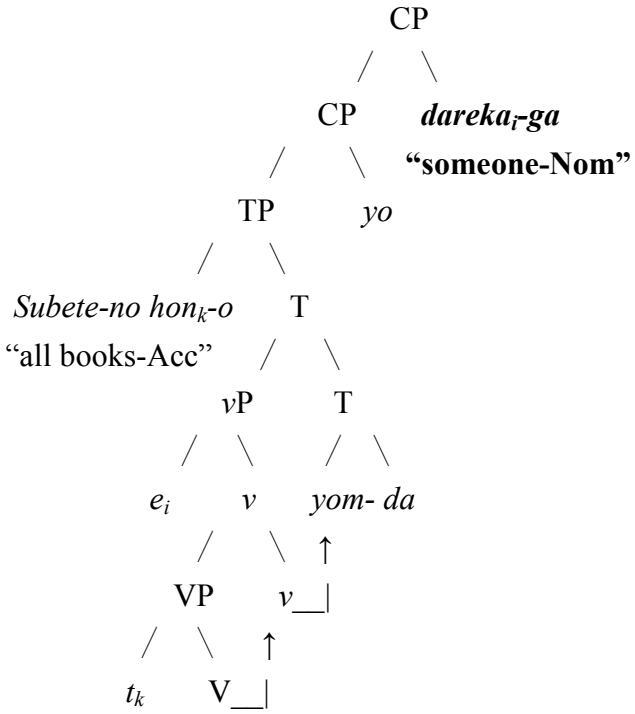


As the above structure shows, *subete-no hon*-o ("all books-Acc") c-commands a null argument *e* and they are non-distinct in terms of Case features. Hence, *subete-no hon-o* can be associated with the null argument, and is licensed. Since they are referentially non-distinct, *subete-no hon-o* can be construed as an argument sharing properties with the null argument. Thus, if *subete-no hon* has an index, the null

argument also has the same index via property-sharing (i.e., it is construed as a bound variable). In accordance with (179), *subete-no hon* takes scope over *dareka* ("someone") because the former c-commands the latter, and *dareka* takes scope over *subete-no hon* because *dareka* c-commands the null argument which has the same index as *subete-no hon*. Thus, (178a) is scopally ambiguous.

Now, let us consider the preferred reading of a scope ambiguity in (178b) in terms of parsing strategies. In (178b), nothing would prohibit the object *subete-no hon-o* ("all books-Acc'') from being analysed as a scrambled element by the parser unless syntactic principles are violated. Thus, a final parse tree for (178b) would be (178b') (see footnote 108):

(178b')

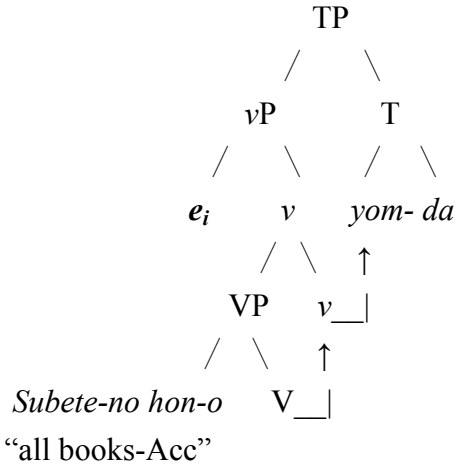


It is true that the parse tree in (178b') is compatible with the previous studies which claim that examples like (178b) are scopally ambiguous (e.g., Abe (2004); Watanuki (2006)). As mentioned above, however, in (178b) *dareka* ("someone") preferentially takes scope over *subeteno-hon* ("all books"). That is, *subeteno-hon* is difficult to interpret as taking wide scope, compared with *dareka*.

I propose that the preferred reading of a scope ambiguity in (178b) follows from ''economy'' of representation. In (178b), when the verb *yom-da* ("read") is encountered, the null subject *e* and the quantified object *subete-no hon-o* ("all books-Acc") are integrated, yielding a parse tree like (181a), where both the null subject and the object have theta-roles assigned and their Case features checked: the

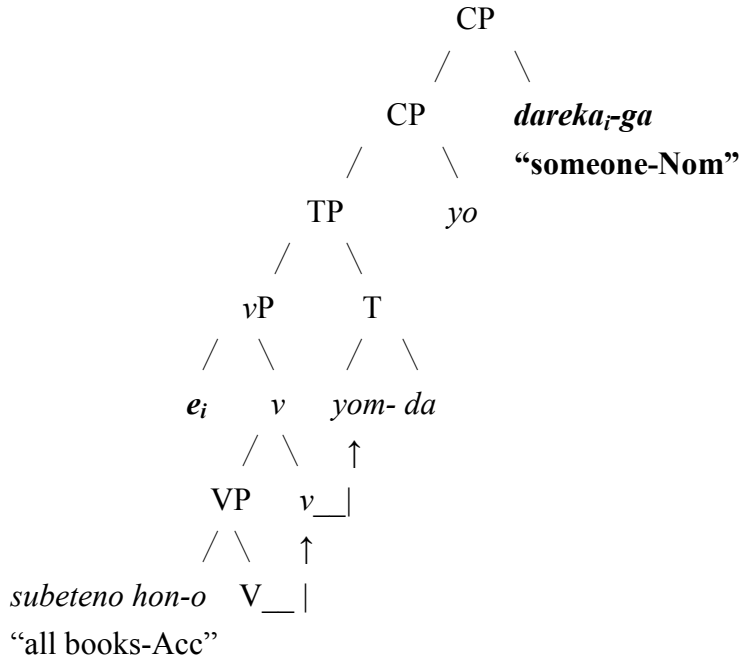
possibility of the object being analysed as a scrambled element by the parser is excluded by the assumption that more complex trees put a greater load on working memory than the tree in (181a) (‘‘economy’’ of representation).

(181) a.



On encountering the postverbal element *dareka-ga* (“someone-Nom”), it is attached to the CP. The final parse tree is (181b):

(181) b.



In the above structure, *dareka-ga* (‘‘someone-Nom’’) c-commands the object *subetano hon-o* (‘‘all books-Acc’’), but *subetano hon-o* c-commands nothing co-indexed with the postverbal element. Thus, it is predicted that (178b) is scopally unambiguous. However, if *subeteno hon-o* is reattached to the specifier position of

TP, the parse tree will be like (178b'). This reattachment is costly because the final attachment site (i.e., the specifier of TP) is not contained in the phase *v*P which contains the original attachment site (i.e., the sister of the verb) (see the Unconscious Reanalysis Condition in (152)). That is, the reading that *subeteno-hon* ("all books") takes wide scope emerges only consciously, although a scope ambiguity is permitted/generated by the grammar if there is an appropriate feature. Thus, in (178b), *dareka* ("someone") preferentially takes scope over *subeteno-hon* ("all books").

It may be interesting to note that the preferred reading of a scope ambiguity in (178b) disappears when there are elements between an object and a matrix predicate as shown in (182):

(182) Subete-no-hon$_j$-o kyonen e_i t_j yom-da yo, **dareka$_i$-ga**.
all book-Acc last year read FP, **someone-Nom**
"*He$_i$* read all books last year, **someone$_i$**."
someone >> all, all >>someone

Suppose that adverbs like *kyonen* (''last year'') are adjoined to *v*P. Then, in (182), when the verb *yom-da* (''read'') is encountered, the object *subeta-no hon-o* (''all books-Acc'') is identified as a scrambled element, and attached to the specifier position of TP, thereby c-commanding a null subject, which may be co-indexed with the postverbal element *dareka-ga* (''someone-Nom''). Unlike the case of (178b), .*subeteno-hon* can thus take scope over *dareka* without costly syntactic reanalysis, resulting in the absence of the preferred reading of a scope ambiguity.

4.5.3.6 Other consequences

Tanaka (2001: 556-557) observes that some JPVCs display locality effects whether nor not they contain overt preverbal NPs as shown in (183):

(183) a. *? John-ga [$_{NP}$[$_{CP}$ Mary-ga e_i nagut-ta toiu uwasa]]-o sinziteiru yo**,**
John-Nom Mary-Nom hit that rumour Acc believe FP
Bill$_i$-o
Bill-Acc
"John believes the rumour that Mary hit *him$_i$*, **Bill$_i$**"

b. *? John-ga [$_{NP}$[$_{CP}$ Mary-ga *Bill$_i$-o* nagut-ta toiu uwasa]]-o sinziteiru yo,
John-Nom Mary-Nom Bill-Acc hit that rumour Acc believe FP
Bill-o$_i$
Bill-Acc
"John believes the rumour that Mary hit Bill, **Bill**"
Adapted from (Tanaka (2001: 555, 556))

The example in (183a) involves a null argument *e* within the complex NP [*Mary-ga e nagut-ta toiu uwasa*]-*o* (''[the rumour that Mary hit him]-Acc'') which has accusative Case. The accusative Case marked postverbal NP *Bill-o* (''Bill-Acc'') c-commands the null argument and they are non-distinct in terms of Case features. *Bill-o* is thus expected to be associated with the null argument. According to the UREC in (153), however, the complex NP contains the null argument and they are non-distinct with categorial features and Case features, and hence the complex NP has priority over the null argument for association with *Bill*, resulting in the unacceptability.

In (183b), the complex NP [*Mary-ga Bill-o nagut-ta toiu uwasa*]-*o* (''[the rumour that Mary hit Bill]-Acc'') contains an overt preverbal NP which is identical with the accusative Case marked postverbal NP *Bill-o* (''Bill-Acc''). Since the postverbal NP c-commands the overt preverbal NP and they are non-distinct in terms of Case features, the postverbal NP is expected to be associated with the preverbal NP. However, the preverbal NP is contained in the complex NP, which blocks the postverbal NP from being associated with the preverbal NP. Hence, the locality effect is derived in the same way as in (183b). My proposed analysis can therefore account for the parallelism between (183a) and (183b) with respect to locality effects.

Now, let us turn to the case where postverbal elements are adjoined to embedded clauses via External Merge (see footnote 90).

(184) a. *? [Taro-ga *e$_i$* sika-ta] to **musuko$_i$ -o** omot-ta
(I) Taro-Nom scolded Comp **(his) son-Acc** thought
"I thought that Taro scolded **his son**?".
b. *?[$_{CP}$John-ga Mary-ni *e*$_i$ watasita koto] -ga **ano hon$_i$-o** husigida
John-Nom Mary-Dat handed Comp -Nom **that book-Acc** surprising
"That John handed **that book** to Mary is surprising."

In (184a), *musuko-o* (''son-Acc'') c-commands a null argument within the embedded clause [*Taro-ga e sika-ta to*] (''that Taro scolded *e*'') and they are non-distinct in

terms of Case features. *Musuko-o* can hence be associated with the null argument, thereby being licensed. Then, *musuko-o* can be construed as an argument sharing properties with the null argument. However, (184a) is unacceptable. Likewise in (184b), *ano hon-o* (that book-Acc'') is licensed and can be construed as an argument, but the example is unacceptable. Yet, the parsing strategies adopted in the present section can account for the unacceptability of (184).

In (184a), when *to* ("Comp") is encountered, the clause [*Taro-ga e sika-ta to*] is reanalysed as an embedded clause, and kept in store until a theta-role assigner is encountered. As soon as *musuko-o* (''son-Acc'') is reached, it is identified as an argument and left stranded. On encountering the matrix verb *omot-ta* ("thought"), the parser postulates a null matrix subject. At this stage of derivation, there are three arguments unassigned theta-roles. Although the matrix verb may assign an external theta-role to the null subject, it fails to assign internal theta-roles to both the sentential subject and *musuko-o* because it is a mono-transitive verb. Hence, the theta criterion is not maximally satisfied, resulting in the unacceptability of (184a).

The example in (184b) can be accounted for in the same manner as in (184a). When *koto* (''Comp'') is reached, the clause [*John-ga Mary-ni* e_1 *watasita koto*] (''that John handed *e* to Mary'') is reanalysed as an embedded clause and kept in strore. When *ano hon-o* (''that book-Acc'') is encountered, it is identified as an argument which is not assigned a theta role, and kept in store. On encountering the matrix predicate *husigida* (''surprising''), the parser attempts to assign theta-roles to the two stranded argument (i.e., the sentential subject and *ano hon-o*). However, since the matrix predicate is not a transitve verb, it fails to assign a theta-role to *ano hon-o*, violating the theta criterion. Thus, (184b) is unacceptable.

4.5.4 The Right Association Principle

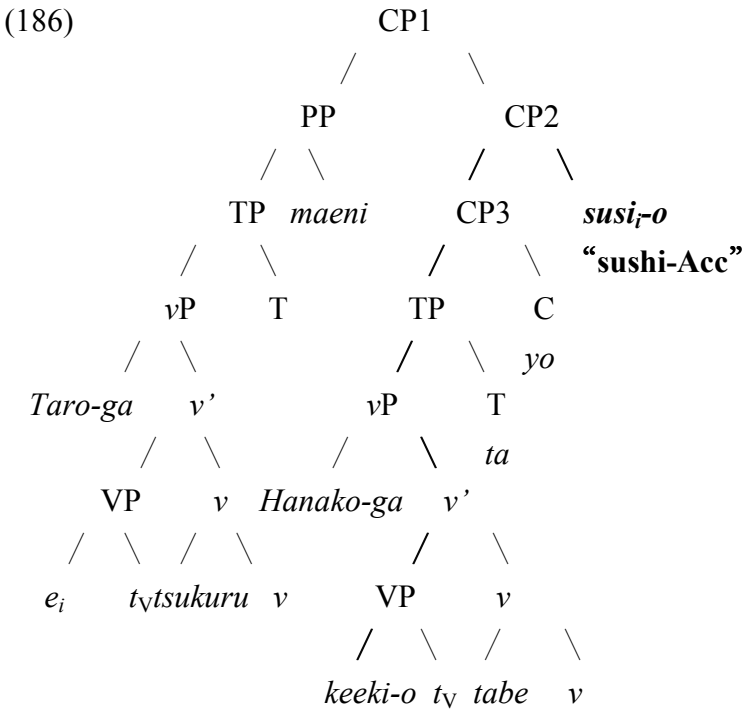
Let us first observe the example in (185), where a main clause follows an adverbial clause containing a null argument: [128]

(185) *?[$_{CP}$ Taro-ga e_i tsukuru maeni] Hanako-ga keeki-o tabe-ta yo, **susi$_i$-o**
Taro-Nom made before Hanako-Nom cake-Acc ate FP **sushi-Acc**
''Before Taro made it_i, Hanako ate the cake, **sushi$_i$.**''

[128] This section is based on Endo (1989: 176-178), who points out that examples like those discussed in the present section can support *the right association principle*, although it is unclear what kind of human parser Endo adopts.

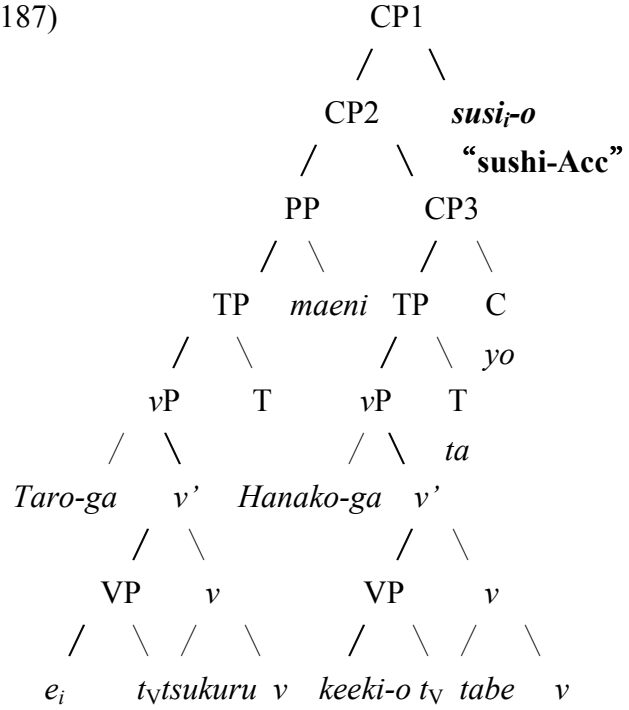
Assume that (185) is assigned a structure like (186):

(186)



In the above structure, the adverbial clause [*Taro-ga* e_i *tsukuru maeni*] (‘‘Before Taro made it_i’’) is adjoined to CP2, and the postverbal element *susi-o* (‘‘sushi-Acc’’) is adjoined to CP3, which is lower than CP2. As a result, the postverbal element does not c-command a null argument inside the adverbial clause. Hence, the postverbal element cannot be associated with the null argument, resulting in the unacceptability. This is a desirable result. However, my proposed analysis also allows (185) to have a structure like (187), because nothing prevents *susi-o* from adjoining to any phrase unless syntactic principles are violated:

(187)



In (187), the postverbal element *susi-o* (''sushi-Acc'') is adjoined to CP2, thereby c-commanding a null argument within the adverbial clause [*Taro-ga* e_i *tsukuru maeni*] (''before Taro made it_i'') which is adjoined to CP3. Nothing similar to *susi-o* is closer to *susi-o* than the null argument is, in the sense of the UREC, and hence *susi-o* would be associated with the null argument, and licensed. The interpretive rules would allow *susi-o* to be construed as an argument sharing properties with the null argument. This, however, is contrary to fact. This suggests that it is necessary to put forward a parsing strategy for excluding a structure like (187).[129]

Kimball (1973) proposes the *right association principle* as given in (188), with slight modification:

(188) Right Association (RA): Terminal symbols optimally associate to the lowest nonterminal node.

(Kimball (1973: 24))

For example, the RA can account for the fact that the example in (189) prefers to have a reading in (189'a) rather than (189'b):

[129] If the adverbial clause is adjoined to TP or *v*P, *keeki-o* (''cake-Acc'') is closer to the postverbal NP *susi-o* (''sushi-Acc'') than the relevant null argument is. Thus, *keeki-o* has priority over the null argument for association with *susi-o*, resulting in the unacceptability of (185).

(189) Joe figured that Susan wanted to take the train to New York out.

(Kimball (1973: 24))

(189') a. Joe figured that Susan wanted to [$_{vP1}$ take the train to New York out].

b. Joe [$_{vP2}$ figured that Susan wanted to take the train to New York] out.

In (189'a), the particle *out* is associated with vP_1 [$_{vP1}$ *take the train to NY*], and in (189'b), on the other hand, *out* is connected with vP_2. The RA requires *out* to be linked to the lowest node vP_1. [130] Hence, the preferable interpretation in (189) is that *take the train to New York out* forms a constituent. [131]

Kimball (1973: 24) mentions that the RA is designed partly to account for the fact that right-branching structures are perceptually less complex than left-branching structures or centre embedded structures. Thus, at first sight, it seems that the RA is not active in SOV languages such as Japanese. However, there is evidence that the RA is applicable to the JPVC.

Let us now return to the example in (185), reproduced in (190) for ease of reference:

(190) *?[$_{PP}$ Taro-ga e_i tsukuru maeni] Hanako-ga keeki-o tabe-ta yo, **susi$_i$-o**

Taro-Nom made before Hanako-Nom cake-Acc ate FP **sushi-Acc**

''Before Taro made *it$_i$*, Hanako ate the cake, **sushi$_i$.**''

---

[130] The reason that the particle *out* is not associated with the ''real'' lowest node [$_{NP}$ New York] may be that even if it is associated with the NP, this combination of the NP and *out* is not permitted in English. Thus, I assume tentatively that the lowest node to which an element must attach should be construed as the lowest among the nodes to which the element attaches to get a permissible combination of items in a relevant language.

[131] The structure in (189'b) as well as in (i) might be excluded by "Internal S Constraint" (Ross (1986); Kuno (1973b); Grosu and Thompson (1977)):

(i) ??Archimedes proved that the earth is round conclusively.
(cf. Archimedes proved that proposition conclusively.)

(McCawley (1998: 326))

Alternatively, it might be attributable to Case Resistance Principle (CRP) (see Stowell (1981)). However, even when *that*-clause appears in non-Case position, the sentence is unacceptable :

(ii) *It seems [that John is honest] to be clear.

(Sohn (1998: 421))

Furthermore, there is a counterexample to both Internal S Constraint and the CRP:

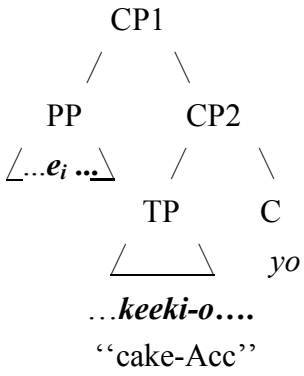
(iii) He considered [that Mary left] to be a tragedy.

(Pesetsky and Torrego (2004: 532n27))

At this point, I have no specific proposals, except for suggesting that the effect of the Internal S Constraint or the CRP should follow from parsing strategies like the RA (see footnote 24 in Chapter 5; cf. Sohn (1998)).

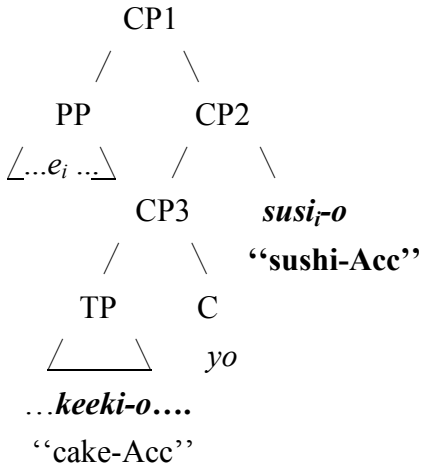
Suppose that a parse tree for (190) before the postverbal element is encountered is a structure like (191), ignoring the details irrelevant to the present discussion:

(190')

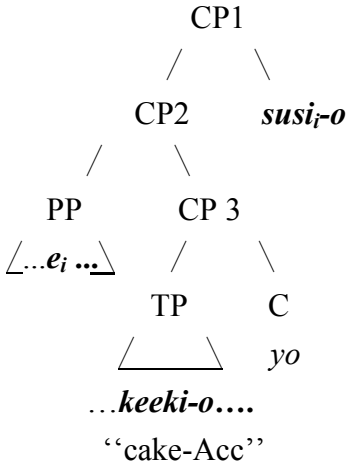


In (190'), the adverbial clause PP is adjoined to CP (see also footnote 129). When *susi-o* (‘‘sushi-Acc’’) is encountered, the RA requires *susi-o* to adjoin to CP2 rather than CP1, yielding a parse tree like (191a) rather than (191b):

(191) a.



b.



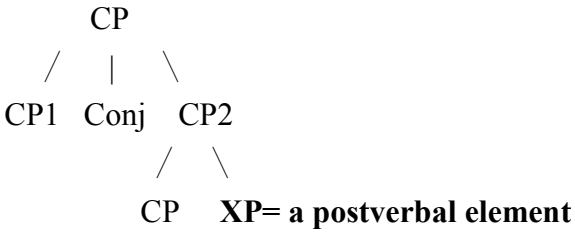
Since the structure in (191a) corresponds to the one in (186), the postverbal element fails to be associated with the null arugment in the adverbial clause. Thus, the RA can account for the unacceptability of (185).

As pointed out by Endo (1989: 177-178), the RA also applies to coordinate sentences like (192):

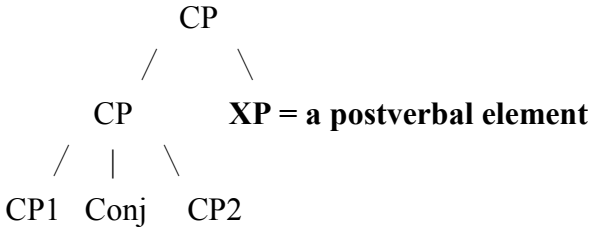
(192) a. Taro-ga susi-o tabe sosite Hanako-ga e_i tsuku-ta, yo, **keeki$_i$-o**.
Taro-Nom sushi-Acc eat and Hanako-Nom made FP **cake-Acc**
‘‘Taro ate susi and Hanako made *it*$_i$, **cake$_i$**.
b. *Taro-ga e_i tabe sosite Hanako-ga keeki-o tsuku-ta yo, **susi$_i$-o**.
Taro-Nom eat and Hanako-Nom cake-Acc made FP, **sushi-Acc**
‘‘Taro ate *it*$_i$ and Hanako made cake, **sushi$_i$**.’’

Suppose that (192) may or may not have structures in (193) and (194), where Conj = conjunct:

(193)



(194)



The RA chooses (193) over (194) so that postverbal elements can adjoin to the lowest CP. Thus, the postverbal element *keeki-o* (‘‘cake-Acc’’) in (192a) c-commands a null argument in the second clause, and can be associated with the null argument, construed as an argument. Hence, (192a) is acceptable.

As for (192b), the postverbal element *susi-o* (‘‘sushi-Acc’’) is associated with *keeki-o* (‘‘cake-Acc’’) in the second clause. Although licensed, *susi-o* cannot be construed as an argument because *susi* and *keeki* are referentially different. Thus, the unacceptability of (192b) results.

Based on the arguments presented above, we can conclude that the RA should be employed by the parser.

4.5.5 Conclusion

In the present section, I have argued that the presence/absence of locality effects in the JPVC follow from the interaction of syntactic principles with the parsing strategies which I have proposed/adopted in this section. I have also argued that the proposed parsing strategies can deal with cases like the preferred reading of scopally ambiguous JPVCs. Finally, I have claimed that the parser should employ a parsing strategy proposed in Kimball (1973), namely the *right association principle*.

4.6 Linear distance effects

In this section, I will discuss the results of an experiment to test the effect of linear distance on the acceptability of JPVCs. I will examine whether there is a parsing strategy relating to linear distance. If such a parsing strategy exists, it will be predicted that linear distance will affect acceptability of JPVCs. The results of the experiment indicate that the acceptability of JPVCs decreases as the linear distance between postverbal elements and relevant gaps/modifiees is longer. I will show that the effect of linear distance observed in JPVCs may be accounted for in terms of a parsing strategy proposed in Hawkins (2004), who argues that the parser should minimise a processing domain.

4.6.1 Background

In the previous section, I have discussed the case where locality effects in the JPVC may follow from parsing strategies such as the UREC in (153) and the RA, rather than following from the violation of syntactic constraints such as the Complex NP Constraint. However, some locality effects in the JPVC cannot be explained by the parsing strategies I have adopted thus far, which are defined in terms which do not refer to linear distance.

Let us compare the following sentences:

(195) a. [$_{CP}$ [Dare-ka ga e_i aketa] no]-wa zizitu da yo, **kinko$_i$-o**
Someone-Nom opened that -Top fact Copula FP **safe-Acc**
"[That someone opened e_i] is a fact, **the safe$_i$**."

b. ?? [$_{CP}$ [Dare-ka ga e_i aketa] no]-wa zettai-ni ugokanu zizitu da
Someone-Nom opened that -Top absolutely undeniable fact Copula
yo, **kinko$_i$-o**
FP **safe-Acc**
"[That someone opened e_i] is absolutely an undeniable certain, **the safe$_i$**."
Adapted from (Endo (1989: 173-174))[132]

The contrast in acceptability between (195a) and (195b) cannot be accounted for by the parsing strategies which I have adopted thus far. In (195b), there are no interveners corresponding to β in the sense of the UREC. Hence, it is incorrectly predicted that the postverbal phrase in (195b) is as easy to associate with the relevant null argument as in (195a).

Based on the contrast between the examples in (195), Endo (1989: 173) proposes that "the shorter the syntactic distance (in terms of the number of nodes linearly that intervene) between the embedded clause and the end of the sentences, the easier it is to associate the postverbal element with that clause." In other words, there is a case where hierarchical distance does not have to do with parsing difficulty, but linear distance does.

Thus, in order to examine whether there is a further parsing strategy for dealing with the effect of linear distance, I have conducted an experiment designed as a test for the effect of the length of intervening elements on acceptability of the JPVC.

4.6.2 Experiment

Objective

The experiment was designed as a test for the effect of linear distance on acceptability of the JPVC in which there is an adjunct clause intervening between a postverbal phrase and its relevant gap/modifiee (i.e., to examine whether the JPVC becomes less acceptable as the linear distance between the relevant elements is longer).

Suppose that JPVCs may or may not contain adjunct clauses intervening between postverbal elements and relevant gaps/modifiees, and that the JPVCs are

[132] Endo (1989) provides the following acceptable example as well:

(i) ? [$_{CP}$ [Dare-ka ga e_i aketa] no]-wa ugokanu zizitu da yo, **kinko$_i$-o**
Someone-Nom opened that -Top undeniable fact Copula FP **safe-Acc**
"[That someone opened e_i] is an undeniable certain, **the safe$_i$**."

predicted to be acceptable by the parsing strategies I have adopted thus far. Then, the predictions will be as follows:

(196) a. If there is a parsing strategy relating to linear distance (i.e., defined in terms which refer to linear distance), JPVCs with intervening adjunct clauses will be less acceptable than those without.
b. If there are no parsing strategies relating to linear distance, JPVCs with intervening adjunct clauses will be as acceptable as those without.

Participants

Twenty-seven native speakers of Japanese participated in the experiment. All of them were students at Joochi University in Tokyo, Japan. Twenty-five of them were undergraduates enrolled in an introductory linguistics course, and the rest were postgraduates studying linguistics. All of them were not informed about the purpose of the experiment. The undergraduates were presented with the questionnaires in a class room at the university, all of which were collected after completion, and each postgraduate received the questionnaire created in Word format and was asked to return it to the experimenter via e-mail. No payment was made.

Material and design

One token set of eight conditions was used in the experiment, in 2x3x2 factorial design, as illustrated in Figure 1, where one of the three intersection factors, the postverbal element type, has three levels (subject, object and adjunct), the others have two levels each (short vs long distance between the matrix subject and matrix predicate; non-JPVCs vs JPVCs).

The eight experimental sentences that each participant read were combined with 24 filler sentences in a random order. A set of experimental sentences is shown in (197), with the intervening elements underlined. In all the conditions except non-PVC, the element (gap or modifiee) expected to be associated with the postverbal phrase appears in the sentential subject in which the predicate is transitive, and the matrix clause predicate is not transitive.

Intervening elements / Type		Fewer words (=Short Distance)	More words(=Long Distance)
Non-JPVC		(197a) [SUBJ OBJ VP] *koto-ga* VP	(197b) [SUBJ OBJ VP] *koto-ga* [Intervening CP] VP
Postverbal elements	SUBJECT	(197c) [**e** OBJ VP] *koto-ga* VP, **SUBJ**	(197d) [**e** OBJ VP] *koto-ga* [Intervening CP] VP, **SUBJ**
	OBJECT	(197e) [SUBJ **e** VP] *koto-ga* VP, **OBJ**	(197f) [SUBJ **e** VP] *koto-ga* [Intervening CP]VP, **OBJ**
	ADJUNCT	(197g) [SUB OBJ VP] *koto-ga* VP, **ADJ**	(197h) [SUB OBJ VP] *koto-ga* [Intervening CP] VP, **ADJ**

Figure 1

Short-NonPVC

(197) a. [Ano kateikyooshi-ga yasasii sankoosho-o kau koto]-ga hituyoo
That tutor-Nom easy study-aid book-Acc buy Comp -Nom necessary
dat-ta nodesu ka.
Copula-Past Emontion Q
"Was it necessary for that tutor to buy an easy-to-read study-aid book?"

Long-NonPVC

(197) b.[Ano kateikyoooshi-ga yasasii sankoosho-o kau koto]-ga
That tutor -Nom easy study-aid book-Acc buy Comp -Nom
Ichiro-no siken goukaku notameni-wa hituyoo dat-ta
Ichiro-Poss examination pass for -Top necessary Copula-Past
nodesu ka.
Emotion Q
"Was it necessary for that tutor to buy an easy-to-read study-aid book so that Ichiro could pass the examination?''

Short-SUBJ PVC

(197) c. [$\boldsymbol{e}_i$ yasasii sankoosho-o kau koto]-ga hituyoo dat-ta
easy study-aid book-Acc buy Comp -Nom necessary Copula-Past
nodesu ka, **ano kateikyooshi$_i$-ga**.
Emontion Q **that tutor -Nom**

Long-SUBJ PVC

(197) d. [e_i yasasii sankoosho-o kau koto] -ga Ichiro-no siken
easy study-aid book-Acc buy Comp -Nom Ichiro-Poss examination
goukaku notameni-wa hituyoo dat-ta nodesu ka,
pass for -Top necessary Copula-Past Emotion Q
ano kateikyooshi-ga
that tutor -Nom

Short-OBJ PVC

(197) e. [Ano kateikyooshi-ga e_i kau koto] -ga hituyoo dat-ta
That tutor -Nom buy Comp -Nom necessary Copula-Past
nodesu ka, **yasasii sankoosho-o**
Emontion Q **easy study-aid book-Acc**

Long-OBJ PVC

(197) f. [Ano kateikyooshi-ga e_i kau koto] -ga Ichiro-no siken goukaku
That tutor -Nom buy Comp -Nom Ichiro-Poss examination pass
notameni-wa hituyoo dat-ta nodesu ka, **yasasii sankoosho-o**
for -Top necessary Copula-Past Emotion Q **easy study-aid book-Acc**

Short-ADJ PVC

(197) g. [Ano kateikyooshi-ga sankoosho-o kau koto] -ga hituyoo
That tutor -Nom study-aid book-Acc buy Comp -Nom necessary
dat-ta nodesu ka, **yasasii.**
Copula-Past Emontion Q **easy**

Long-ADJ PVC

(197) h. [Ano kateikyooshi-ga sankoosho-o kau koto]-ga Ichiro-no
That tutor -Nom study-aid book-Acc buy Comp -Nom Ichiro-Poss
siken goukaku notameni-wa hituyoo dat-ta nodesu ka,
examination pass for -Top necessary Copula-Past Emotion Q
yasasii.
easy

Procedure:

The experiment was conducted on a paper basis. The data were elicited using magnitude estimation (ME) (see below). The ME procedure requires the participants to report their judgements based on the range of variations that they like to use. The value must be, by definition, greater than zero; otherwise it would be impossible to log-transform the result. Three participants gave zero to some sentences. Thus, the data used here came from 24 participants.

Magnitude Estimation:

Magnitude estimation (ME) is a method which was developed by psychophysicists to measure judgements of sensory stimuli (Keller 2003: 652). It has recently been used in linguistic areas to elicit linguistic judgements in the same manner as in the field of psychophysics (e.g., Bard, Robertoson, and Sorace (1996); Cowart (1997); Featherston (2005)). In ME, participants are asked to express their intuitions by assigning a numeric value to each stimulus. The number which the participant chooses may be any real number or fraction as long as it is positive. Suppose that you are presented with two sentences. Then, the first is the reference sentence. You can assign an arbitrary number to the reference sentence. If you think that the second sentence is three times more acceptable than the reference (i.e., the first sentence), you would assign a value three times the value of the reference to the second sentence. If you think that the second is half as acceptable as the reference, you would assign a value half the value of the reference to the second (Sprouse (2007: 16)). That is, participants provide comparative judgements.

Results:

Each data was first divided by the score of the reference sentence and then the normalised data were log-transformed. Paired t-tests were carried out on each sentence type to test the prediction that there is a distance effect on acceptability of JPVCs. The results of t-tests are summarised in table 3. Mean acceptability is graphed in figure 2 for the factors “Intervening elements” and “sentence types”

Type		Mean for each condition		Degrees of freedom (df)	t	p
		Short Distance	Long Distance			
Non-JPVC		0.010	0.087	23	-1.86	0.038(>0.01)
Postverbal elements	SUBJECT	-0.24	-0.46	23	2.82	0.0049(<0.01)
	OBJECT	-0.13	-0.58	23	5.39	0.0000090(<0.01)
	ADJUNCT	-0.58	-0.78	23	3.67	0.00060(<0.01)

Table 3: Results and paired t-tests for sentence type conditions

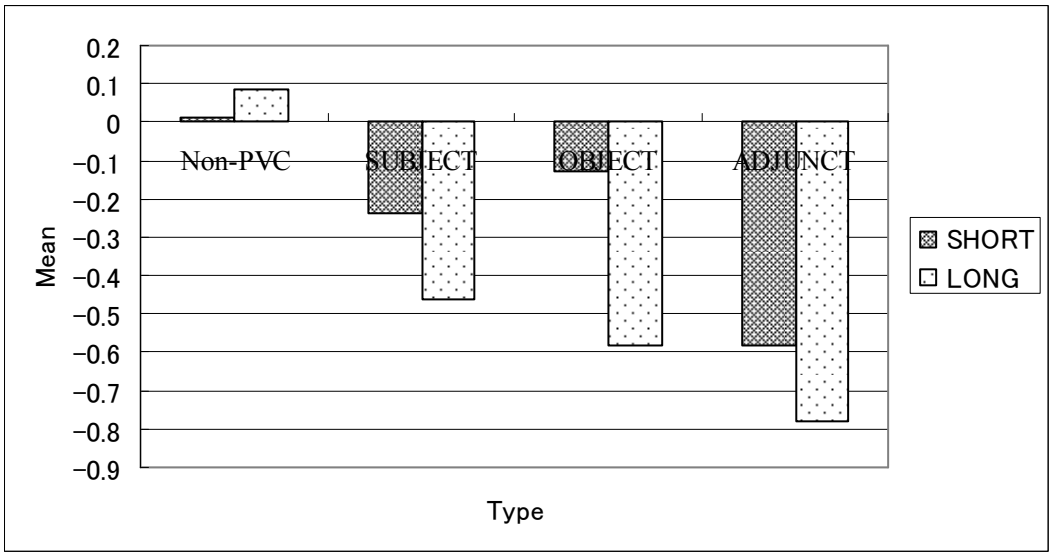


Figure 2: The effect of the intervening elements on acceptability

The analysis revealed that when more elements intervene between a postverbal phrase and a gap/modifiee, JPVCs are significantly less acceptable than when fewer elements intervene between the postverbal phrase and the gap/modifiee; the acceptability difference between short and long distance conditions was highly significant. By contrast, the result concerning non-JPVCs show that there is no significant difference in acceptability whether or not there are elements intervening between matrix sentential subjects and predicates.

Discussion

The finding of this experiment is that the JPVC displays the effect of linear distance if more elements intervene between a postverbal phrase and a gap/modifiee, whereas the non-JPVC does not show such an effect even if there are elements intervening between matrix subjects and predicates. Thus, it is necessary to put

forward a parsing strategy for dealing with the contrast between JPVCs and non-JPVCs with respect to the length effect. In what follows, I will attempt to provide a tentative explanation for this contrast within the framework of Hawkins (2004), who proposes a parsing principle called *Minimise Domain* as given in (198):[133]

(198) Minimise Domains:

> The human processor prefers to minimise the connected sequences of linguistic forms and their conventionally associated syntactic and semantic properties in which relations of combination and/or dependency are processed. The degree of this preference is proportional to the number of relations whose domains can be minimised in competing sequences or structures, and to the extent of the minimisation difference in each domain.
>
> (Hawkins (2004: 31))

"Combination" is defined as follows:

(199) Combination

> Two categories A and B are in a relation of combination iff they occur within the same syntactic mother phrase or maximal projection (phrasal combination), or if they occur within the same lexical cooccurrence frame (lexical combination).
>
> (Hawkins (2004: 18))

In *big car*, for example, *big* is in phrasal combination with *car* because both *big* and *car* are in the same NP, *ate* combines with *the cake* in the same VP, and the subject *the girl* combines with this VP within *v*P. According to Hawkins, these phrasal combinations are determined by general phrase structure rules. Subjects and objects are also in lexical combination with the verb, and they are listed alongside the verb in its lexical entry.

The definition of "dependency" is given in (200):

(200) Dependency

> Two categories A and B are in a relation of dependency iff the parsing of B requires access to A for the assignment of syntactic or semantic properties to B with respect to which B is zero-specified or ambiguously or polysemously specified.

[133] See footnote 28 in Chapter 3.

(Hawkins (2004: 22))

In *the boy$_1$ praised himself$_1$, the boy* (A) and *himself* (B) are in a relation of dependency because the parser needs to access *the boy* so that *himself*, which is zero-specified with respect to co-indexation, can be co-indexed with *the boy*. The subject *the boy* (B) in *the boy ran* depends on *ran* (A) in the sense that *the boy* is zero-specified with respect to its theta-role, and that the parser is required to access the verb to assign a theta-role to *the boy*. As Hawkins (2004) mentions, the verb *run* also depends on its subject and object (if any). Hawkins (2004: 20-21) remarks that ''*Run* is syntactically ambiguous in English between intransitive and transitive uses (*the boy ran*/*the boy ran the water*), and it is semantically ambiguous or polysemous between a whole range of interpretations depending on the choice of subject (*the water ran/the stocking ran/the advertisement ran*) or object (*the boy ran the race/ran the water/ran the advertisement*) (cf. Keenan 1979).'' Hence, the parser needs to access the NPs so that *run* can be assigned syntactic and semantic properties. Hawkins (2004) notes that as in the case of theta-role assignment, many relations between a given A and B are not only dependency but also combination relations, and hence, that he refers to these as ''combinatorial dependencies''.[134]

Hawkins (2004) gives a definition of the domain in which combinatorial and dependency relations are processed:

(201) A combinatorial or dependency domain consists of the smallest connected sequence of terminal elements and their associated syntactic and semantic properties that must be processed for the production and/or recognition of the combination or dependency relation in question.[135]

(Hawkins (2004: 23))

[134] It seems to me that all relations between a given A and B are combination relations, by the definition in (199), where both A and B are within the same maximal projections as long as they are within the same clause. However, this problem is irrelevant to the present discussion. I hence assume *combination* to be a necessary condition for *dependency* for the moment.

[135] With respect to the case of movement, besides (201), Hawkins (2004: 175) proposes a filler-gap domain (FGD):

(i) An FGD consists of the smallest set of terminal and non-terminal nodes dominated by the mother of a filler and on a connected path that must be accessed for gap identification and processing; for subcategorized gaps the path connects the filler to a co-indexed subcategorisor on which the gap depends for its processing; for non-subcategorised gaps the paths connects the filler to the head category that constructs the mother node containing the co-indexed gap; all constituency relations and co-occurrence requirements holding between these nodes belong in the description of the FGD.

In the sentence *he relied on them for support*, the domain sufficient for processing the VP and its three immediate constituents (V, PP_1, PP_2) is ***relied on them for***.[136] The domain sufficient for processing the lexical meaning of the verb in the above sentence is ***relied on them*** and (in an appropriate context) ***relied on***. In the sentence *the man$_1$ believed himself$_1$ to be honest*, the dependency domain for co-indexation is ***the man$_1$ believed himself$_1$***, which consists of only the set of connected words and their associated properties (i.e., indices), because the parser does not have to access the other words (i.e., *to be honest*), which are irrelevant to co-indexation. Likewise in the sentence *the girl ate the cake yesterday*, the domain for theta-role assignment to the subject NP is ***the girl ate the cake***, which involves only the set of connected words and their associated properties (i.e., theta-role assignment).

As Hawkins (2004: 32) puts it, the Minimise Domain (MiD) in (158) ''defines a preference for the most minimal surface structure domains sufficient for the processing of each combinatorial and dependency relation.'' That is, the intuition behind the MiD is that the size of the processing domain for combinatorial or dependency relations should be as small as possible such that simultaneous processing of additional phonological, syntactic and semantic properties can be reduced within that domain, decreasing working memory load (Just & Carpenter (1992)).

Now, let us turn to the effect of linear distance in the JPVC. I will consider the experimental sentences which show length effects. For expository purposes, I will compare (197b) (i.e., non-JPVC) with (197f) (i.e., Long-OBJ JPVC), reproduced in (202) and (203), respectively:

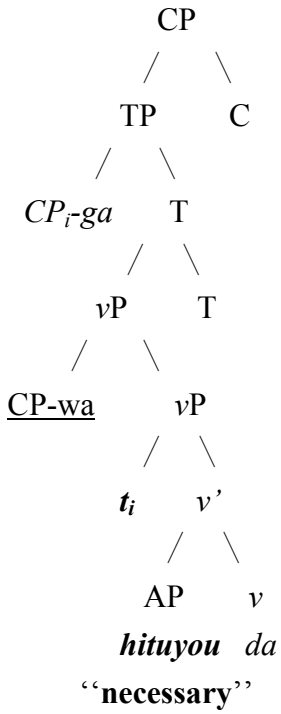
(202) [Ano kateikyoooshi-ga yasasii sankoosho-o kau koto]-ga
That tutor -Nom easy study-aid book-Acc buy Comp -Nom
Ichiro-no siken goukaku notameni-wa hituyoo dat-ta
Ichiro-Poss examination pass for -Top necessary Copula-Past
nodesu ka.
Emotion Q
"Was it necessary for that tutor to buy an easy-to-read study-aid book so that Ichiro could pass the examination?''

[136] I follow Hawkins in showing the relevant domain in bold.

(203) [Ano kateikyooshi-ga e_i kau koto]-ga Ichiro-no siken goukaku
That tutor -Nom buy Comp -Nom Ichiro-Poss examination pass
notameni-wa hituyoo dat-ta nodesu ka, **yasasii sankoosho-o**
for -Top necessary Copula-Past Emotion Q **easy study-aid book-Acc**
"Was it necessary for that tutor to buy **an easy-to-read study-aid book** so that Ichiro could pass the examination?

In (202), when the matrix copula is encountered, the matrix sentential subject [$_{CP}$ *ano kateikyoooshi-ga yasasii sankoosho-o kau koto*]-*ga* (''[for that tutor to buy an easy-to-read study-aid book]-Nom'') is analysed as a scrambled element, because an adjunct clause [$_{CP}$ *Ichiro-no siken goukaku notameni*]-*wa* (''[so that Ichiro could pass the examination]-Top'') should be considered to be adjoined to the matrix *v*P (at lowest), as schematically illustrated in (204):

(204)



On the assumption that a trace can be assigned a theta-role, the most minimal domain sufficient for assigning a theta-role to the matrix subject is **[*t hituyou*]** (''*t* necessary''), which does not involve the adjunct clause *CP-wa*.[137] Thus, no length effect is found.

[137] I leave open the problem of the domain for connecting a subject with its trace (see footnote 135).

Now, let us turn to (203), supposing that the relation between a postverbal phrase and its relevant element (i.e., a licenser) is a dependency one in (200). Then, in (203), the minimal domain for licensing the postverbal phrase is **[*e kau koto*]$_i$-*ga*** **[$_{CP}$ *Ichiro-no siken goukaku notameni*]-*wa* t_i *hituyoo dat-ta nodesu ka, yasasii sankoosho-o*** (''was it necessary to buy an easy-to-read study-aid book so that Ichiro could pass the examination''). The domain contains an adjunct clause because the relevant null argument precedes the adjunct clause unlike the case of (202). If there is an alternative sentence available like (205), where the adjunct clause precedes the null argument, (205) would be chosen over (203):

(205) Ichiro-no siken goukaku notameni-wa [Ano kateikyooshi-ga e_i kau
Ichiro-Poss examination pass for -Top that tutor -Nom buy
koto]-ga hituyoo dat-ta nodesu ka, **yasasii sankoosho-o**
Comp -Nom necessary Copula-Past Emotion Q **easy study-aid book-Acc**
"Was it necessary for that tutor to buy **an easy-to-read study-aid book** so
that Ichiro could pass the examination?

In (205), the minimal domain for licensing the postverbal phrase is **[*e kau koto*]$_i$-*ga* t_i** ***hituyoo dat-ta nodesu ka, yasasii sankoosho-o*** (''was it necessary to buy an easy-to-read study-aid book''), which does not involve the adjunct clause under discussion. The minimal domain in (205) is more minimal than that in (203). Hence, (203) would be excluded because the domain in question is not the most minimal. If the present account is on the right track, the length effect in (203) would follow from the MiD. The same argument holds true of both (197d) and (197h).

It therefore seems that the MiD is one of promising parsing strategies for dealing with the effect of linear distance.[138]

Finally, it should be noted that even if there is a parsing strategy which is defined in terms which refer to linear distance, we still need parsing strategies defined in terms which do not refer to linear distance. This claim is supported by many examples. In both (157) and (158), for instance, embedded null subjects are c-commanded by matrix null subjects, and the former are blocked from being associated with postverbal elements by the latter, but the former are closer to postverbal phrases in terms of linear distance than the latter (i.e., the matrix null subjects) are.[139]

[138] A similar proposal with respect to minimisation of dependency length is put forward by Gibson (1998, 2000).
[139] See (175) and Chapter 5 for further evidence.

4.6.3. Conclusion

In this section, the results of the experiment have shown that the JPVC displays the effect of linear distance if more elements intervene between a postverbal phrase and a gap/modifiee, whereas the non-JPVC does not show such an effect even if there are elements intervening between matrix subjects and predicates. I have attempted to provide a tentative explanation for the contrast between JPVCs and non-JPVCs with respect to the length effect by adopting a parsing principle proposed in Hawkins (2004), namely *Minimise Domain*.

4.7. Conclusion

In this chapter, I have discussed the JPVC. I have first presented a critical review of some of the previous accounts of the JPVC, and claimed that movement analyses are untenable. Then, I have proposed the licensing condition for postverbal elements, assuming that the derivation of the JPVC involves no movement. I have also argued that many syntactic properties of the JPVC can be derived from the interaction of syntactic principles with the parsing strategies. Finally, I have attempted to provide a tentative explanation for the contrast between JPVCs and non-JPVCs with respect to the length effect based on the results of the experiment on acceptability of the JPVC.

Chapter 5 A Cross-linguistic Perspective

In the first half of this chapter, I will mainly attempt to show how the locality effects observed in three types of rightward movement constructions in English can follow from the assumptions proposed in the previous chapter. First, I will argue that right-dislocated NPs should be licensed by the licensing condition which holds true for postverbal NPs in the JPVC. I will further claim that the effect of the Right Roof Constraint displayed by the Right Dislocation Construction can be accounted for in terms of the proposed parsing strategies. Then, I will show that the licensing condition is applicable to the Extraposition from NP Construction as well, and that locality effects shown in the Extraposition from NP Construction can also follow from the parsing strategies. After that, I will consider the Heavy NP Shift Construction, paying a special attention to locality from the point of view of language processing.

In the second half of the present chapter, I will propose that languages fall into three types with respect to the possibility of the Heavy NP Shift Construction, as one of the consequences drawn from the interaction of the syntactic principles with the parsing mechanisms.

5.1 English Rightward Movement Constructions

My main purpose in this section is to show how the assumptions holding true for the JPVC apply to three types of English Rightward Movement Constructions; Right Dislocation (5.1.1), Extraposition from NP (5.1.2) and Heavy NP Shift (5.1.3).

5.1.1 Right Dislocation Construction

The Right Dislocation Construction (RDC) is a construction where dislocated NPs, which appear in sentence-final position, refer to pronouns in argument positions, as observed in Chapter 2, a couple of examples reproduced in (1), with each pronoun in italics and the relevant dislocated NP in boldface:

(1) a. *He* is real smart, **John**.
b. I don't want *it* anymore, **that**.

The RDC does not obey movement constraints such as the Coordinate Structure Constraint (CSC) and the Left Branch Condition (LBC) (Ross (1986): the former states that ‘‘in a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct’’ (Ross (1986: 98-99), and the latter states that a material cannot be moved out of the specifier position of NP (footnote 15 in Chapter 4). Let us first consider the examples involving wh-movement which display the effects of such movement constraints, where *t* indicates a trace of a wh-word:

(2) a. *Which trombone$_i$ did the nurse polish t_i and the plumber computed my tax?
(Ross (1986: 98))

b.*Whose$_i$ did you steal [$_{NP}$ t_i money]?
(McCawley (1998: 526))

In (2a), only one conjunct *which trombone* is extracted out of a coordinate structure, and hence a violation of the CSC occurs. In (2b), *whose* is moved out of the specifier position of NP, thereby violating the LBC.

However, the same observation does not hold true for the RDC, as witnessed by acceptability of the examples in (3):

(3) a. I saw Mary and *him* downtown yesterday, **your friend from Keokuk**.
[=(115) in Ch.2]

b. I noticed *his* car in the driveway last night, **your friend from Keokuk**.
(Ross (1986: 260))

In (3a), the second conjunct (i.e., *him*) of the coordinate NPs can refer to the dislocated NP, and in (3b), the NP *his* on the left branch of NP (i.e., *his car*) may be linked with the dislocated NP. In other words, if each dislocated NP in (3) were extracted out of the site where the relevant pronoun appears, (3a-b) would violate the CSC and the LBC, respectively, and neither dislocated NP could hence be linked with the relevant pronoun, contrary to fact. Accordingly, the data in (3) suggest that the RDC should not be derived by movement; the dislocated NP is adjoined to the preceding element via External Merge.[1]

[1] Both NP and an auxiliary can be right-dislocated:

i) a. *He*’s amazing, **that man is**.
b. *He*’s jilted her, **Jack has**. (Brinton (2000:299) *The structure of modern English: A linguistic Introduction*)

Assuming that the RDC does not involve movement, the dislocated NP should be licensed by the Licensing Condition, reproduced in (4):

(4) The licensing condition for the postverbal element (LC)
(where X= any syntactic category):
A phrase α adjoined to XP is licensed only if α is associated with β such that
(i) α c-commands β, and
(ii) α is non-distinct from β in terms of Case features **(**and honorific features)

To see how the LC applies to the RDC in English, let us consider the following acceptable examples:

(5) a. *They* spoke to the janitor about that robbery yesterday, **the cops**.
b. The cops spoke to *him* about that robbery yesterday, **the janitor**.
c. The cops spoke to the janitor about *it* yesterday, **that robbery**.
(Ross (1986: 258))

Suppose that a dislocated NP is adjoined to CP via External Merge.[2] In (5), then, each dislocated NP can c-command the relevant pronoun. In (5a), given that NPs do not always have Case features, the dislocated NP *the cops* is non-distinct from *they* in terms of Case features.[3] *The cops* can thus be associated with *they*, and it is hence

---

The examples in (i) suggest that the RDC is derived by ellipsis (see Kayne (1994)). However, the case where dislocated NPs are associated with pronouns in positions other than subject (e.g., (1b) and (3b)) would pose a problem for an ellipsis approach. For discussion of analyses for the JPVC based on Kayne (1994), see Chapter 4, where I have shown that such analyses give rise to seriously empirical problems.

[2] It seems that nothing prevents a dislocated NP from being adjoined to its preceding element as long as adjunction structures may be formed by External Merge (see Chapters 3and 4). I will later discuss the position to which the dislocated NP is adjoined.

[3] If the right-dislocated NPs had Case features, uninterpretable Case features would remain unchecked, yielding a violation of the principle of Full Interpretation. This point is supported by the observation that fronted NPs can appear in nonargument positions without Case features being checked, as show in (ib) and (id):

(i) a. *I assured you John to be a nice guy.
b. John$_i$, I assure you t_i to be a nice guy.
(Rizzi (1990: 60))

c. *He alleged Melvin to be a pimp.
d. Who$_i$ did he allege t_i to be a pimp?
(Postal (1974: 304-305))

The above observation falls under the generalisation that overt NPs in peripheral positions do not have to have Case features. This generalisation may extend to the case where, as Endo (1996: 2) points out, postverbal NPs in Japanese lack Case markers when the NPs are specific:

licensed. However, the dislocated NP *the cops* is also allowed to be associated with *the janitor* or *that robbery*, either of which is non-distinct from *the cops* in terms of Case features. Yet, the possibility of *the cops* being interpreted as an argument of a preposition is excluded by the interpretive rules proposed in Chapter 4, repeated in (6):

(6) Interpretive rules about adjoined phrases (Provisional)
Suppose that α is adjoined to XP (where X= any syntactic category), then
(i) α is construed as an argument sharing properties with β, only if
a. α is an NP or a CP, and
b. α is non-distinct from β in terms of referentiality, and
c. β is in A(rgument)-position (i.e., subject, object).
(ii) α is construed as a potential modifier of β only if α is not construed as an argument.

According to (6i), neither *the janitor* nor *that robbery* can be construed as an argument sharing properties with *the cops* because both *the janitor* and *that robbery* contradict *the cops* with respect to referentiality. Similarly, in (5b), *the janitor* is licensed, but it can be associated not only with *him* but also with *the cops* and *that robbery*. Yet, the interpretive rules in (6i) make it impossible to construe *the janitor* as an argument of the other preposition or a subject. The same holds true for (5c). Each dislocated NP in (5) may therefore be appropriately linked with the relevant pronoun.

I will then turn to the examples in (3), reproduced in (7):

(7) a. I saw Mary and *him* downtown yesterday, **your friend from Keokuk**.
b. I noticed *his* car in the driveway last night, **your friend from Keokuk**.

In (7a), the dislocated NP is non-distinct from *him*. Assuming that the dislocated NP is adjoined to a root CP, *your friend from Keokuk* is associated with *him*, licensed by the LC in (4). The dislocated NP can also be associated with *Mary*, but if *your friend from Keokuk* and *Mary* are different in referentiality, the dislocated NP would not be construed as an argument sharing properties with *Mary*. Furthermore, although the

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(ii) Taro-ga e_i tabeta yo, **ano reino susi$_i$**.
Taro-Nom ate FP **that in question sushi**
''Taro ate it, **that sushi in question**.''

The example in (ii) indicates that a Case marker-*o* (''-Acc'') is morphologically unrealised because the postverbal NP does not have a Case feature (see (82) in Chapter 4).

dislocated NP may be licensed through being associated with the conjoined NP (i.e., *Mary and him*), it cannot be interpreted as an argument sharing with the conjoined NP because the dislocated NP refers to a single person, but the conjoined NP does not.

In (7b), *your friend from Keokuk* is non-distinct from the pronoun *his* in terms of Case features. As in (7a), the dislocated NP in question c-commands the pronoun *his*, and it may hence be associated with the pronoun, licensed by the LC. Note that although *your friend from Keokuk* can be associated with every element that precedes it, one can accept only the reading that the dislocated NP is construed as an antecedent of *his*, because other possibilities are excluded either by the interpretive rules in (6) or semantic deviance.

I will next consider unacceptable examples like (8):

(8) ?? *She*$_i$ spoke to *him*$_j$ about that robbery yesterday, **the teachers from China**$_{\mathbf{i+j}}$
(Hasegawa et al. (2000: 474))

The teachers from China can be licensed via the association with *she* or *him*, because the dislocated NP, which has no Case-features, is non-distinct from both pronouns (i.e., *she* and *him*) in terms of Case features. According to the interpretive rules, however, the dislocated NP cannot be construed as an argument sharing properties with *she* or *him*: if the dislocated NP attempted to be interpreted for example as an argument sharing properties with a subject, contradiction in referentiality would occur. Note that if the dislocated NP should share properties with the pair of pronouns, the NP would have different types of theta-roles simultaneously—an agent-role shared with *she* and a goal-role shared with *him*—and the NP would hence be impossible to link to both *she* and *him* together without semantic conflicts.

It may be worth noting, in passing, that the LC fails to exclude the case where non-referential NPs are dislocated, as shown in (86) in Chapter 2, reproduced in (9), with slight modification:

(9) a. *Gwendolyn would like to meet *one*, **a linguist**.
b. **He* knows what I'm taking about, **only John**.
c. *We caught *them* that day, **many clams**.
d. **They* would agree with that, **few linguists**.

In (9a), the dislocated NP has a generic interpretation, and in (9b-d), the dislocated NPs are quantifiers.

As mentioned in Chapter 4, Rizzi (1986) proposes that a pronoun cannot be locally A-bar bound by a quantified/non-referential NP on the basis of Italian data.[4] If this statement can apply universally, the pronouns in English cannot be bound by the non-referential NPs which appear in A-bar position.[5] Thus, the dislocated NPs in (9), which are non-referential, fail to have anaphoric relations with the relevant pronouns, although they are all licensed by the LC.[6]

5.1.1.1 The Right Roof Constraint effect in the English RDC

As observed in Chapter 2, the RDC shows the effect of the Right Roof Constraint (RRC) which hypothesises that an element cannot move rightward out of the clause in which it is contained (Ross (1986)):

(10) a. *? [That *they* spoke to the janitor about that robbery yesterday] is terrible, **the cops**.
b.*?[That the cops to the janitor about *it* yesterday] is terrible, **that robbery**.
(Ross (1986:258))

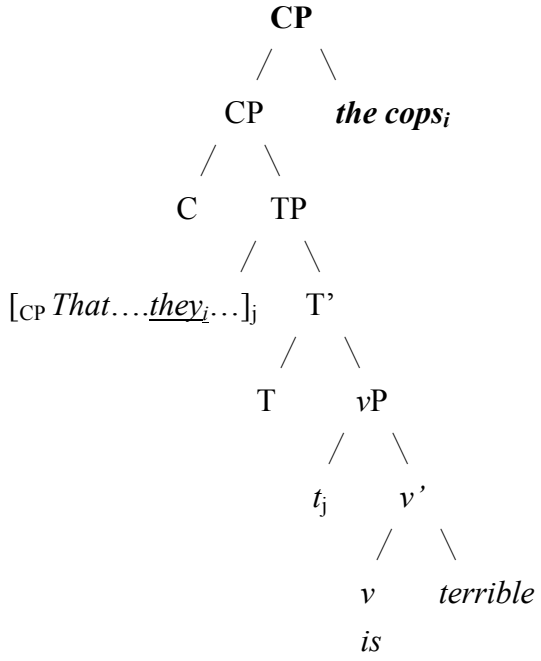
In (10a-b), the dislocated NPs occur outside the embedded clause in which the relevant pronouns appear. However, the LC in (4) fails to account for the effect of the RRC in the examples in (10a-b). Assuming that the dislocated NP is adjoined to a root CP, (11) will be a partial structure for (10a), with irrelevant details omitted.[7,8] In (11), the dislocated NP *the cops* c-commands *they*, and both are non-distinct in terms of Case features because *the cops* has no Case features (footnote 3). *The cops* can hence be associated with *they,* thereby being licensed. They do not contradict each other in terms of referentiality, and *the cops* can be construed as an argument sharing properties with *they*. The same is true for (10b). The LC cannot therefore cope with the effect of the RRC.

[4] See (63) in Chapter 4.
[5] In English, not only left dislocated non-referential NPs but also topicalised ones fail to bind the relevant elements (see also (67b) in Chapter 4.):

(i) *Everybody$_i$, I saw him$_i$ in the park yesterday.
(ii) *Everybody$_i$, I saw t_i in the park yesterday.

[6] Dislocated NPs appear in A-bar position.
[7] See footnote 9 in chapter 3.
[8] It is assumed that the copula is a light verb selecting verbal elements including adjectives.

(11)



In what follows, I will argue that the RRC effect in English RDC can follow from the independently motivated parsing strategies adopted in Chapter 4, reproduced below:

(12) Generalised Theta Attachment:
Every principle of the Syntax attempts to be maximally satisfied at every point during processing.

(13) Unconscious Reanalysis Condition:
It is possible for the human parser to make a syntactic reanalysis (i.e., reanalysis is low-cost), only if
(a) The original attachment site α contains the final attachment site β, as illustrated in (i):
(i) α
/...β... \
or
(b) β c-commands α, and every phase (i.e., *v*P, CP) containing α contains β, as shown in (ii), where order is irrelevant:
(ii) Phase (=*v*P or CP)
/ \
β ….
/...α...\

(14) Unconscious Reinterpretation Condition (UREC)[9]

It is impossible for the human parser to associate a syntactic object X with α, if there is β such that α is similar to β and β is closer to X than α is.

(15) Right Association (RA): Terminal symbols optimally associate to the lowest nonterminal node.

Before discussing how the RRC effect in the RDC follows from the above parsing strategies, I will consider how such strategies apply to a simple sentence like (16):

(16) *He* is real smart, *John*. [=(1a)]

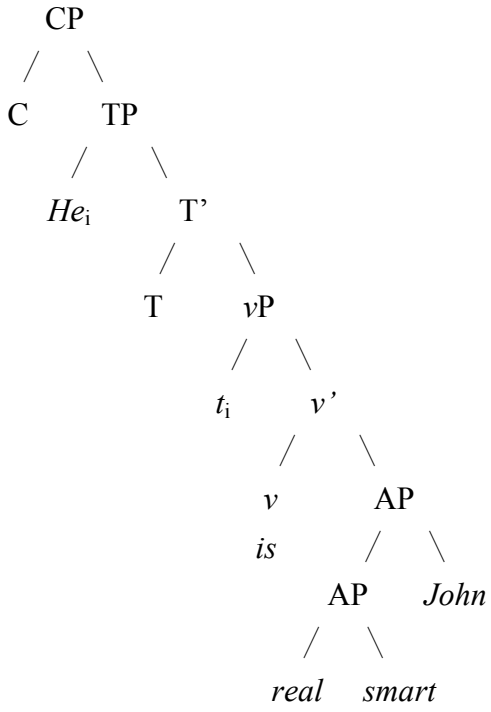
In (16), when encountering *John*, the parser realises that there are no following elements, and it then starts to associate *John* with relevant elements so that *John* can be licensed, at the same time as adjoining *John* to a preceding element. According to the RA in (15), *John* is required to adjoin to the lowest node, AP, as shown in (17):

[9] ''Similar'' and "Closer" are defined in (i) and (ii), respectively:

(i) α is similar to β iff
a. α, β and X are non-distinct in terms of categorial features (i.e., syntactic categories) and Case features (i.e., Nominative or Accusative), or
b. both α and β are potential modifiees of X.

(ii) Suppose that X c-commands α and β. Then, β is closer to X than α is iff
a. β contains α, or
b. β c-commands α unless every phase (i.e., *v*P, CP) containing α contains β, or
c. otherwise (i.e., if β neither contains nor c-commands α), a path between β and X is shorter than the one between α and X.

(17)



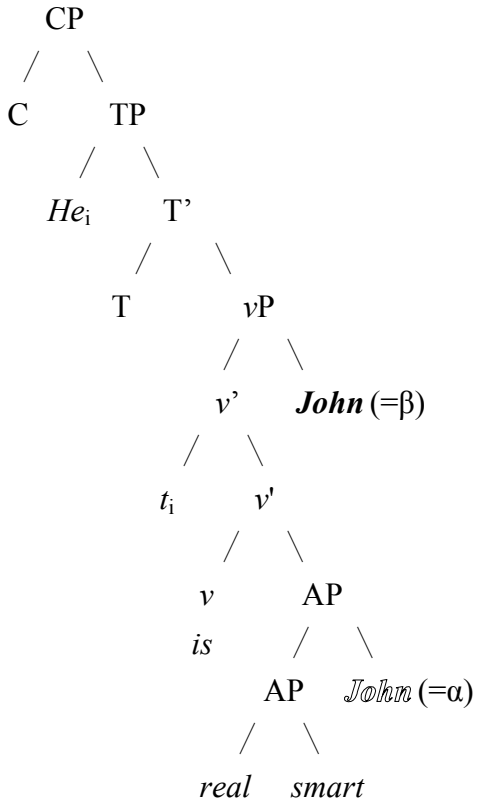
In (17), *John* c-commands AP (i.e., *real smart*) and they are non-distinct from each other with respect to Case features. *John* can thus be associated with *real smart*, thereby being licensed. However, the interpretation of *John* as modifying *real smart* is semantically deviant[10]. The parser will hence attempt to reattach *John* to *v*', as illustrated in (18), where the original attachment site of the dislocated NP is indicated by white letters:

[10] Some NPs can modify predicates:

(i) a. John left medical school **a doctor**.
b. Jill arrived at the party **a happy woman**.

(McNulty (1988: 167), Déchaine (1993: 145) cited in (Iki-uchi (2003: 157))

(18)



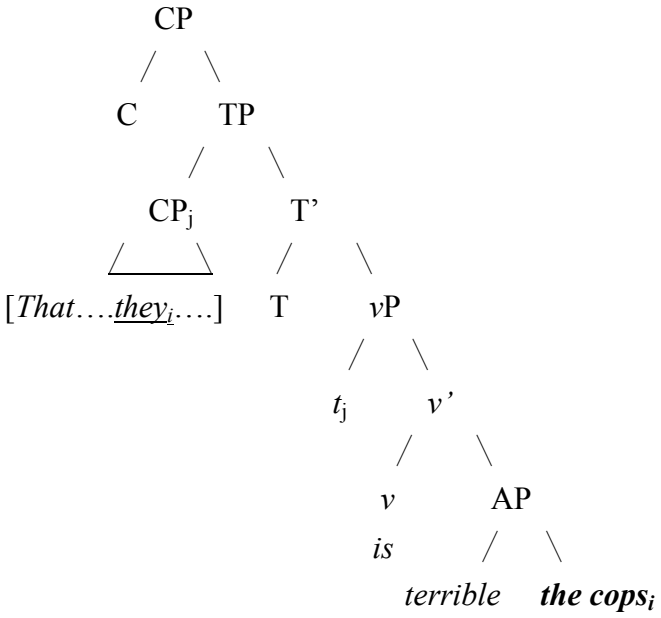
In (18) *John* (=β), which is adjoined to *v*', c-commands *John* (=α), and every phase (i.e., *v*P and CP) containing *John* (=α) contains *John* (=β). In accordance with the Unconscious Reanalysis Condition in (13), thus, the reattachment to *v*' is low-cost. That is, the parser can create the structure in (18). There *John* c-commands the trace of *he*, and hence it can be associated with the trace, being licensed. *John* is allowed to be construed as an argument sharing properties with the trace, resulting in the acceptability of (16).

Now, let us return to the example in (10a), reproduced in (19):

(19) *?[That *they* spoke to the janitor about that robbery yesterday] is terrible, **the cops**.

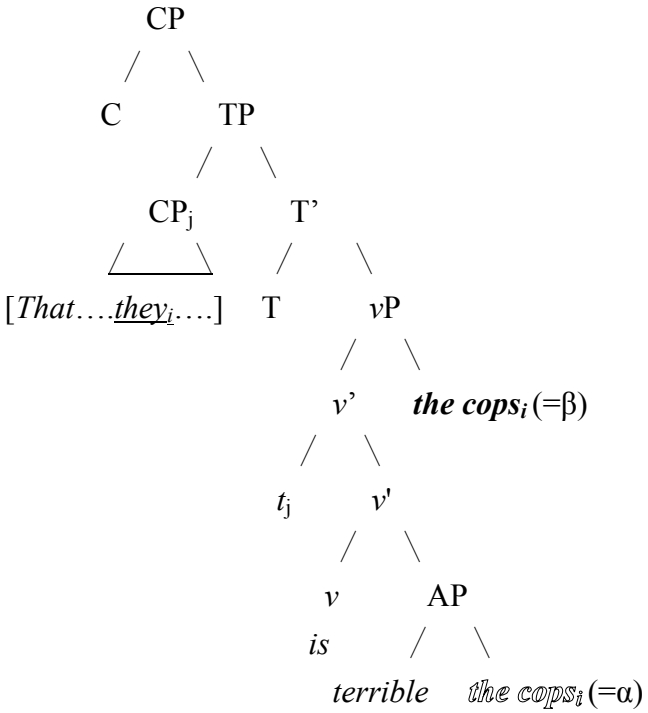
As in the case of (16), after encountering *the cops* in (19), the parser realises that there are no following elements, and then starts to associate the dislocated NP *the cops* with relevant elements so that the NP can be licensed, at the same time as adjoining the NP to a preceding element. The RA in (15) mandates that the dislocated NP should adjoin to the lowest node, AP, as shown in (20):

(20)



In (20), *the cops* c-commands *terrible* and they are non-distinct from each other in terms of Case features. *The cops* can thus be associated with *terrible*, and is licensed. However, *the cops* cannot be construed as modifying *terrible* because of semantic deviance. *The cops* would hence be reattached to *v*', as shown in (21):

(21)



In (21), the reattachment to *v*' is low-cost for the same reason as in (18). However, *the cops* still cannot c-command a pronoun inside the sentential subject [*they spoke*

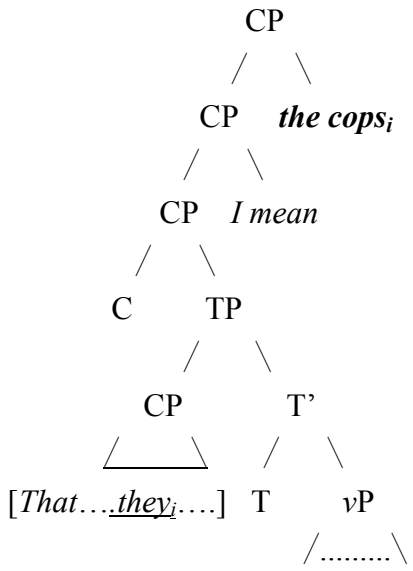
to the janitor about that robbery yesterday], and hence *the cops* is not associated with the pronoun *they*, thereby failing to be licensed. Thus, the RRC effect results. An alternative analysis would reattach *the cops* to the matrix TP or CP, where *the cops* could c-command *they*. However, this syntactic reanalysis would be high-cost; the final attachment site is not contained in the phase *v*P which contains the original attachment site (see (13b)). In (19), *the cops* is therefore difficult to associate with *they*.

The claim that the effect of the RRC is not a grammatical phenomena will be supported by the following acceptable example, the parse tree for which would be (23), with the details irrelevant to the present discussion ignored:

(22) [That *they* spoke to the janitor about that robbery yesterday] is terrible, I mean, **the cops**.[11]

(Whitman (2000: 450))

(23)



Suppose that when *I mean* is encountered, it should be adjoined to the main clause CP.[12] Then, the dislocated NP is adjoined to the main clause as illustrated in (23), where *the cops* c-commands the pronoun *they*. *The cops* can thus be associated with *they*, and is licensed. The interpretive rules allow *the cops* to be construed as an

[11] Whitman (2000: 450) points out that an example like (22) is observed by Tsubomoto.
[12] See footnote 130 in Chapter 4.

argument sharing properties with *they*, because they are referentially non-distinct. Hence, (22) is acceptable.[13]

It should be noted that a structure like (23) is reminiscent of the case where some postverbal elements in the JPVC can be associated with null arguments which are contained in complement clauses, displaying no locality effects.

Finally, let us consider cases where RDCs may or may not appear in embedded clauses:[14]

(24) [The girl who ate *it*, **the potato salad**], was rushed to the hospital.

(25) *Bill gave [the girl who ate *it*, **the potato salad**], a dollar.

As observed in Chapter 2, embedded clauses which contain dislocated NPs can appear in subject position, as shown in (24), but such clauses cannot appear in object position, as witnessed in (25).

In (24), when *the potato salad* is encountered, it is identified as an NP which has no theta-role assigned and no Case checked. At this point there is no theta-role assigner, and hence the NP is kept in store. On reaching *rushed*, the parser attaches *the potato salad* to a preceding element (i.e., [$_{VP}$ t_V *it*], where t_V = the trace of *ate*) according to the RA: otherwise, the complex NP (i.e., *the girl who ate it*) would not be assigned a theta-role. In order to license *the potato salad,* the LC attempts to apply. Within the structure[$_{VP}$[$_{VP}$ t_V *it*] ***the potato salad***], *the potato salad* c-commands the pronoun *it*, and it is hence associated with the pronoun, being licensed.[15] Then, the

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[13] When embedded clauses which contain pronouns appear in object position, the pronouns can be associated with dislocated NPs which occur outside the embedded clauses:

(i) a. I said *they* will leak the story to the press, **the cops,** two weeks ago.
b.??I said *they* will leak the story to the press two weeks ago, **the cops**.
(Whitman (2000: 458))
c. They announced that *he* would be hired yesterday, **that young professor from Yale**.
(Gundel (1974/1988: 134))

However, my proposed analysis incorrectly predicts that the dislocated NPs in (ib) and (ic) are as difficult to associate with the relevant pronouns as those in (10): the adverbs preceding dislocated NPs are required by the RA to adjoin to elements inside embedded clauses, and then they are reattached to matrix verbs via reanalysis, which requires conscious efforts. Yet, if one assumes that the RA is violable in cases like (ib,c), then the adverbs in question would be first attached to elements in matrix clauses and hence, dislocated NPs would also be attached to elements in the matrix clauses, thereby c-commanding relevant pronouns without reanalysis (see footnote 25; footnote 130 in Chapter 4).

[14] The examples have already been provided in Chapter 2.

[15] If *the potato salad* was attached to a complex NP [$_{NP}$ *The girl who ate it*], it would be prevented by the complex NP from being associated with the pronoun *it*. The reason is that the dislocated NP and the complex NP are non-distinct in termed of categorial and Case features, and that the complex NP contains the pronoun (see the UREC in (14)).

complex NP [$_{NP}$ *the girl who ate it, the potato salad*] is attached to the matrix T to receive a theta-role and get Case checked.[16] Thus, the example in (24) is acceptable.

As for (25), when *the potato salad* is encountered, it is identified as an NP which has neither theta-role assigned nor Case checked. At this point, *gave,* which is a theta-role assigner, is available. Thus, the Generalised Theta Attachment in (12) attempts to apply, and *the potato salad* is attached to the object position to which *gave* assigns its theta-role, resulting in local satisfaction of the theta criterion. When *a dollar* is reached, *the potato salad* is reattached to a constituent (e.g., [$_{VP}$ t_V *it*], where t_V = the trace of *ate*) inside the embedded clause. According to the Unconscious Reanalysis Condition in (13), however, this reattachment is costly: the original attachment site of *the potato salad* neither contains the final attachment site nor is c-commanded by the final attachment site. Thus, *the potato salad* is difficult to associate with the pronoun *it*.

5.1.2 The Extraposition from NP Construction

In this subsection, I will consider the Extraposition from NP Construction (henceforth EX) in English in the light of parsing performance. I will first show how extraposed elements are licensed based on the parsing strategies which I have adopted thus far. Then, I will argue that some locality effects observed in the EX can follow from the parsing strategies.

5.1.2.1 The Licensing of Extraposed Elements

There are at least two possible approaches to the EX, namely nonmovement vs. movement approaches. The latter approach is subdivided into two types; rightward vs. leftward movements (e.g., Kayne (1994)). It is clear that nonmovement analyses require some principle that licenses extraposed elements.[17] As Rochemont and Culicover (1997) point out, however, even movement analyses also require a principle which guarantees the proper interpretation of extraposed elements. In what follows, thus, I will discuss how extraposed elements are licensed in the light of parsing performance, rather than whether or not the EX is generated by movement.

[16] To be more exact, a theta-role is assigned to a postulated trace of the complex NP in the complement of *rushed,* and hence the NP receives the theta-role via a chain.
[17] ''Extraposed elements'' is a cover term referring to elements which appear to be ''displaced'' to the end of sentences.

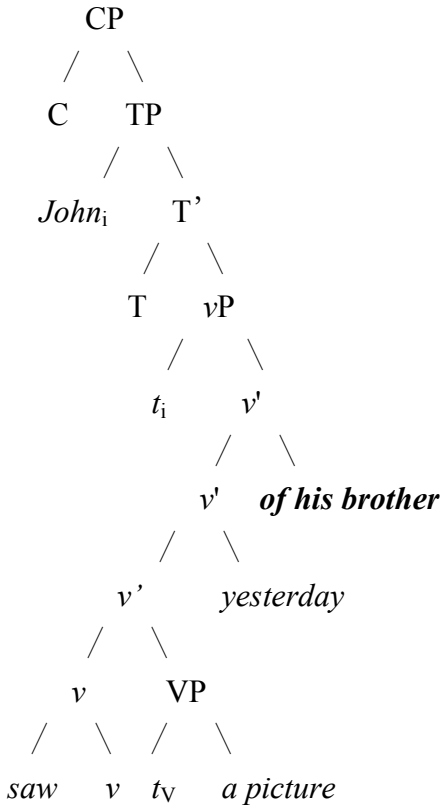
I will first consider how the parsing strategies which I have adopted thus far apply to simple sentences like (26), where extraposed phrases are in bold and elements associated with the extraposed phrases in italics:[18]

(26) a. John saw *a picture* yesterday **of his brother.**

b. *A review* appeared **of the book**

In (26a), when *yesterday* is encountered, it is attached to *v*'.[19] When *of his brother* is reached, it is also attached to *v'*, yielding a parse tree like (27):[20]

(27)



[18] There are two types of EXs according to whether extraposed elements are relative clauses or prepositional phrases:

(i) *A man* appeared **that no one knew**.
(ii) *A man* appeared **with blond hair**.

However, this is irrelevant to the present discussion.

[19] An alternative account would be to say that *yesterday* should be first attached to *a picture*. In this case, in order to receive an appropriate interpretation (i.e., to modify the verb), *yesterday* would be reattached to *v*'. This reanalysis is low-cost. Hence, there is no substantial difference between the two accounts.

[20] It is assumed that *of his brother* should not be attached to *yesterday* (see also footnote 21).

In (27), *of his brother* c-commands *a picture*, and hence it is associated with *a picture*, licensed by the LC (licensing condition) in (4), reproduced in (28):

(28) The licensing condition for the postverbal element (LC)
(where X= any syntactic category):
A phrase α adjoined to XP is licensed only if α is associated with β such that
(i) α c-commands β, and
(ii) α is non-distinct from β in terms of Case features **(**and honorific features)

Thus, *of his brother* can be interpreted as modifying *a picture*, resulting in the acceptability of (26a). An alternative analysis would claim that *of his brother* may be reattached to TP or CP. This reanalysis, however, is high-cost: the final attachment site is not contained in the phase (i.e., *v*P) which contains the original attachment site. Thus, *of his brother* cannot be reattached to TP or CP.

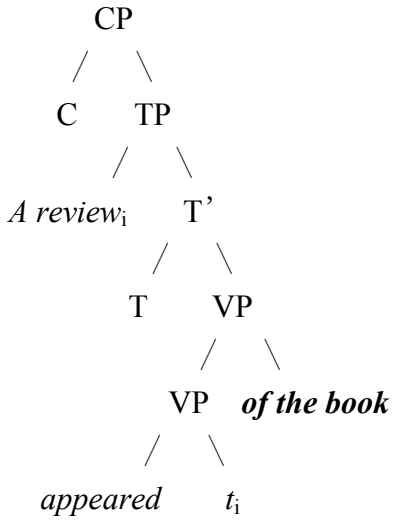
The argument immediately above also applies in the case where extraposed phrases cannot be associated with elements in the subject position of a transitive verb:

(29) * *A man* met John yesterday **with three arms**. [=(70b) in Chapter 2]

Like (26a), (29) is a transitive construction as well. If *yesterday* is adjoined to *v*', the RA (Right Association) requires *with three arms* to be attached to *v*'. As a result, *with three arms* cannot c-command *a man* (see (27)). In order to c-command *a man*, *with three arms* would be reattached to TP, but this reattachment is costly for the same reason as in (26a). Thus, *with three arms* is difficult to associate with *a man* (cf. (175) in Chapter 4).

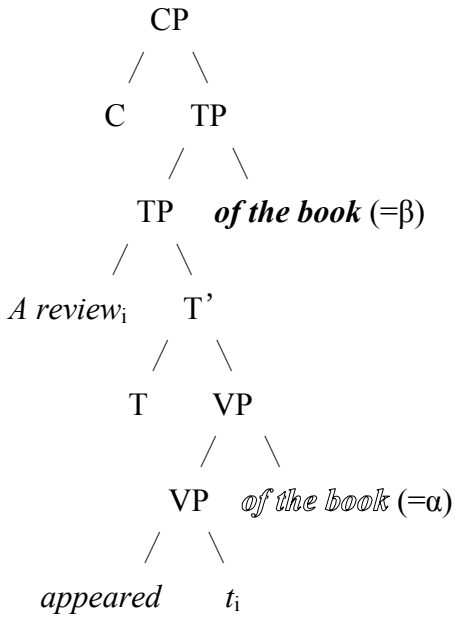
Now, let us turn to (26b), assuming that unaccusative verbs like *appear* do not contain a light verb, and hence, that a parse tree for (26b) is (30) (e.g., Chomsky (1995: 376)):

(30)



In the above structure, *of the book* is attached to VP in accordance with the RA. As (30) shows, however, *of the book* fails to c-command *a review*.[21] Hence, *of the book* is reattached to TP, producing a structure like (31), where the original attachment site of the extraposed phrase is indicated by white letters:

(31)



In (31), *of the book* (=β), which is adjoined to TP, c-commands *of the book* (=α), and every phase (i.e., the matrix CP) containing *of the book* (=α) contains *of the book* (=β). Thus, the reattachment of *of the book* to TP is low-cost in accordance with the Unconscious Reanalysis Condition in (13). In (31), *of the book* c-commands *a review*,

[21] I assume that nothing can modify traces (see 4.3.5.1 in Chapter 4).

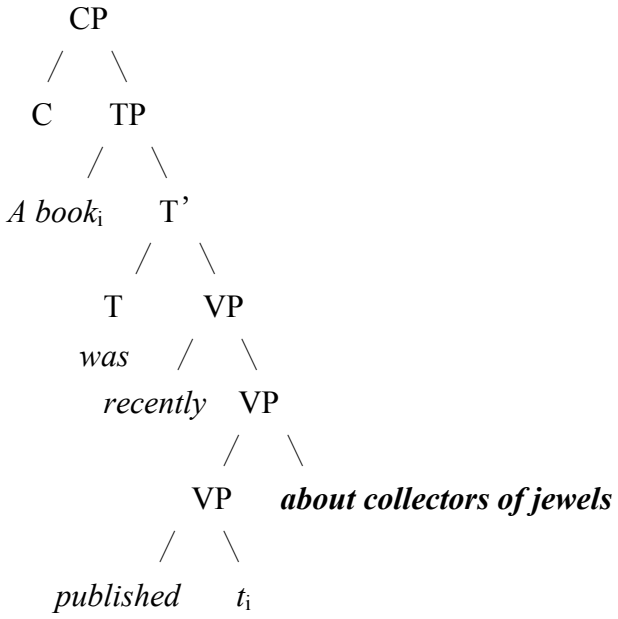
and thereby it is associated with *a review*. Hence, *of the book* can be construed as a modifier of *a review*.

If the passive construction does not involve a light verb, my proposed analysis can also account for a passive sentence like (32):

(32) *A book* was recently published **about collectors of jewels**.

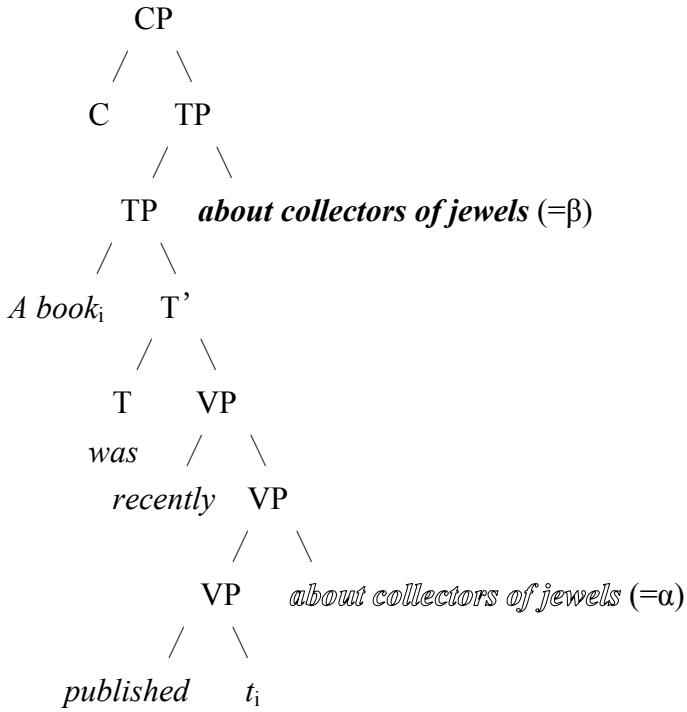
In (32), when *about collectors of jewels* is encountered, the RA mandates that it should be attached to VP, yielding a parse tree in (33):

(33)



In the above structure, *about collectors of jewels* cannot c-command *a book*. Then, *about collectors of jewels* is reattached to TP, creating a structure like (34), where the original attachment site of the extraposed phrase is indicated by white letters:

(34)



In (34), the reattachment of *about collectors of jewels* to TP is low-cost for the same reason as in (31). As (34) shows, *about collectors of jewels* c-commands *a book*, and hence it can be associated with the subject, being licensed. Thus, (32) is acceptable.

5.1.2.2 Locality effects

As observed in Chapter 2, the EX displays locality effects as shown in (35) and (36):

(35) a. [$_{NP}$ *A book*] was recently published **about collectors of jewels**. [=(32)]
b. * [$_{NP}$ A book [$_{PP}$ about *collectors*]] was recently published **of jewels**.

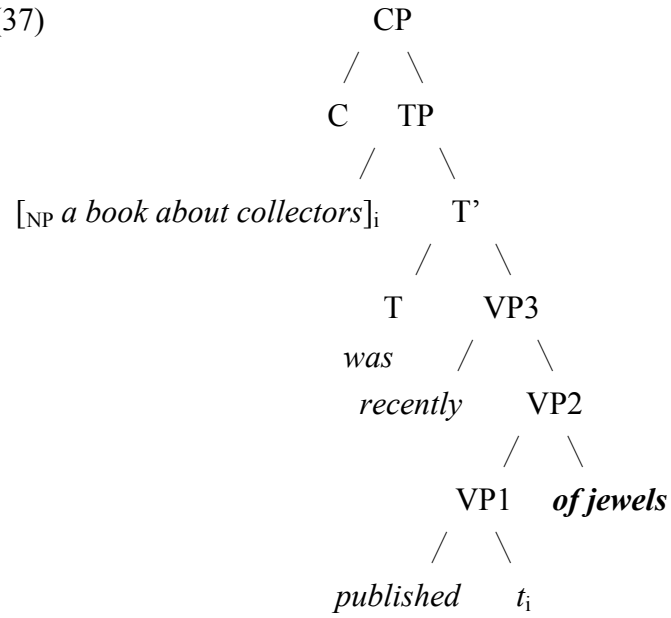
(36) a. [$_{CP}$That *a review* appeared **of the book**] was surprising.
b.*[$_{CP}$That *a review* appeared] was surprising **of the book**.

As we have seen, in (35a), *about collectors of jewels* can be construed as modifying *a book*. As for (35b), *of jewels* cannot be interpreted as modifying *collectors*, which is contained in the NP [$_{NP}$ *a book* [$_{PP}$ *about collectors*]]. In (36a), *of the book* and *a review* appear within the same embedded clause, and *of the book* can be construed as a modifier of *a review*. By contrast, in (36b), *of the book* is outside an embedded clause which contains *a review*, and cannot be interpreted as a modifier of *a review*.

In what follows, I will argue that such locality effects in the EX can follow from the parsing strategies.

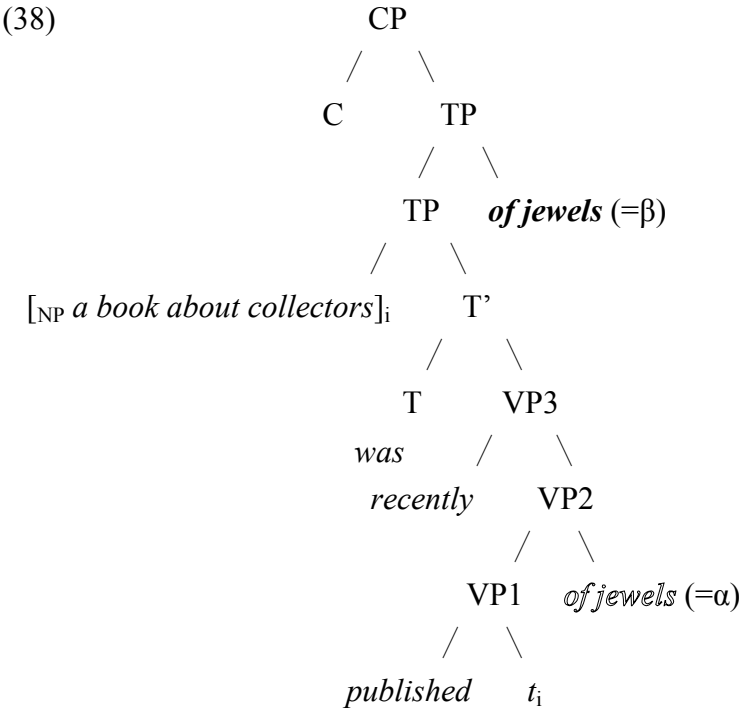
Let us first consider the example in (35b). When *of jewels* is encountered, it is required by the RA in (15) to be attached to VP, yielding a parse tree like (37) (see (32)):

(37)



In the above structure, *of jewels* cannot c-command *collectors*. *Of jewels* would hence be reattached to TP, producing a structure like (38), where the original attachment site of the extraposed phrase is indicated by white letters:

(38)



In the above structure, the reattachment to TP is low-cost, because *of jewels* (=β) c-commands *of jewels* (=α), and every phase (i.e., matrix CP) containing *of jewels* (=α) contains *of jewels* (=β). In (38), *of jewels* c-commands *collectors*. However, *a book about collectors* has priority over *collectors* for association with *of jewels* in accordance with the UREC in (14), reproduced in (39), along with the definitions of ‘‘similarity’’ and ‘‘closer’’:

(39) Unconscious Reinterpretation Condition (UREC)

It is impossible for the human parser to associate a syntactic object X with α, if there is β such that α is similar to β and β is closer to X than α is.

(i) α is similar to β iff

a. α, β and X are non-distinct in terms of categorial features (i.e., syntactic categories) and Case features (i.e., Nominative or Accusative), or

b. both α and β are potential modifiees of X.

(ii) Suppose that X c-commands α and β. Then,

β is closer to X than α is iff

a. β contains α, or

b. β c-commands α unless every phase (i.e., *v*P, CP) containing α contains β, or

c. otherwise (i.e., if β neither contains nor c-commands α), a path between β and X is shorter than the one between α and X.

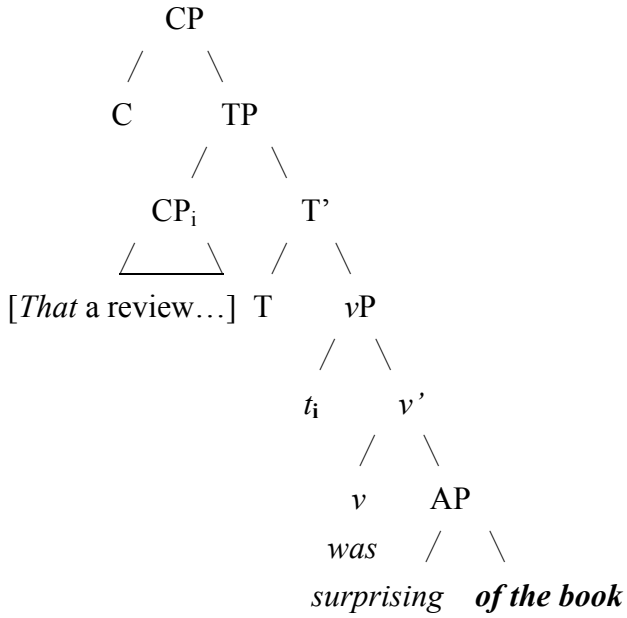
A book about collectors and *collectors* are both potential modifiees of *of jewels*, and the former contains the latter. Hence, *of jewels* is difficult to construe as a modifier of *collectors*.[22]

Now, let us return to the example in (36b) which displays the RRC effect, repeated in (40):

(40) *[That a review __ appeared] was surprising **of the book**.

In (40), when *of the book* is encountered, the RA mandates that it should be attached to the lowest node, AP, as shown in (41):

(41)



In (41), *of the book* can be associated with *surpring*. In this case, however, the interpretation is deviant although PPs are allowed to modify predicates in English. Then, *of the book* is reattached to *v'*, yielding a structure like (42). This reanalysis is low-cost for the same reason mentioned earlier. Yet, *of the book* still cannot c-command *a review* inside a sentential subject, and hence it may not be associated with *a review*, resulting in failure to modify *a review*. An alternative analysis would reattach *of the book* to the matrix *v*P or a higher site. However, this reattachment

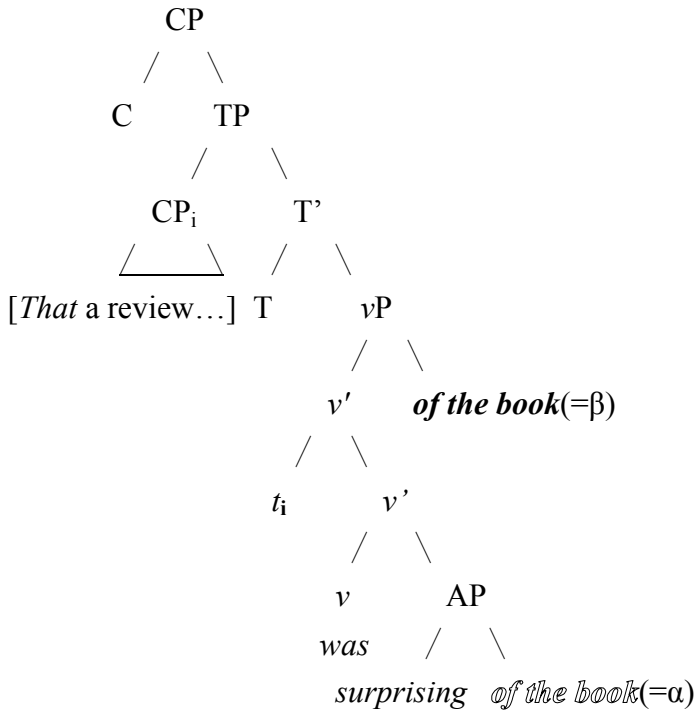
[22] As observed in Chapater 2, however, there are some marginally acceptable examples in which extraposed phrases may be associated with definite NPs inside NPs as shown below:

(i) a. [The tip [of the leg __]] was repaired **of the dining room table**.
b. [The names [of all the painters __]] are unknown **whose work is being exhibited in the Chicago Art Institute next week.**

I leave this problem open for future research.

would be costly. Accordingly, it is difficult to associate *of the book* with *a review* in (40).

(42)



My proposed analysis can further account for the locality effect displayed in the example in (43) where *of the linguistics book* is difficult to associate with *the latest view*, which is inside a complement clause: [23]

(43) *John told me [that Bill found *the latest review*] yesterday **of the linguistics book.**

(Sohn (1998: 405))

When *yesterday* is encountered, it is required to be attached to *v*' [$_{v'}$ *found the latest review*] within the complement clause according to the RA. When *of the linguistics book* is encountered, it is attached to the *v*' [$_{v'}$ *found the latest review yesterday*]. If the intended interpretation is that *yesterday* modifies [$_{v\text{P}}$ *told me*], *yesterday* would be reattached to [$_{v\text{P}}$ *told me*] along with the extraposed phrase. [24] This reanalysis,

[23] Within the framework of Frazier (1978), Sohn (1998) argues that (43) can be accounted for in terms of parsing strategies.

[24] As shown in (i), a sentence identical except for the complete absence of the extraposed phrase is also unacceptable (see footnote 131 in Chapter 4):

(i) *?John told me [that Bill found the latest review] yesterday.

however, is costly: the final attachment sites c-command the original attachment sites, but the former are not contained in every phase which contains the latter. Hence, (43) is unacceptable.[25]

5.1.2.3 Other consequences

Let us first consider the following example:

(44) *She$_i$ invited *many people* to the party **that Mary$_i$ didn't know**.
(Rochemont and Culicover (1990: 34))

As observed by Rochemont and Culicover (1990), in (44), *she* c-commands *Mary*, thereby violating the Binding Principle C. This suggests that extraposed phrases which are associated with elements in object position cannot be adjoined to TP or a higher position. That is, if *that Mary didn't know* were adjoined to TP or CP, an interpretation of coreference between *she* and *Mary* would be possible. Hence, the extraposed phrase must be inside T'.

My proposed analysis can account for why *she* c-commands *Mary* in (44). When *that Mary didn't know* is encountered, it is required by the RA to be attached to the lowest NP *the party*, yielding a parse tree like (45):

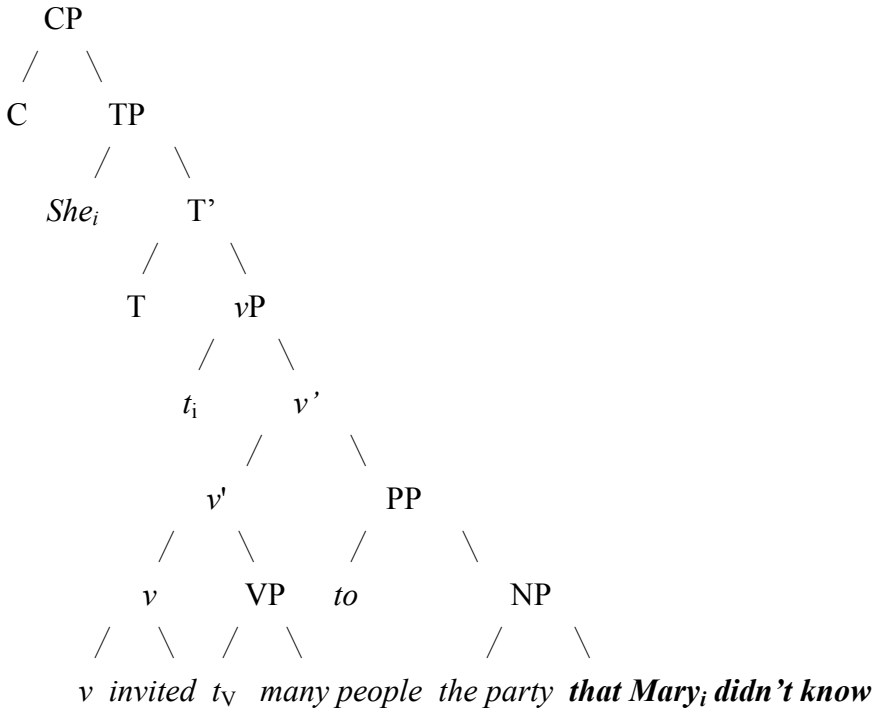
The example in (i) should be accounted for in the same way as in (43).

[25] Peter Ackema, in a personal communication, pointed out to me that an example like (i) is different from (43) in that without extraposed elements, the acceptability of the sentence can be improved, as shown in (ii):

(i) *It was believed [that John saw *a picture* in the newspaper] by everyone **of his brother**.
(ii) It was believed [that John saw *a picture* in the newspaper] by everyone.

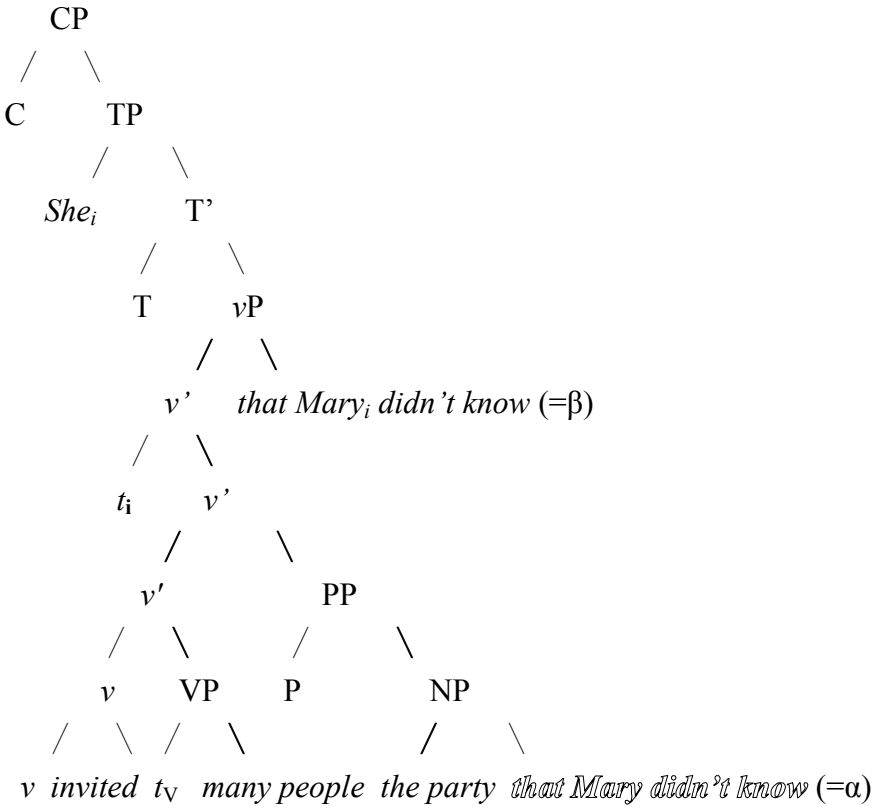
The examples in (ii) can have the interpretation that *by everyone* belongs to the matrix clause. Thus, I speculate that such an adjunct can be attached to a matrix predicate without conscious efforts, although I do not have any particular account for why the RA is violable in this case (see footnote 130 in Chapter 4). The example in (i) may be accounted for in the following manner: when *of his brother* is encountered, it is attached to the matrix predicate [*believed by everyone*]. According to the UREC in (39), *of his brother* is prevented from being associated with *a picture* by *everyone*, which is closer to the extraposd phrase than any other potential modifiee (i.e., *everyone* has the first priority for association with *of his brother*). Thus, *of his brother* is difficult to associate with *a picture*.

(45)



In the structure in (45), the relative clause cannot c-command *many people* and hence, it fails to modify *many people* in accordance to the LC (licensing condition). However, a syntactic reanalysis can be made without conscious efforts (see (14)). That is, the relative clause can be reattached to *v',* as shown in (46):

(46)



In the above structure, the reattachment to *v*' is low-cost, because the ''new'' extraposed clause (=β), which is adjoined to *v*', c-commands the ''old'' extraposed clause (=α), which was adjoined to NP, and every phase (i.e., matrix *v*P and matrix CP) containing the ''old'' extraposed clause contains the new extraposed clause (=β), which c-commands *many people*. The new extraposed clause can be associated with *many people*, and is licensed, thereby modifying *many people*, because there is no intervener in the sense of the UREC in (39). However, *she* still c-commands *Mary*, violating the Binding Principle C. An alternative analysis would reattach the extraposed clause to TP or CP in order that *she* may not c-command *Mary*. Yet, this type of reanalysis is high-cost ((14)): the final attachment site is not contained in the phase *v*P which contains the original attachment site. Thus, (44) is unacceptable.

My proposed analysis predicts further that extraposed phrases can be associated with relevant elements within prepositional phrases:[26]

[26] As observed in Chapter 2, extraposed elements can be associated with fronted wh-words and topicalised phrases:

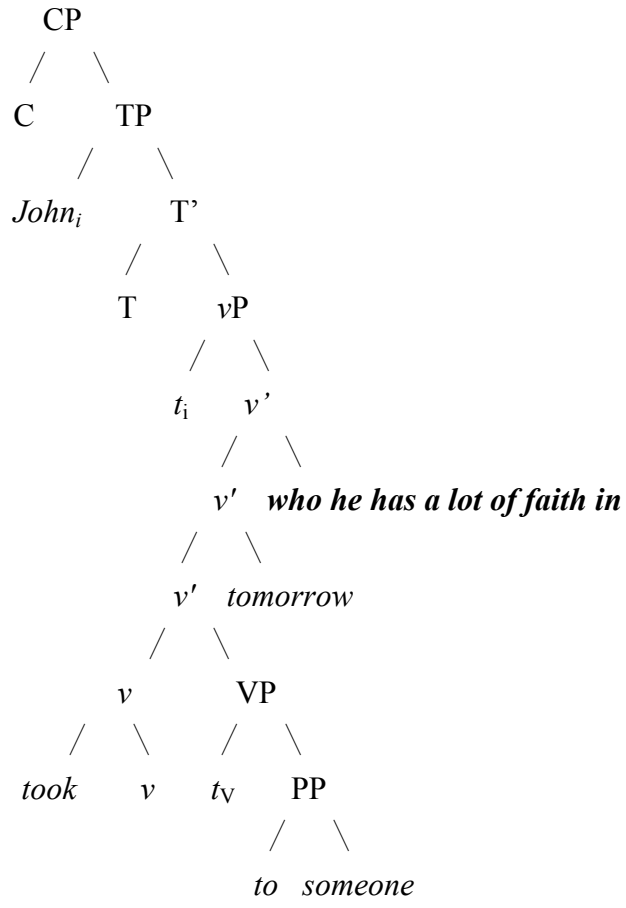
(i) a. *What*$_i$'s he wheeling in t_i here **that looks like a baby-buggy for a baby from Mars**?
b. *Lots of bad habits*$_i$ you boys picked up t_i **that you'll have to get over**.

However, my proposed analysis would incorrectly exclude this case: in (ia), if *here* is attached to *v'*, when the relative clause in question is encountered, it would be attached to *v'*. In order to c-command to *what*, the relative clause would be reattached to CP. This reattachment, however, is

(47) John is going to [$_{vP}$ talk [$_{PP}$ to [$_{NP}$ *someone*]] tomorrow] **who he has a lot of faith in**.

In (47), when *tomorrow* is encountered, it is attached to *v'*. When *who he has a lot of faith in* is reached, it is attached to *v'*. As the structure in (48) shows, *who he has a lot of faith in* c-commands *someone*, and is not prevented by anything from being associated with *someone* in accordance with the UREC in (39).[27] Hence, *who he has a lot of faith in* can modify *someone*.

(48)



5.1.3 Heavy NP Shift construction

In this subsection, I will focus on the locality effects displayed in the Heavy NP Shift (HNPS) construction. Based on the assumption that HNPS is an operation in

costly. Thus, *that looks like a baby-buggy for a baby from Mars* would be difficult to associate with *what*, which is contrary to fact. The same occurs with (ib). I leave this problem open for future research.

[27] *Someone* is not c-commanded by anything else that is a potential modifiee of the relative clause in question.

the phonological component, I will show that the locality effects in the HNPS construction can follow from the parsing strategies which hold true for other rightward movement constructions discussed thus far.

5.1.3.1 Locality and HNPS

As observed in Chapter 2, the HNPS construction displays the effect of the RRC, part of the examples reproduced in (49), where each "shifted" NP is in boldface and each *e* is used to mark the position which is expected to be associated with the "shifted" NP.

(49) a.*[$_{CP}$That John sent *e* to his mother] is understandable **the money you wanted him to give us**.

b.*Sue claimed [$_{CP}$ that she will give *e* to Mary] yesterday **a big book**.

If HNPS is a part of narrow syntax, it will pose a problem for a theory which assumes that movement (i.e., Internal Merge) is driven by feature-checking, because given that HNPS is optional, there seem to be no features triggering HNPS. Thus, I assume here that HNPS is a phonological operation which belongs to the phonological component.[28] I assume further that HNPS shifts an NP rightward.[29]

In what follows, I will attempt to derive locality effects in HNPS constructions from parsing strategies. Before discussing locality, however, I will consider how parse trees are assigned to simple sentences which contain shifted NPs.

Observe the following examples:

(50) a. He attributed t_i to a short circuit [**the fire which destroyed most of my factory**]$_i$.

(Ross (1986: 34))

b. You should read t_i with the greatest attention [**all the instructions which you receive in the course of the day**]$_i$**.**

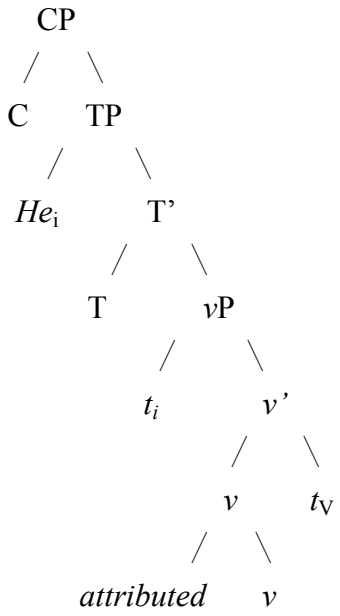
(Haegeman and Guéron (1999: 221))

[28] Given the fact that NHPS changes the binding relation, as observed in Chapter 2, this assumption would be dubious, if displacement rules in the phonological component have little surface-semantic effect. See for example Saito & Fukui (1998) for an alternative analysis of an optional movement in the framework of the MP (see also footnote 29).

[29] For discussion concerning leftward movement approaches, see Kayne (1994) and Rochemont & Culicover (1997). The latter point out that there is no empirical difference between leftward and rightward movement approaches. Another possibility is that the "shifted" NP is adjoined to an element via External Merge (i.e., base-generated in place). In this case, it is unclear how theta-roles are assigned to the NPs which appear in adjoined position.

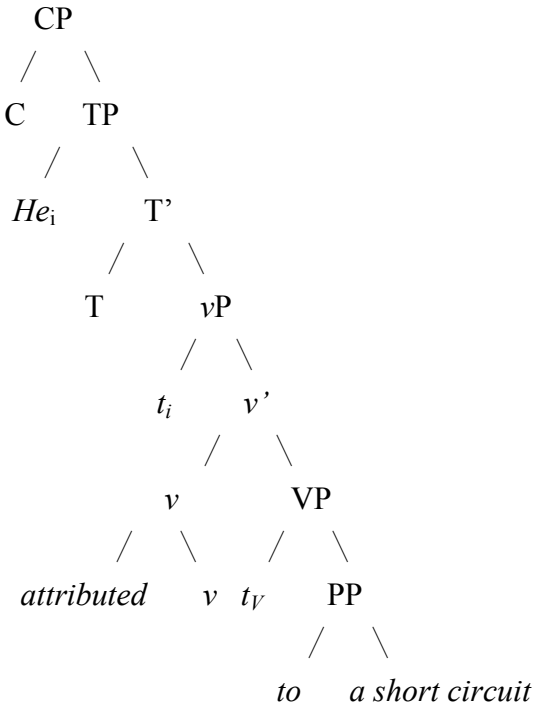
In (50a), when the verb *attributed* is encountered, it is identified as a verb which may assign three theta-roles. The Generalised Theta Attachment applies to locally satisfy syntactic principles (e.g., the theta criterion). *He* is integrated as an argument to have a theta role assigned and its Case feature checked. The parse tree at this point is given in (51):

(51)



When [$_{PP}$ *to a short circuit*] is reached, it is attached to the trace of *attributed* as an argument of the verb to receive a theta role, yielding a structure like (52):

(52)

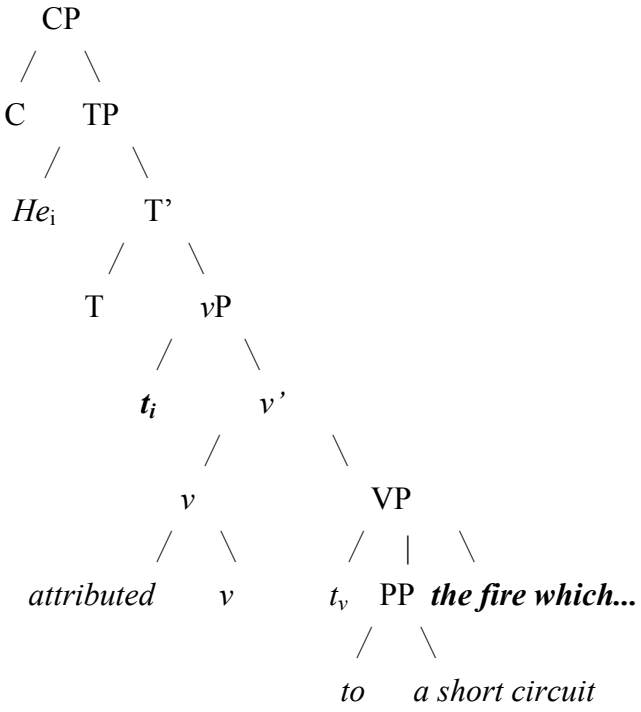


Note that the current process locally satisfies syntactic principles.

When *the fire which destroyed most of my factory* is encountered, it is identified as an NP which has neither a theta-role assigned nor Case checked. The shifted NP is attached to the trace of *attributed* to get a theta-role assigned and Case checked. The parse is finished successfully. The final parse tree is (53):[30]

[30] The structure in (53) is compatible with the claim that external Merge yields n-ary constituents (see Chapter 3).

(53)

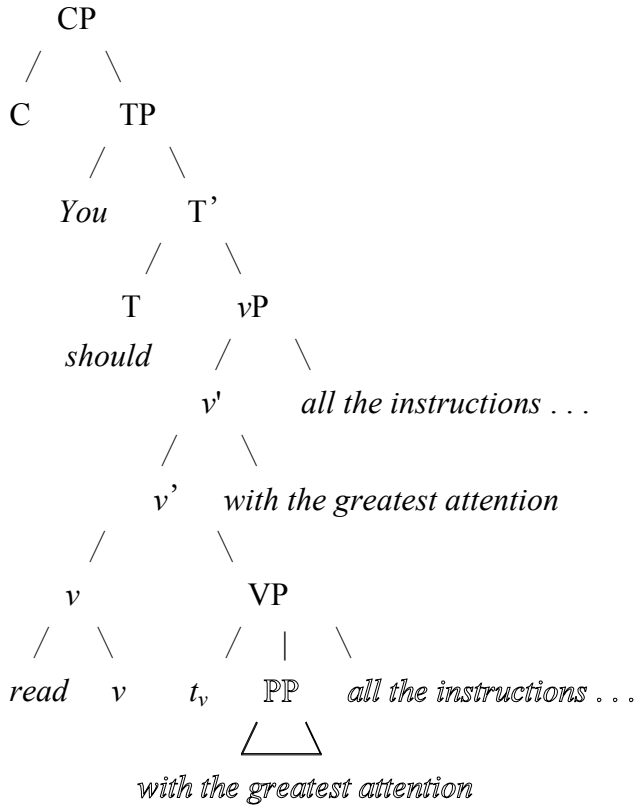


Let us then consider (50b), reproduced in (54) for ease of reference:

(54) You should read t_i with the greatest attention [**all the instructions which you receive in the course of the day**]$_i$**.**

In (54), when *with the greatest attention* is encountered, it is required by the RA (Right Association) in (15) to be attached to the trace of *read*. When a shifted NP is reached, it is identified as an NP which has neither a theta-role assigned nor Case checked. The shifted NP is attached to the trace of *read* to get a theta-role assigned and Case checked. In order to receive an appropriate interpretation, *with the greatest attention* should be reattached to *v'* along with the shifted NP, yielding a parse tree like (54'), where the original attachment sites of the relevant PP and the shifted NP are indicated by white letters:

(54')



In the above structure, the final attachment sites of the PP and the shifted NP c-command the original attachment sites, and the former are within every phase (i.e., *v*P, CP) which contains the latter (see (13b)).[31] Thus, the reattachment to *v*' is low-cost, resulting in the acceptability of (54).

Now, let us return to the locality effects displayed in the HNPS construction. I will first consider the examples in (49), repeated in (55) for ease of reference:

(55) a.*[$_{CP}$That John sent t_i to his mother] is understandable [**the money you wanted him to give us**]$_i$.

b.*Sue claimed [$_{CP}$ that she will give t_i to Mary] yesterday [**a big book**]$_i$.

In (55a), when *to his mother* is encountered, it is analysed as the complement of the verb *sent*.[32] When encountering *is,* the parser realises that the embedded clause is

[31] If *with the greatest attention* was attached to *v'* or VP before shifted material is encountered, the shifted phrase would not receive a theta-role from the trace of *read*, because the shifted NP is attached to the adjoined position, where no theta roles are assigned. Under my proposed analysis, however, the question will arise why it is possible to procrastinate a syntactic reanalysis of *with the greatest attention* until the shifted NP is assigned a theta-role, a question to which I cannot give an answer at present. See Frazier (1999) for a discussion concerning ''interpretive'' processing.

[32] Although one theta role of *sent* is left undischarged, a local satisfaction of the theta-criterion is achieved.

closed, one theta-role undischarged (i.e., *sent* fails to discharge the theta-role), and hence, that the theta criterion is not locally satisfied, for example. Thus, the parser stops parsing the sentence, resulting in the unacceptability of (55a). It should be noted that unlike leftward movement, rightward movement does not provide a filler (i.e., a shifted NP) for the parser before the parser encounters a theta-role assigner, and hence, that in (55a), a trace cannot be postulated as an argument of *sent* when *is* is encountered (see also Ackema and Neeleman (2000)).

In (55b), when *yesterday* is encountered, it is first attached to the trace of the embedded clause verb *give*. When *a big book* is reached, it is attached to the trace of *give* to receive a theta-role. In order to receive an appropriate interpretation (i.e., to modify *claimed*), *yesterday* would be reattached to the matrix predicate along with *a big book*. This reanalysis, however, is high-cost for the same reason as in (43): the final attachment sites of *yesterday* and *a big book* are not contained in every phase which contains both original attachment sites. Thus, (55b) displays the RRC effect.

The inability of the object of a preposition to undergo HNPS can also be accounted for under my proposed analysis:

(56) a. *He bargained [$_{PP}$ with t_i] about wages [**three senior officials**]$_i$.
b. *She flew off [$_{PP}$ to t_i] after the semester [**the oldest city in Mongolia**]$_i$.

In (56a), when *about wages* is encountered, it is attached to *v*', because *with* cannot take PP as its complement.[33] When *three senior officials* is reached, it is attached to *v*', and hence it fails to receive a theta-role from *with*, violating the theta criterion.[34] Thus, the sifted NP cannot be construed as the object of *with*. The same is true of (56b).

At first sight, (57) seems to a problematic example for my proposed analysis:

(57) I have [$_{vP}$ wanted [$_{CP}$ [$_{TP}$ PRO [$_{vP}$ to know t_i]]] for many years]—[**exactly what happened to Rosa Luxemburg**]$_i$.

(Postal (1974: 92n8))

In the above example, there is a clause boundary intervening between an object position *t* of the verb *know* within an embedded clause and a shifted phrase. When *for many years* is encountered, it is first attached to the trace of the embedded clause

[33] There is an exceptional case where prepositions can take PPs as their complements in English (e.g., *from behind a house*).
[34] I have followed Chomsky (2000) in adopting the theta-theoretic principle by which arguments can undergo External Merge only if they appear in theta-position (see Chapter 3).

verb *know*. When the shifted phrase is reached, it is attached to the trace of *know* to receive a theta-role. In order to receive an appropriate interpretation, *for many years* should be reattached to the matrix predicate along with the shifted phrase. This type of reanalysis, however, is high-cost for the same reason as in (55b). Note that even if *for many years* was first attached to the matrix predicate, the shifted NP would fail to receive a theta-role from the trace of the embedded clause verb *know* (see footnote 31).

However, if one assumes that there is a "restructuring" rule in the phonological component (Rizzi (1982)), then the structure for (57) will be as follows:[35]

(58) I have [$_{vP}$ [$_{VP}$ [$_{V}$ wanted to know] for many years—**exactly what happened to Rosa Luxemburg**]].

If a restructuring rule applies when *know* is encountered, the parse tree will also be a structure like (58). Thus, *for many years* as well as the shifted phrase is first attached to the trace of a restructured verb [$_{V}$ *wanted to know*]. Then, *for many years* is reattached to *v'* along with the shifted phrase so that the former can be given an appropriate interpretation. This reanalysis is low-cost: every phase which contains the original attachment sites of both *for many years* and the shifted phrase contains their final attachment sites, each of which c-commands the original attachment site. Thus, if the parser employs a restructuring rule, the parsing strategies can account for why some shifted material appear outside clauses

5.1.4 Summary

In this section, I have shown that the licensing condition proposed in Chapter 4 also holds true for dislocated NPs in English RDC as well as extraposed elements in English EX. I have also argued that the locality effects displayed in three types of English Rightward Movement Constructions can follow from the parsing strategies which are applicable to the JPVC.

5.2 The HNPS construction from a cross-linguistic perspective

In this section, I will demonstrate that the parsing strategies predict that languages fall into three types with respect to the possibility of the HNPS

[35] Rizzi (1982, Chapter 1) proposes a restructuring rule concerning certain complex verbs which optionally transforms a biclausal structure into a monoclasusal structure.

construction: (i) even subjects can appear postverbally (e.g., Italian, Japanese, Turkish); (ii) subjects cannot do so (e.g., English); (iii) the HNPS construction cannot exist (e.g., Dutch, German).[36,37]

5.2.1 *pro*-drop languages

The *pro*-drop languages are subdivided into two types according to word order: (a) SVO languages such as Italian; (b) SOV languages such as Japanese and Turkish. I will first discuss the Italian HNPS construction. Then, I will mainly consider the Turkish HNPS construction.

5.2.1.1 SVO languages

This type of language (i.e., a *pro*-drop language) can employ an empty pronoun *pro*. In the case where neither fillers (e.g., wh-words) nor overt subjects precede a finite predicate, when encountering a predicate, the parser postulates *pro* and its trace in the specifier position of TP and that of *v*P, respectively.[38] If an element α appears at the end of a sentence in which an overt argument, if any, appears in object position, α may be identified as an NP which does not have a theta-role. α is required by the RA to be adjoined to VP, but it can be reattached to *v'*, thereby c-commanding the trace of *pro*. [39] Hence, α can be associated with the trace of *pro*, licensed, and construed as an argument sharing properties (e.g., a theta-role) with the trace of *pro*. Thus, it is predicted that *pro*-drop languages allow a subject to appear postverbally.[40]

This prediction is confirmed by the data observed in Chapter 2, where it is shown that in Italian, a subject can appear at the end of a finite clause without inserting an overt element in the subject position, the examples reproduced in (59):

(59) a. ?*pro* ha dato un libro a Maria **Gianni**.
has given a book to Maria **Gianni**.

[36] In section 5.2, I will refer to the postverbal construction (PVC) as the HNPS construction only when an NP appears in postverbal position, whether or not the derivation of the shifted NP involves movement.
[37] VSO and VOS languages are not involved in the discussion here.
[38] Since I have adopted a head-driven parsing strategy, even if a filler comes before a theta-role assigner, the trace of the filler is not postulated until the assigner is encountered.
[39] This reanalysis is low-cost (see (18)).
[40] If HNPS applies, the grammar will allow a subject position to be occupied by *pro* (if available) as well as the trace of a shifted NP. This is compatible with the claim that parse trees are a subset of structures built in the syntax.

b. *pro* ha mangiato **Gianni**.
has eaten **Gianni**.

In each example in (59), when a verb is encountered, *pro* is postulated in the specifier position at the same time as its trace is created in the specifier position of *v*P. When *Gianni* is reached, it is identified as an NP which lacks a theta-role. *Gianni* is first adjoined to VP, and reattached to *v*', thereby c-commanding the trace of *pro* in the specifier position of *v*P. *Gianni* may thus be licensed by the LC in (4). In Italian, hence, subjects may appear in postverbal position.[41]

As long as a shifted phrase can be attached as a sister of a verb, it may be assigned a theta-role and hence it does not have to appear adjacent to the verb. Thus, it is predicted that objects can be farther placed to the right than is usual. It has been shown in Chapter 2 that in Italian, an object can be shifted rightward, the relevant examples repeated in (60):

(60) a. Ho [$_{v}$P imparato da mio fratello **molte cose**].
I learned from my brother **many things**.
b. ho [$_{v}$P tagliato con questo coltello **un pezzo di pane**].
I cut with this knife **a slice of bread**.

In (60a), when *da mio fratello* ("from my brother") is encountered, it is required by the RA in (15) to be attached to the trace of the verb *imparato* (''learned''). When *molte cose* ("many things") is reached, it is identified as an NP which has neither a theta-role assigned nor Case checked. The shifted NP is attached to the trace of the verb to get a theta-role assigned and Case checked.[42] Subsequently, *da mio fratello* ("from my brother") is reattached to *v'* along with the shifted NP so that the PP can be given an appropriate interpretation. This reanalysis is low-cost (see (54)). Thus, (60a) is acceptable. The same account can be given for (60b). In Italian, thus, objects can be put farther to the right side in *v*P than is normal.

[41] If Rizzi's (1986) statement that a pronoun cannot be locally A-bar bound by a quantified /non-referential NP is right (see section 5.1.1; (65) in Chapter 4), then my proposed analysis incorrectly rules out the example in (i) where a non-referential expression is shifted:

(i) Può già andare, **ogni ragazzo**. [= (136b) in Chapter 2]
can already go **every boy**

I leave this problem open for future research.
[42] At this point the theta-criterion is satisfied.

Taken together, the above data demonstrate that the parsing strategies correctly predict that Italian has the HNPS construction with respect to both subjects and objects.

5.2.1.2 SOV languages

Let us suppose that *pro*-drop languages with basic word order SOV employ underspecified null arguments (see footnote 59 in Chapter 4). If there are not fillers (e.g., scrambled elements) or overt arguments preceding a finite predicate, the parser postulates a null argument on reaching the predicate. If an element α appears at the end of a sentence, α may be identified as an NP which does not have a theta-role. If α is attached to a preceding element, thereby c-commanding the postulated null argument, α is associated with the postulated null argument and licensed. As a result, α may be construed as an argument sharing properties with the null argument. That is, my proposed system predicts that elements which seem to correspond to subjects as well as objects can appear in postverbal position in this type of language. This prediction has been already verified by Japanese data provided in Chapter 4, where I have claimed that the JPVC is not derived by movement, though. In what follows, I will show that the parsing strategies are applicable to the HNPS construction/PVC in Turkish as well (see footnote 36).

It was observed in Chapter 2 that Turkish has the PVC, a couple of relevant examples reproduced in (61), where *e* indicates a position associated with a relevant postverbal element:

(61) a. *e* Üç kiş yi dün aramiş **herkes**.
three person-Acc yesterday call-PAST-3SG **everyone-Nom**
"**Everyone** called three people yesterday."
b. Herkes dün *e* aramiş **üç kiş yi**.
everyone-Nom yesterday call-PAST-3SG **three person-Acc**
"Everyone called **three people** yesterday."

Now, let us consider the derivation of (61a).[43] When *üç kiş yi* ("three person-Acc) is encountered, it is classified as an accusative NP which lacks a theta-role. Then, it is kept in store. On reaching *dün* ("yesterday"), the parser identifies it as an adverb, and

[43] As mentioned earlier (see 4.4.2. in Chapter 4), Kural (1997) claims that the PVC in Turkish is derived by rightward movement. However, even if movement analyses were adopted, the parser would never postulate traces of postverbal elements (see footnote 40).

stores it until a predicate appears. When *aramiş* ("called") is reached, it is identified as a verb which has two theta-roles. Subsequently, the parser integrates the object and the adverb with the verb and *v*, respectively, at the same time as postulating a gap as a null argument, which should be attached to the specifier of *v*P if in general, a subject is not required to move to the specifier of TP in Turkish. When *herkes* ("everyone-Nom") is encountered, it is identified as an NP which does not have a theta-role. The postverbal NP is thus adjoined to a CP if the verb is raised to C (Kural (1997)). The licensing condition in (4) subsequently attempts to apply in order to assure that the postverbal NP can be licensed. The postverbal NP c-commands the postulated null subject, and they are non-distinct in terms of Case features. Hence, the postverbal NP is licensed, resulting in the acceptability of (61a). The similar story may be told about the example in (61b), where an accusative Case marked NP appears postverbally. Turkish therefore allows both subjects and objects to appear in postverbal position as Japanese does.

5.2.1.3 Summary

In the previous two subsections, I have shown that as predicted by the parsing strategies, pro-drop languages allow even subjects to appear in postverbal position, whether or not the HNPS construction is derived by movement.

5.2.2 Non-*pro*-drop languages

Let us suppose that in non-*pro*-drop languages, not only *pro* but also an underspecified null argument (i.e., *e*) is unavailable.[44] Then, the non-*pro*-drop languages can also be subdivided into two types according to word order: (i) SVO languages such as English; (ii) SOV languages such as German and Dutch. I will first discuss the English language which allows no subjects to appear in postverbal position. Then, I will consider SOV languages which lack the HNPS construction.

5.2.2.1 SVO languages

If an overt subject does not appear in a finite clause, a null subject (i.e., *pro* or *e*) cannot be postulated when a predicate is encountered.[45] At this point, the absence

[44] It is assumed that PRO should be available to such languages. Hence, PRO may be postulated in the specifier position of TP or *v*P in a non-finite clause; otherwise the theta criterion would be violated.

[45] If a filler appears in the left side of the predicate, a trace of the filler is postulated as soon as a

of *pro* or *e* does not locally satisfy the theta-criterion or the Extended Projection Principle (EPP) by which the specifier of TP position must be occupied by an element to delete an uninterpretable feature in T.[46] Hence, it is predicted that non-*pro*-drop languages with basic word order SVO do not allow subjects to appear postverbally. This prediction is verified by the English examples observed in Chapter 2, the relevant example reproduced in (62):[47]

(62) * *e* walked into the room **a man with long blond hair**.

In (62), when *walked* is encountered, it is identified as a verb which has one theta-role. At this point, neither the theta-criterion nor the EPP are locally satisfied, because the parser fails to postulate a null subject due to the unavailability of *pro* or *e*. Thus, the parser stops parsing the sentence, resulting in the unacceptability. Note that the parser is not provided with a filler before encountering a theta-role assigner (i.e., *walked*), and hence, that in (62), traces cannot be postulated in the specifier positions of TP and *v*P when *walked* is encountered.

By contrast, the parsing strategies allow an object to be placed farther to the right in *v*P than is normal, as demonstrated in the previous section: in so far as a shifted NP can be attached as a sister of a verb, it may receive a theta-role and hence it does not have to appear adjacent to the verb.[48]

5.2.2.2 SOV languages

Base on the assumption that neither *pro* nor an underspecified null argument (i.e., *e*) is available to non-*pro*-drop languages with basic word order SOV, the parser cannot postulate null arguments in subject position or in object position on encountering a predicate in a finite clause when an overt subject or object does not come before the predicate except in the case where fillers (e.g., wh-words) precede the predicate. Thus, whether a shifted NP is produced by movement (i.e., HNPS) or base-generated in place, the syntactic principles cannot be locally satisfied due to the

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theta-assigner is encountered.

[46] For recent discussions on EPP, see Landau (2007) and references cited therein.

[47] It is assumed that an example like (62) can be derived by HNPS in the phonological component (see section 5.1.3).

[48] In English, a direct object must be adjacent to the verb unless it is "heavy". It is thus necessary to account for why (i) is much worse than (ii):

(i) *John gave to Mary **a book**.
(ii) John gave to Mary **a book which he bought at that shop yesterday**.

However, I leave this problem open for future research.

absence of postulated null arguments: neither the EPP (in the case where subjects would be ‘‘shifted’’) nor the theta-criterion is locally satisfied. Hence, elements which correspond to subjects or objects cannot appear postverbally in non-*pro*-drop languages with SOV. That is, this type of language lacks the HNPS construction. This is confirmed by the data provided in Chapter 2, where it was observed that in German and Dutch, neither subjects nor objects can appear in postverbal position, the relevant examples reproduced below:

German

(63) a. * *e* Ist unsinnig **die Hypothese, die du darlegst.**
Is nonsensical the hypothesis which you expound
"The hypothesis which you expound is nonsensical."

b.*Der Hans hat *e* zurückgegeben **das Geld, das er gestohlen hat**.
The Hans has returned the money that he stolen has
"Hans has returned the money that he has stolen."
(cf. Der Hans hat **das Geld, das er gestohlen hat** zurückgegeben.)

Dutch

(64) a.**e* Zijn verouderd **de meeste artikelen die ik hierover heb gevonden**.
Are outdated the most articles that I about this have found
"Most articles that I have found about this are outdated."

b.*Ik heb *e* opgegeten **de vis die over was**.
I have eaten the fish that left was
"I have eaten the fish that was left."

In (63a) and (64a), when the matrix predicates are encountered, null subjects cannot be postulated because of the unavailability of *pro* and underspecified null arguments, resulting in failure to locally satisfy the theta criterion and the EPP. Thus, the parser stops parsing the relevant sentences, and hence the examples in (63a) and (64a) are unacceptable. Likewise, in (63b) and (64b), when the matrix verbs are reached, null objects cannot be postulated due to the unavailability of underspecified null arguments, violating the theta criterion. Thus, the parser stops parsing the sentences in question, and hence both (63b) and (64b) are unacceptable. Note that in SOV languages, unlike the case of SVO languages, as soon as theta-role assigners (i.e.,

predicates) are encountered, they must discharge every theta-role if possible because arguments (i.e., theta-role assignees) can appear only before theta-role assigners. [49]

5.2.3 Summary

Table 1 summarises the prediction derived from the parsing strategies with respect to the possibility of the HNPS construction (HNPSC).

Word order / Null argument		SVO		SOV	
		HNPSC	Language	HNPSC	Language
available	subject	Possible	e.g. Italian	Possible	e.g.Japanese, Turkish
(available)[50]	object	Possible		Possible	
unavailable	subject	Impossible	e.g. English	Impossible	e.g.German, Dutch
unavailable	object	Possible		Impossible	

Possible classes based on two dimensions: word order vs. *pro*-drop parameter:

Table 1

5.3 Conclusion

In the first half of the present chapter, I have shown that the licensing condition holding true for the JPVC is applicable not only to the English Right Dislocation Construction but also to the English Extraposition from NP Construction. Furthermore, I have claimed that the effects of locality in three types of rightward

[49] It was observed in Chapter 2 that complement clauses can appear postverbally.

(i) Er hat uns *e* gesagt, **[$_{CP}$ dass er morgen kommt]**. (German) [= (107b) in Chapter 2]
He has uns told that he tomorrow comes
"He has told us that he is coming tomorrow."

(ii) Ze kunnen niet *e* begrijpen **[$_{CP}$ waarom dat niet mag]**. (Dutch) [= (92b) in Chapter 2]
They cannot understand why that not may
"They cannot understand why that is not allowed.

If one assumes that in (i) and (ii), the parser does not stop parsing the sentences when the verbs are encountered, then the postverbal complement clauses would be attached to position where theta-roles are assigned; when the postverbal elements are encountered, they are attached to verbs adjoined to Ts, which are assumed to appear on the right side of the verbs. If such complex verbs still assign theta-roles to arguments, the postverbal elements attached to such complex verbs are assigned theta-roles, satisfying the theta-criterion. If such complex verbs fail to assign Case, postverbal NPs (i.e., "shifted" NPs) would not be assigned theta-roles because of the visibility condition for theta-role assignment by which an NP can be assigned a theta-role only if it is in a position to which Case is assigned or is associated with an element in such a position (see also Chomsky (1986b: 94-95). In German and Dutch, thus, complement clauses can appear in postverbal position, but NPs cannot. If this account is on the right track, the parser might continue parsing sentences until potential theta-role assignees appear even in the case of SOV languages.

[50] The availability of *pro* in object position is irrelevant to the HNPS construction in SVO languages.

movement constructions in English including the Heavy NP Shift Construction can follow from the parsing strategies which are independently motivated.

In the second half, based on the parsing mechanisms, I have proposed that languages fall into three types with respect to the possibility of the Heavy NP Shift Construction:(a) both subjects and objects can appear postverbally (e.g., Italian, Japanese, Turkish); (b) subjects cannot do so (e.g., English); (c) neither subjects nor objects can appear in postverbal position (e.g., Dutch, German).

Chapter 6 Conclusion

In this thesis, I have developed a nonmovement approach to the JPVC (Japanese Post-Verbal Construction) within the framework of the minimalist program, by claiming that a postverbal phrase is adjoined to an element by External Merge. In Chapter 1, I posed the following two questions:

(1) a. How are postverbal elements licensed?
b. Why does the Japanese postverbal construction display locality effects in some cases?

A licensing condition has been put forth in response to the first question:

(2) The licensing condition for the postverbal element (where X= any syntactic category):
A phrase α adjoined to XP is licensed only if α is associated with β such that
(i) α c-commands β, and
(ii) α is non-distinct from β in terms of Case features and honorific features

To answer the second question, I have proposed/adopted the following four parsing strategies, and concluded that locality effects displayed in rightward movement constructions can follow from the interaction of syntactic principles with such parsing strategies:

(3) Generalised Theta Attachment:
Every principle of the Syntax attempts to be maximally satisfied at every point during processing. (Pritchett (1992: 138))

(4) Unconscious Reanalysis Condition:
It is possible for the human parser to make a syntactic reanalysis only if
(a) The original attachment site α contains the final attachment site β, or
(b) β c-commands α, and every phase (i.e., *v*P, CP) containing α contains β.

(5) Unconscious Reinterpretation Condition
It is impossible for the human parser to associate a syntactic object X with α, if there is β such that α is similar to β and β is closer to X than α is.

(6) Right Association (RA): Terminal symbols optimally associate to the lowest nonterminal node. (Kimball (1973: 24))

Each of the topics of the other chapters is briefly summarised below:

In Chapter 2, I have given cross-linguistic descriptions of rightward movement phenomena observed in six languages; Japanese, English, Dutch, German, Italian, and Turkish. First, I have presented a general description of the JPVC. Then, I have considered three types of constructions in English; Heavy NP Shift (HNPS), Extraposition from NP (EX), and Right Dislocation (RD). Finally, I have briefly described the other languages in the light of the rightward movement constructions. Descriptions in general have been provided in an analysis-neutral manner.

In Chapter 3, I have first presented an outline of the organisation of the grammar as well as some assumptions in the minimalist program, on the basis of which I have developed a syntactic analysis for the JPVC. Then, I have assumed that the parser is a system that can make use of UG principles as well as language particular rules. I have also adopted two parsing strategies: (i) the Generalised Theta Attachment; (ii) the Unconscious Reanalysis Condition (see above).

In Chapter 4, I have first presented a critical review of some of the previous accounts of the JPVC, and concluded that movement analyses are untenable (section 4.2). Based on the assumption that the derivation of the JPVC involves no movement, I have proposed that a postverbal phrase is adjoined to an element by External Merge. Along with the assumption that Japanese null arguments are underspecified, I have claimed that the postverbal phrase is licensed through its association with a relevant element in accordance with the licensing condition which I have proposed (see (2)) (section 4.3). I have further proposed/adopted a couple of independently motivated interface conditions, which make it possible to derive two syntactic properties of JPVCs: (i) the adjunction of postverbal phrases to CP (/TP); (ii) root phenomena (section 4.4).

With respect to locality effects (i.e., (1b)), I have shown that the presence/absence of locality effects in the JPVC follow from the interaction of syntactic principles with the parsing strategies which I have proposed/adopted (see above). I have also argued that the proposed parsing strategies can deal with cases like the preferred reading of scopally ambiguous JPVCs. I have claimed further that the parser should employ a parsing strategy proposed in Kimball (1973) (see (6)) (section 4.5). The results of the experiment have shown that the JPVC displays the effect of linear distance if more elements intervene between a postverbal phrase and a gap/modifiee, whereas the non-JPVC does not show such an effect even if there are

elements intervening between matrix subjects and predicates. I have attempted to provide a tentative explanation for the contrast between JPVCs and non-JPVCs with respect to the length effect by adopting a parsing principle proposed in Hawkins (2004), namely *Minimise Domain* (section 4.6).

In Chapter 5, I have argued that the licensing condition holding true for the JPVC is applicable not only to the English RD construction but also to the English EX construction. I have claimed further that the effects of locality in three types of rightward movement constructions in English including the HNPS construction can follow from the parsing strategies which are independently motivated. Finally, I have proposed that languages fall into three types with respect to the possibility of the HNPS construction:(i) both subjects and objects can appear in postverbal position (e.g. Italian, Japanese, Turkish); (ii) subjects cannot do so (e.g. English); (iii) neither subjects nor objects can appear in postverbal position (e.g. Dutch, German).

Therefore, I have demonstrated that some properties of rightward movement constructions may be derived from syntactic principles and interface conditions, and that properties (i.e., locality effects) which have up to now been dealt with purely in syntax can receive a better account in terms of language processing.

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