

***Information Structure in Japanese:
Scrambling, Topicalization and Passives***

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St Cross College

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A thesis submitted to the University of Oxford

in partial fulfillment of the requirements for the degree of

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Abstract

The main purpose of this thesis is to shed new light on Japanese grammar under the framework of the Givónian approach, with special attention to OSV word orders and by-passives: scrambling ($O_{ACC}SV$), topicalization ($O_{TOP}SV$), *ni*-passive ($S NP_{NI} V$), and *niyotte*-passive ($S NP_{Niyotte} V$). This approach measures the discourse status of a referent by utilizing anaphoric and cataphoric co-referencing relationships within the texts. However, it is conceivable that OSV word orders and by-passives are also influenced by multiple factors other than information structure. Specifically, previous studies point out the possibility that heaviness and animacy are relevant to this issue. Therefore, the present study performs the corpus analysis, taking three factors into consideration: heaviness, animacy, and information structure.

First, OSV word orders have proven to be influenced by information structure and heaviness. In terms of information structure, scrambling correlates ‘topic shift’ from the referent of the scrambled object to that of the subject. In contrast, topicalization interrelates with ‘continuing topic’ realized as the referent of the subject. In terms of heaviness, the direct object tends to be longer than the subject in OSV word orders. Yet, animacy has no influence on the choice of word orders.

Second, by-passives are affected by information structure and animacy. In terms of information structure, the *ni*- and *niyotte*-passives are selected in order to maintain the topic continuity by promoting the topical logical object to the grammatical subject. However, the *ni*-passive is relevant to global topic whereas the *niyotte*-passive is related to local topic. In terms of animacy, the *ni*-passive prefers animate subjects while the *niyotte*-passive tends to select inanimate subjects. Yet, heaviness is unrelated to the use of by-passives in Japanese.

In conclusion, the thesis provides a functional analysis of OSV orders and by-passives from a descriptive and empirical point of view by using a written Japanese corpus. The new data reported contribute to elucidating the argument encoding system of Japanese.

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List of Abbreviations

Abbreviation	Description
ACC	accusative case
ADV	adverb
APP	apposition
AUX	auxiliary
CL	classifier
COMP	complementizer
COMPL	completive aspect
COP	copula
DAT	dative case
EMP	empathy
FP	sentence final particle
FRG	fragment
GEN	genitive case
HON	honorific
IMP	imperative mood
IT	interactional element
LK	linker
LOC	locative case
NOM	nominative case
NONPAST	non-past tense
N. SU	suffix for a name
NEG	negation
NMZ	nominalizer
OBJ	object
PASS	passive morpheme
PAST	past tense
PL	plural
POL	politeness
POT	potential morpheme
PROG	progressive form
PTCL	particle

PURP	purposive
Q	question marker
QT	quotative marker
RD	referential reference
SPON	spontaneous morpheme
SUBJ	subject
TE	<i>te</i> -form
TOP	topic marker
TP	topic persistence

Chapter 1

Introduction

1.1. Research Questions and Objectives

It is a universal property of natural language to have many options for expressing the same proposition. Therefore, speakers must decide not only what to say but also how to say it. In English, for example, all the sentences shown in (1) have the same propositional meaning and thus the speaker needs to select one of them in order to convey his or her intention. Why do languages allow different options to convey the same message? One explanation is that they enable speakers to choose the way information is transmitted to the hearer. In other words, the differences between the constructions is not what is said about the world but the way it is packaged (Chafe 1976; Lambrecht 1996; Vallduví and Engdahl 1996). Chafe (1976: 28) uses ‘the term *packaging* to refer to the kind of phenomena at issue here, with the idea that they have to do primarily with how the message is sent and only secondarily with the message itself, just as the packaging of toothpaste can affect sales in partial independence of the quality of the toothpaste inside’.

In a nutshell, what works here is information structure, which is the structuring of a sentence as a means of communicating information to an addressee in a particular context.

‘Crucial here is the observation that the study of information structure is not concerned with lexical and propositional content in abstract but with the way such content is transmitted’ (Lambrecht 1996: 3).

- (1) a. All of these pots are sitting in the tank.
- b. In the tank are sitting all of these pots.
- c. There are all of these pots sitting in the tank.
- d. In the tank there are sitting all of these pots.
- e. There are sitting in the tank all of these pots.
- f. In the tank all of these pots are sitting.
- g. All of these pots, they’re sitting in the tank.
- h. These pots, they’re all sitting in the tank.
- i. In the tank, that’s where all of these pots are sitting.
- j. It’s in the tank that all of these pots are sitting.
- k. It’s in the tank that are sitting all of these pots.
- l. It’s all of these pots that are sitting in the tank.
- m. Where all of these pots are sitting is in the tank.
- n. In the tank is where all of these pots are sitting.

- o. What is sitting in the tank are all of these pots.
- p. All of these pots are what is sitting in the tank.
- q. It's where all of these pots are sitting, in the tank.
- r. They are what is sitting in the tank, all of these pots.

(Birner 2004: 44)

What I should note here is that the constructions are not randomly selected. It has been proposed that the usage of particular structural options is constrained by specific aspects of the context of utterance. In particular, numerous studies have demonstrated since Prague School that the linear order of constituents is at least to some extent determined by notions having to do with what is contextually known and what is not. In other words, there is a general consensus that many languages show a tendency to order 'given' information before 'new' information. In English, for example, Birner (2004) has revealed that single preposed arguments must be given information.

- (2) [Context: "In early days, our productions were cheap and cheerful," says producer John Weaver of London-based Keefco. "We'd go into a seven-light studio, shoot the band in one afternoon and edit as we went along. The client would walk out

with a tape that day.”]

- a. Today’s tapes may still be cheerful, but *cheap they are not*.
- b. Today’s tapes may still be cheerful, but *#commonly available they are not*.

(Birner 2004: 49)

In (2a), the single preposed constituent *cheap* is given information because it has been evoked in the immediately preceding context. It should be noted that the acceptability relies on whether a single preposed constituent is given information or new information. Therefore, if new information were placed in a preposed position, the sentence would be unacceptable. In (2b), the preposed phrase *commonly available* is new information, which has no direct link with the preceding discourse. This is why the sentence *commonly available they are not* as a whole is unacceptable¹. Preposed constituents must be given information².

¹ There is a contrastive relationship between “in early days” and “today”. Since two properties, ‘cheerful’ and ‘cheap’, are mentioned in ‘in early days’, readers predict that they are also referred to in ‘today’. However, in ‘today’, the predicate ‘cheap’ is removed and only ‘cheerful’ is made reference to. This may be the reason why (2) is awkward.

² It has been demonstrated that inferable information behaves like given information (Birner 2004; Birner and Ward 2006; Ward and Prince 1991). In (i), for example, *this song* can be inferred from *this album* because it is a part of the album. This inference licenses preposing *this song* because inferred information can be regarded as discourse old information in single preposing construction.

- (i) A: You know this album?
B: This song I know.

(Ward and Prince 1991: 172)

As is well known, however, different languages have different ways of marking given and new information in discourse. The reason for this is that the mapping between form and pragmatic meaning is not so much universal as language specific, depending on the means which a language provides for indicating discourse functions. Every language differs from each other in terms of how information is packaged because it has its own grammatical devices. Therefore, it is mandatory to investigate the interactions among informationally driven constructions within one language in order that we can deepen our understanding of the usages of each construction. It should be noted here that the mapping between information structure and syntactic structure is unclear in Japanese. How is the Japanese language packaged in terms of information structure? The aim of the present study is to reveal the packaging of the Japanese language, focusing on word orders and by-passives. In order to disentangle this issue, I will follow Lambrecht's (1994: 6) observation that 'information-structure analysis is centered on the comparison of semantically equivalent but formally and pragmatically divergent sentence pairs, such as active vs. passive, canonical vs. topicalized, canonical vs. clefted or dislocated, subject-accented vs. predicated-accented sentences, etc'. This approach is effective because the very same semantically-defined transitive proposition coded by the same participants and verbs are rendered from more than one perspective in (3) through word order changes and

passivization. Note that the meaning of a transitive sentence like (3a) can be conveyed in various ways as shown in (3b-i). By comparing one option with the others, the use of word order changes and passivization will be measured with precision in terms of information structure. In doing so, I will utilize a large-sized corpus of contemporary written Japanese. The written Japanese corpus is a database of naturally occurring written materials in Japanese.

(3) a. Taro-ga Jiro-o oshi-ta Canonical Word order [S_{NOM} O_{ACC} V].

Taro-NOM Jiro-ACC push-PAST

‘Taro pushed Jiro.’

b. Jiro-o Taro-ga oshi-ta Scrambling [O_{ACC} S_{NOM} V]

Jiro-ACC Taro-NOM push-PAST

‘Taro pushed Jiro.’

c. Jiro-wa Taro-ga oshi-ta Topicalization [O_{TOP} S_{NOM} V]

Jiro-TOP Taro-NOM push-PAST

‘Speaking of Jiro, Taro pushed him.’

d. Jiro-ga Taro-ni os-are-ta. *Ni*-passive [S_{NOM} NP-ni V]

Jiro-NOM Taro-by push-PAST

‘Jiro was pushed by Taro.’

e. Jiro-ga Taro-niyotte os-are-ta. *Niyotte*-passive [_{S_{NOM}} NP-niyotte V]

Jiro-NOM Taro-by push-PAST

‘Jiro was pushed by Taro.’

f. Jiro-o oshi-ta-nda Taro-ga Subject Postposing [_{O_{ACC}} V _{S_{NOM}}]

Jiro-ACC push-PAST-COP Taro-NOM

‘Taro pushed Jiro.’

g. Taro-ga oshi-ta-nda Jiro-o Object Postposing [_{S_{NOM}} V _{O_{ACC}}]

Taro-NOM push-PAST-COP Jiro-ACC

‘Taro pushed Jiro.’

h. Ø Jiro-o oshi-ta. Zero Subject [_{pro} _{O_{ACC}} V]

(he) Jiro-ACC push-PAST

‘(He) pushed Jiro.’

i. Taro-ga Ø oshi-ta. Zero Object [_{S_{NOM}} _{pro} V]

Taro-NOM (him) push-PAST

‘Taro pushed (him).’

Why is corpus analysis selected for my study instead of an introspective approach?

There are two main reasons for this. One reason is the fact that pragmatic principles are normally proposed as general tendencies and not as predictive principles in recent studies (Jucker and Taavitsainen 2013: 5). For example, Isoe (1992: 81) observed that the topic marker *WA* correlates with the contrastive subject in Japanese. However, not all examples can be explained by contrastiveness. There seems to be a strong correlation between *WA*-marked referents and contrastive meaning, but there are many exceptions to this tendency. In addition, contrastiveness itself can be expressed by the nominative case marker *GA*. In fact, contrastive subjects are marked by both the topic marker *WA* (88.89%) and the nominative case marker *GA* (11.11%). To wit, not all contrastive subjects can be accounted for by the topic marker *WA*, and vice versa. Pragmatic constraints are just a tendency, not an absolute rule. To propose a pragmatic constraint means to deepen the understanding of the general tendency of a certain grammatical option. To this end, corpus analysis is a desirable choice. The reason for this is that we can observe some tendencies on the basis of quantitative data. By using a corpus, we can confirm easily whether a certain proposal is valid or not to explain the tendency of a grammatical option. In order to check the validity of a pragmatic proposal, all we have to do is count the number of examples for which that proposal can be applied. Since my purpose is to propose some pragmatic constraints from a view point of information structure in order to account for

the usages of several constructions in Japanese, the corpus is a good tool for my research.

The other reason why I select the corpus analysis is that introspective approaches are in essence subjective whereas corpus analyses are objective and can provide empirical evidence. Since Kuno (1978), it has been proposed that word orders in Japanese are determined by given-new ordering. Following this presupposition, the direct object in OSV is supposed to be given information as shown in (4b). It should be noticed that Japanese is an SOV order language but allows OSV order sentences. Since the direct object is moved toward the sentence-initial position, it is considered to be scrambled (to see section 4.2.1. for more detail). Hence, (4b, d) are scrambled word order sentences whereas (4a, c) are canonical word order sentences. In (4b), the scrambled object *hon* ‘book’ is modified by the demonstrative *sono* ‘that’. Generally speaking, demonstratives refer to a referent in the preceding discourse. Therefore, the scrambled object in (4b) is considered to be given information. However, scrambling can be applied to new information as shown in (4d). It should be noted that the scrambled object *nani* ‘what’ is a *wh*-phrase, which expresses new information. This example clearly shows that scrambled objects are not necessarily given information. It should be noticed that (4d) does not include a *wh*-movement. As exemplified in (4a, c), *wh*-phrases can stay in their in-situ positions. In Japanese, the question marker *KA* or *NO* expresses the scope of a *wh*-

phrase and thus the *wh*-phrase does not have to be moved toward the clause boundary. In (4e), for example, the question marker *KA* attached to *kau* ‘buy’ clearly shows that the scope of the *wh*-phrase *nani* ‘what’ is within the subordinate clause. In contrast, in (4f), since the question marker *KA* is adhered to the verb in the main clause, *omou* ‘think’, the scope of the interrogative meaning is beyond the subordinate clause. The contrast between (4c) and (4d) clearly indicates that there is no *wh*-movement in Modern Japanese³. Thus, (4c) is a clear example of scrambling, but the scrambled object is new information. Since the introspective approach does not take frequency into account, it cannot judge whether there is a strong correlation between scrambling and givenness. It is necessary to examine if scrambling is greatly influenced by givenness or not, by using a corpus data.

- (4) a. Taro-ga sono-hon-o yon-da.
 Taro-NOM That-book-ACC read-PAST
 ‘Taro read that book.’
- b. sono-hon-o Taro-ga yon-da.
 That-book-ACC Taro-NOM read-PAST
 ‘Taro read that book.’

³ Watanabe (2002) claims that overt *wh*-movement existed in Old Japanese.

c. Taro-wa nani-o kat-ta-no?

Taro-TOP what-ACC buy-PAST-Q

‘What did Taro buy?’

d. nani-o Taro-wa kat-ta-no?

what-ACC Taro-TOP buy-PAST-Q

‘What did Taro buy?’

e. boku-wa [kare-ga nani-o kat-ta-ka] wakara-nai

I-TOP he-NOM what-ACC buy-PAST-Q know-NEG

‘I don’t know what he bought.’

f. [Taro-wa Jiro-ga kaet-ta-to nande omot-tan-desu-ka]?

Taro-TOP Jiro-NOM get.home-PAST-that why think-PAST-HON-Q

‘Why did Taro think that Jiro got home?’

Incidentally, why are there many exceptions to a pragmatic constraint? One explanation is that grammatical options are affected by many factors other than a certain pragmatic constraint. For example, it has been shown that scrambling is influenced not only by givenness (Imamura 2014, 2015a, 2016a, b; Imamura, Sato, and Koizumi 2014, 2016; Ishii 2001; Koizumi and Imamura 2016; Kuno 1978, 1995; Masunaga 1983; Suzuki

2000) but also by heaviness (Hawkins 1994; Imamura 2014, 2015a; Kondo and Yamashita 2011; Suzuki 2000; Yamashita 2002; Yamashita and Chang 2001). Thus, some examples are supposed to correlate with givenness, and the others are considered to be interrelated with heaviness. It has been recognized in Japanese that scrambling not only marks the discourse status of its constituent, but also at the same time it facilitates processing by placing the long constituent toward the beginning of the sentence. However, both givenness and heaviness cannot explain all the scrambled examples completely. As mentioned before, many factors are related to a single grammatical option. For example, the sentence (5b) would be unacceptable if the direct object were not moved toward the sentence-initial position, as shown in (5a). Pronominal coreference between *John* and *kare* ‘he’ cannot be obtained without fronting the direct object to the sentence-initial position⁴. In order to meet the syntactic requirement, the direct object in (5b) is scrambled. In other words, the syntactic motivation takes precedence over other pragmatic motivations in (5). To summarize the above discussion, the usage of a grammatical option is determined by many factors, some of which have strong effects and the others have weak effects on the choice of that option. This is why only one constraint cannot explain

⁴ Within the framework of Binding Theory, a pronoun cannot c-command its antecedent. In (5a), the pronoun *kare* ‘he’ c-commands its antecedent *John*. This is why (5a) is unacceptable.

all the examples of a certain grammatical option.

- (5) a. * kare-ga [NP Mary-ga John_i-ni okut-ta tegami]-o
he-NOM Mary-NOM John-DAT send-PAST letter-ACC
mada yondeinai.
yet have.not.read

‘*He_i has not read the letter which Mary had sent to John_i.’

- b. [NP Mary-ga John_i-ni okut-ta tegami]-o
Mary-NOM John-DAT send-PAST letter-ACC
kare-ga mada yondeinai.
he-NOM yet have.not.read

‘Lit. The letter which Mary had sent to John_i, he_i has not read.’

(Saito 1985: 39-40)

Next, let us go back to the scope of this research. As shown in (3), there are many ways to express the propositional meaning of a transitive sentence. In this study, I will focus on scrambling, topicalization, and by-passives. Although by-passives can scramble their by-phrases as illustrated in (6b), such examples are outside of my analysis. This is

because it is difficult to distinguish the effects of passivization from those of scrambling without knowing their functions. For example, if scrambling has a function X and passivization offsets it, we will not be able to observe the function X from (6b). Therefore, what we should do first is identify the main discourse functions of both scrambling and passives. After that, we should study the interactions between scrambling and passives.

(6) a. Canonical Word Order

Jiro-ga Taro-niyotte os-are-ta.

Jiro-NOM Taro-by push-PAST

‘Jiro was pushed by Taro.’

b. Scrambled Word Order

Taro-niyotte Jiro-ga os-are-ta.

Taro-by Jiro-NOM push-PAST

‘Jiro was pushed by Taro.’

The reason why scrambling, topicalization, and by-passives are chosen is that detailed study into the functions of these constructions under the framework of Givón (1983, 1988, 1990, 1994) is lacking. The details of the Givónian approach will be

formally accounted for in later chapters (see section 2.3). In contrast, numerous studies have explored well the usages of postposing as shown in (3f, g) and zero pronouns as shown in (3h, i) on the basis of the Givónian approach (Hinds 1978, 1982, 1983; Hinds and Hinds 1979; Shimojo 1995, 2005, 2006). Therefore, zero pronouns and postposing are excluded from my analysis. Instead of analyzing them directly, I will make use of the knowledge so far accumulated from previous studies in order to examine the relationships among each construction. Thus, the present corpus analysis concentrates on only scrambling, topicalization, and by-passives. By doing a quantitative analysis in terms of information structure, I will reveal the functions of these constructions in an objective, straightforward manner.

Yet, it is conceivable that word order changes and passivization are affected by factors other than information structure. Indeed, Imamura (2015a) points out the possibility that scrambling in Japanese correlates with not only givenness but also with heaviness. In the same fashion, it has been demonstrated that the choice of word orders is influenced by givenness, heaviness, and animacy (Arnold et al. 2000; Bresnan et al. 2007; Gries 2003; Heidinger 2013; Imamura 2014, 2015a; Kizach and Balling 2013; Rosenbach 2005; Siewierska 1993; Tanaka et al. 2011; Wasow and Arnold 2003). Furthermore, by-passives are expected to be influenced not only by information structure but also by

animacy (Hoshi 1991, 1994, 1999; Inoue 1976; Imamura, Helgason, and Koizumi 2013; Iwasaki 2002; Kuno 1986, 1990; Kuroda 1979; Muraki 1991; Takami 2011; Yamaguchi 2001). Therefore, it is reasonable to take multiple factors into consideration in order to account for the use of scrambling, topicalization, and by-passives in Japanese. An important aspect of the present study is that it takes three factors into account: information structure, heaviness, and animacy. By calculating the strength of each factor, the usages of word order changes and by-passives will be measured precisely.

In sum, the main goal of this dissertation is to explore the usages of scrambling, topicalization, and by-passives in Japanese, focusing on information structure, heaviness, and animacy. In order to assess the discourse status of referents, the Givónian approach is utilized. Word order changes and passives are chosen mainly because no study has investigated their functional aspects from a view point of the Givónian approach. Given that they are to express some specific meaning, what kind of pragmatic meaning do they have? Furthermore, not only information structure but also heaviness and animacy are considered to be related to the use of word order changes and passivization. However, it is unclear how these three factors interact with each other with regard to the usage of scrambling, topicalization, and by-passives. Previous studies are not enough to disentangle these issues because they are largely dependent on introspection and are in

that sense subjective. Thus, I will deal with this problem by using a corpus analysis and a quantitative approach. This is intended to obtain objective data. An examination of naturally-occurring data on the basis of the frequency discloses the hidden tendency of word order changes and passives in Japanese, not an absolute constraint.

1.2. Organization of the Dissertation

The present thesis is organized as follows. Chapter 2 sets out theoretical background to understand the subsequent sections. Section 2.2 overviews the grammatical properties of Japanese transitive sentences. Japanese has plenty of grammatical tools to express information structure: scrambling, particles, zero pronouns, passives, and postposing. Each of them can express the same propositional meaning. Specifically, the propositional meaning of a simple transitive sentence can be transmitted by the combination of each option. Thus, this section centers on these grammatical operations. Section 2.3 is devoted to account for the Givónian approach, which was formulated by a series of works by Givón (1983, 1988; 1990; 1994) and is one of the quantitative approaches. This section explains why Givónian approach is selected and what it is, and introduces two important concepts, Referential Distance (RD) and Topic Persistence (TP). Note that RD reflects anaphoric saliency and TP correlates with cataphoric saliency on the basis of co-

referencing in texts.

Chapter 3 lays out the methodological foundations applied for the analyses presented in the chapters 4, 5, 6, and 7. Section 3.2 gives an explanation of the balanced corpus of contemporary written Japanese and the web interface program to extract actual examples. Section 3.3 provides the explanation of search procedure to assemble relevant data. In particular, a large part of this section is devoted to the criteria of RD and TP. Section 3.4 provides an account of the search procedures for calculating heaviness. Specifically, I shall develop an account of why heaviness should be measured in terms of morae in Japanese. Section 3.5 concentrates on the search procedures for calculating animacy. In particular, I shall offer a binary classification of animacy.

Chapter 4 provides a corpus analysis of scrambling and topicalization from the view point of the Givónian approach. There is a general consensus that marked options are more strictly constrained by discourse contexts than unmarked options (Aissen 1992; Imamura, Sato, and Koizumi 2014, 2016; Kuno 1987, 1995; Koizumi and Imamura 2016; Koizumi et al. 2014). Since word order changes are marked options, they are considered to require specific contexts. However, it is unclear what kind of meaning word order changes have. In order to solve this issue, the corpus analysis of scrambling and topicalization is presented here. In this chapter, I suggest that scrambling predicts ‘topic

shift' from the referent of the scrambled object to that of the subject whereas topicalization anticipates 'continuing topic' as the referent of object. Furthermore, I propose that word order changes are applicable only to intermediately accessible referents in Japanese.

Chapter 5 reports the corpus findings about the use of scrambling and topicalization in terms of heaviness and animacy. The first finding is that OSV correlates with the 'relative heaviness' between the subject and the object. Specifically, it has been observed that the direct object tends to be much longer than the subject in OSV. The second finding is that animacy has no observable effects on the usage of OSV. To put it other way, there is a correlation between animacy and grammatical functions. Therefore, it seems reasonable to conclude that the choice of word orders is pertinent to givenness and heaviness.

Chapter 6 turns to the corpus analysis of the *ni*- and *niyotte*-passives under the framework of the Givónian approach. On the basis of the empirical findings, I conclude that both *ni*-passives and *niyotte*-passives are selected in order to maintain the topic continuity by promoting the topical logical object to the grammatical subject. With regard to the functional differences, I propose that the *ni*-passive is germane to global topic while the *niyotte*-passive is pertinent to local topic.

Chapter 7 provides the corpus analysis of the two by-passives in terms of heaviness

and animacy. The results of the analysis have revealed that animacy contributes to the distinction between the *ni*-passive and the *niyotte*-passive. To be more concrete, the *ni*-passive tends to select the animate subject whereas the *niyotte*-passive is likely to take the inanimate subject. On the other hand, heaviness has proven to be unrelated to the usage of by-passives in Japanese.

Chapter 8 discusses the argument encoding system of Japanese in terms of information structure, heaviness, and animacy. Based on the empirical findings, I shall argue that scrambling and topicalization are relevant to anaphoric saliency, cataphoric saliency, and heaviness. In addition, I shall propose that the use of by-passives is related to anaphoric saliency, cataphoric saliency, and animacy. In this chapter, I conclude that the choice of word order changes and by-passives are determined by multiple factors: anaphoric saliency, cataphoric saliency, heaviness, and animacy.

Chapter 9 draws a conclusion about the usage of scrambling, topicalization, and by-passives. Moreover, I point out several shortcomings concerning this study. First, the proposals count on written Japanese. Thus, it is not clear whether they also hold of spoken Japanese. Second, the present study focuses only on limited particles and constructions. In particular, I emphasize the importance of taking the cleft into consideration. Additionally, I point out other minor drawbacks of the present study.

What I shall aim to achieve in the following chapters is to explore the functional aspects of scrambling, topicalization, and by-passives in terms of information structure, heaviness, and animacy. To be more concrete, the present study makes an attempt to capture the general tendencies on the basis of the frequencies. Before addressing this issue, the next chapter provides a theoretical grounding of the thesis.

Chapter 2

Theoretical Preliminaries

2.1. Overview

This chapter first lays out the structural and functional properties of Japanese and the processes by which the meaning of a simple transitive predication can be conveyed by various ways in Japanese, focusing on preposing, particles, zero pronouns, post posing, and passives. It should be noted that not only structural approaches but also functional approaches are taken into consideration. According to Halliday (1973: 7), the definition of ‘a functional approach to language means, first of all, investigating how language is used: trying to find out what are the purposes that language serves for us, and how we are able to achieve these purposes through speaking and listening, reading and writing. But it also means more than this. It means seeking to explain the nature of language in functional terms: seeing whether language itself has been shaped by use, and if so, in what ways- how the form of language has been determined by the function it has evolved to serve’. Additionally, the framework proposed by Givón (1977, 1978, 1979, 1983, 1988, 1990, 1993, 1994, 2001) is presented. There are two important concepts in the Givónian

approach: Referential Distance (RD) and Topic Persistence (TP). This chapter expands on the characteristics of both concepts and explains *what* is the Givónian approach and *why* this approach is adopted for the present study.

2.2. Structural Properties of Japanese

2.2.1. Preposing

First of all, Japanese is a head-final language, where the head almost always comes after its complement. Since the head determines the nature of phrases, (1a) as a whole is a postpositional phrase. This is because a postposition *kara* ‘from’ comes just after its complement *Tokyo*. Likewise, (1b) as a whole is a verb phrase because the verb *shimeru* ‘close’ is placed after the direct object *door*. Note that there is a structural mirror relationship between Japanese and English as shown in the word-for-word translation. This is because Japanese is a head-final language whereas English is a head-initial language.

(1) a. [PP Tokyo-kara]

Tokyo-from

‘from Tokyo’

b. [vp door-o shimeru]

door-ACC close

‘close the door’

As is predicted from the fact that Japanese is a head-final language, its basic word order for simple transitive sentences is SOV order. Yet, it allows not only SOV order but also OSV order because it is a relatively free word order language. In consequence, both SOV and OSV orders are acceptable, as in (2). It should be noticed that grammatical functions such as the subject and the object are morphologically marked by post particles such as the nominative case marker *GA* and the accusative case marker *O*. In some inflecting languages such as Japanese and Korean, where syntactic and semantic functions are indicated by a rich morphological system, subject, object, and verb can change positions without affecting grammatical relations between constituents. Based on the morphologically marked case information, namely the nominative case marker *GA* and the accusative case marker *O*, native Japanese speakers can interpret OSV order appropriately.

(2) a. SOV

Taro-ga hon-o yon-da.

Taro-NOM book-ACC read-PAST

‘Taro read a book.’

b. OSV

hon-o Taro-ga yon-da.

book-ACC Taro-NOM read-PAST

‘Taro read a book.’

The word order change from the canonical sentence such as SOV to the non-canonical sentence such as OSV is called ‘scrambling’. It should be noted that scrambling refers to the pre-predicative mutation of the canonical word order. Thus, the word order change from SOV to SVO is not scrambling. In 1980s, Saito (1985), Kuroda (1988), and Fukui (1986) stated that scrambling is a semantically vacuous operation because there is no structural difference among grammatical functions such as subjects and objects. However, word order changes are not random. Although there is no difference in propositional meaning between SOV and OSV, ‘free’ word orders are really pragmatically driven word orders. In fact, ‘free’ word order languages are syntactically free but pragmatically rigid word order languages. They are constrained by information structure.

For example, Kiss (1981) observed that Hungarian word orders are determined by pragmatic factors such as topic and focus. In Hungarian, a topic phrase always comes before a focus phrase. However, Hungarian word orders are syntactically free as shown in (3). There is no rigid position for subject, object, adverb, and even for verb. Any combination of subject, object, verb, and adverb can be grammatical if it follows pragmatic constraints.

(3) Hungarian Word Order Patterns

- a. SUBJ OBJ V ADV
- b. SUBJ V OBJ ADV
- c. OBJ SUBJ V ADV
- d. ADV SUBJ OBJ V
- e. V SUBJ OBJ ADV, etc

(Kiss 1981: 186)

Hungarian is a structurally free but pragmatically rigid word order language. In (4), for instance, *János* must follow *Marit* because *János* is focus and *Marit* is topic. The focusing effect of *János* is caused by a focus particle *cak* ‘only’, which modifies *János*.

On the other hand, it does not matter whether the subject precedes the object or not.

Structural information does not influence the choice of word orders.

(4) [T Marit] [F csak János] szereti.

Mary.ACC only John loves

‘Only John loves Mary.’

(Kiss 1981: 194)

If a sentence violates a syntactic constraint, it will be ungrammatical as shown in (5). In (5), the negation *nem* ‘not’ modifies *János* and then *Marit* follows them. The place of *János* indicates that it belongs to a topic projection because it is followed by another NP, but it is modified by the focus operator *nem*. In other words, the word order of (5) shows that *János* is topic but the existence of *nem* indicates that *János* is focus. This contradiction leads to the ungrammaticality of (5). Topicalization of constituents supplied with a focusing operator must be ruled out in Hungarian.

(5) *[T Nem János] [F Marit] szereti.

not John Mary.ACC love

‘It is Mary whom not John loves.’

(Kiss 1981: 195)

Back to Japanese, it has been reported that givenness has a strong influence on word order changes (Imamura 2014, 2015a, 2016a; b; Imamura, Sato, and Koizumi 2014, 2016; Ishii 2001; Koizumi and Imamura 2016; Kuno 1978; Masunaga 1983; Suzuki 2000). In an OSV sentence (6b), for example, the preposed object *kono jimusho* ‘this correspondence office’ has its antecedent realized as *renraku jimusho* ‘correspondence office’ in the immediately preceding sentence (6a). The preposed object is given information in (6b) in the sense that it was once mentioned in the previous discourse. This example clearly indicates that there is a correlation between givenness and preposed constituents; preposed elements tend to be given information in Japanese.

- (6) a. Kim-to Liza-wa Paris-no jibun-tachi-no apāto-o
Kim-and Liza-TOP Paris-GEN self-PL-GEN apartment-ACC
kyōwaha-no renraku-jimusho-toshite kaihōshi-ta.
republican.faction-GEN correspondence-office-as open-PAST

‘Kim and Lisa opened their apartment in Paris as a correspondence office of the

Republican faction.’

b. kono jumusho-o kyōwaha-o shiensuru ooku-no
this office-ACC republican.faction-ACC support many-GEN
hitobito-ga otozureru-ga,
people-NOM visit-but

‘Many people who supported the Republican faction visited this office’

c. sono naka-ni-wa wakaki hi-no Ernest Hemingway-no
that among-in-TOP young day-of Ernest Hemingway-GEN
sugata-mo at-ta.
figure-also be-PAST

‘Among them, there was also a figure of Ernest Hemingway in his younger days.’

(Suzuki 2000: 92)

In the same vein, Masunaga (1983) observed that indefinite direct objects cannot be preposed, as shown in (7). In (7a), the preposed object, *hitori-no onnnanohito* ‘a woman’, is indefinite and thus has no antecedent in the preceding discourse. In contrast, the acceptability of (7a) is improved if the preposed referent is replaced by a definite one, as shown in (7b). In (7b), the preposed object *sono onnnanohito* ‘that woman’ is linked with

the preceding discourse via the demonstrative *sono*. Note that *sono* requires its antecedent because it is an anaphoric expression. Thus, *sono onnnanoko* has already been referred to in the preceding contexts. Taken together, it has been shown that givenness is the first factor that determines the choice of word orders because preposed elements tend to be given information. Kuno (1978: 54) supports this view by proposing ‘Information Flow Principle: In principle, words in a sentence are arranged in such a way that those that represent old, predictable information come first, and those that represent new, unpredictable information last’¹. Applying this principle to preposing, preposed elements are considered to be older than non-preposed ones in general.

(7) a. ??hitori-no onnanohito-o Taro-ga nagut-ta.

one-GEN woman-ACC Taro-NOM hit-PAST

‘Taro hit a woman.’

b. sono onnnanohito-o Taro-ga nagut-ta.

that woman-ACC Taro-NOM hit-PAST

‘Taro hit that woman.’

¹ Kuno (1995: 222) reformulated this principle as ‘Flow of Information Principle: Elements in a sentence that does not contain emphatic stress or morphologically marked focus elements are ordinarily arranged in the order less important information first and more important information last.’

(Masunaga 1983: 456-7)

The second factor that influences the choice of word orders is heaviness. Heaviness can be defined as the weight of a noun phrase. Generally speaking, the longer a noun phrase is, the heavier it is. Thus, long noun phrases are normally heavier than shorter ones. In Japanese, it has been reported that there is a general preference for the longer element to precede the shorter one (Dryer 1980; Howkins 1994; Imamura 2014, 2015a; Kondo and Yamashita 2011; Saeki 1960; Suzuki 2000; Yamashita 2002; Yamashita and Chang 2001). In other words, there is a ‘long-before-short’ preference in Japanese. For example, the preposed object, *katsute Franky Sakai-ga netsuenshite kōhyō-o hakuhsita* ‘*watashi-wa kai-ni naritai*’ ‘I want to become a shellfish’ of which Franky Sakai once gave an ardent performance and received favorable comments’, is much longer than the subject, *Tokoro George*². In fact, the head of the preposed object is modified by a long relative clause, even though *watashi-wa kaini naritai* itself is longer than the subject. This examples clearly indicates that preposing correlates with heaviness; the longer constituent tends to come before the shorter one.

² ‘*Watashi-wa kaini naritai*’ is a name of a TV program which was created in 1958.

- (8) katsute Franky Sakai-ga netsuenshite,
 once Franky Sakai-NOM give.an.ardent.performance
 kōhyō-o hakuhsita ‘watashi-wa kai-ni
 favorable.comment-ACC received I-TOP shellfish-into
 naritai’-o Tokoro George-ga enjite, futatabi
 want.to.become-ACC Tokoro George-NOM perform again
 ‘watashi-wa kai-ni naritai’-ga terebi-de hōsōsareta.
 I-TOP shellfish-into want.to.become-NOM TV-on was.broadcasted
 ‘George Tokoro performed ‘I want to become a shellfish’, of which Franky Sakai
 once gave an ardent performance and received favorable comments, and ‘I want to
 become a shellfish’ was broadcast on television again.’

(Suzuki 2000: 66)

The third factor that is associated with the choice of word order is animacy. Tanaka et al. (2011) performed a sentence production experiment in order to investigate the relationship among word order, animacy, and grammatical function. In their experiment, participants were asked to remember the presented sentences and reproduce them orally as accurately as possible. As a result, Tanaka et al. observed that OSV tended to be

recalled as SOV if this resulted in animate-inanimate order. In other words, OSV sentences were changed into SOV so that the animate noun came before the inanimate noun. Participants were liable to recall $O_{\text{INANIMATE}}S_{\text{ANIMATE}}V$ sentences such as (9a) as $S_{\text{ANIMATE}}O_{\text{INANIMATE}}V$ sentences such as (9b). This fact suggests that the choice of word orders is influenced by animacy.

(9) a. Inanimate-first, OSV

minatode,	bōto-o	ryōshi-ga	hakon-da.
harbour-LOC	boat-ACC	fisherman-NOM	carry-PAST

‘In the harbour, the boat, the fisherman carried.’

b. Animate-first, SOV

minatode,	ryōshi-ga	bōto-o	hakon-da.
harbour-LOC	fisherman-NOM	boat-ACC	carry-PAST

‘In the harbour, the boat, the fisherman carried.’

(adapted from Tanaka et al. 2011: 322)

The fourth factor that affects the choice of word orders is idiomatic connections between predicates and arguments. As observed by Miyagawa and Tsujioka (2004), some

direct objects form idiomatic expressions together with predicates. Let us have a close look at (10). In (10a), the dative object *te* ‘hand’ and the predicate *ireru* ‘put in’ forms an idiomatic meaning *te-ni-ireru* ‘acquire’. The reversed word order (10b) leads to disappearance of the idiomatic meaning *te-ni-ireru* ‘acquire’. There is a certain correlation between word order and idiomatic meaning. In order to convey the idiomatic meaning in (10), the speaker/writer has to select the S-DO-IO-V order, not the S-IO-DO-V order.

(adapted from Miyagawa and Tsujioka 2004: 21)

where they determine the choice of word orders. In (11a), the anaphor *otagai* ‘each other’ is not bound by its antecedent *karera* ‘they’ and hence (11a) violates Binding Condition A: an anaphor must be locally bound by its antecedent. Therefore, the direct object *karera* must move to the sentence-initial position in order to meet Binding Condition A, as shown in (11b). Preposing is an obligatorily operation here due to the syntactic reason.

- (11) a. ?*Masao-ga otagai_i-no sensei-ni karera_i-o
 Masao-NOM each.other-GEN teacher-DAT they-ACC
 shōkaishi-ta (koto)
 introduce-PAST fact
 ‘Masao introduced them_i to each other’s_i teacher.’
- b. karera_i-o Masao-ga otagai_i-no sensei-ni
 they-ACC Masao-NOM each.other-GEN teacher-DAT
 _{t_i} shōkaishi-ta (koto)
 trace introduce-PAST fact
 ‘Them_i, Masao introduced _{t_i} to each other’s_i teachers.’

(Saito 1992: 74-5)

To summarize the above discussion, Japanese is an SOV order language, but it also permits an OSV order because it is a syntactically relatively free word order language. Yet, the choice of word orders is not free at all. Rather, it is restricted by multiple factors such as givenness, heaviness, animacy, idiomaticity, and syntactic constraints. Among them, this study concentrates on the effects of givenness, heaviness, and animacy because the scope of other factors is very limited. For example, idiomaticity has an impact only on specific verbs and arguments. The chapter 4 investigates the interactions between word orders and discourse contexts in simple transitive sentences in Japanese. Chapter 5 focusses on the effects of heaviness and animacy on word orders.

2.2.2. Particles

In terms of syntactic aspects, Japanese has plenty of particles, which are postpositional words attached mainly to noun phrases (Iwasaki 2002: 44). They provide many kinds of syntactic, semantic, and pragmatic information. In particular, case particles provide information about grammatical relations between noun phrases and the predicate. They include the nominative case marker *GA*³, the accusative case marker *O*, the dative case

³ Ono, Thompson, and Suzuki (2000) claim that the particle *GA* is not so much a case particle as a pragmatic particle. This is because they have observed the mismatch between subjecthood and *GA*-marking. According to their analysis, the pragmatic particle *GA* is used to mark an NP as a participant in the state-of-affairs named by the predicate in the discourse context. In the same way, a case particle *O* may be defined as a pragmatic

marker *NI*, locative or instrumental case particle *DE*, the ablative case particle *KARA* or *YORI*, the allative case particle *E* or *Made*, and the genitive case particle *NO*. Though the genitive case *NO* specifies the relationship between two noun phrases instead of providing the information about the relationship between a noun phrase and the predicate, it belongs to the category of case particles in Japanese grammar. In (12), the nominative case marker *GA* is used for marking the subject *Taro*, the accusative case marker *O* is selected for marking the direct object *kekonyubiwa* ‘wedding ring’, and the dative case marker *NI* is chosen for marking the indirect object *Hanako*. It should be noted that the direct object is marked by *O* and the indirect object is marked by *NI*. Japanese distinguishes the direct object from the indirect object by making use of case particles. The genitive case *NO* establishes a link between *kanojo* ‘she’ and *ie* ‘house’. Due to this particle, native Japanese speakers can comprehend that *ie* is possessed by *kanojo*. The genitive case *NO* makes it clear that the second NP is owned by the first NP. Moreover, *kanojo no ie* ‘her house’ as a whole is marked by the locative case *DE*. Pay heed to the fact that *DE* is attached to *kanojo no ie* as a whole.

particle. However, in this study, I accept the traditional view that *GA* is the nominative case marker and *O* is the accusative case marker. Since this study deals with SOV and OSV orders in terms of grammatical functions, it does not matter whether *GA* and *O* are pragmatic particles or not.

(12) Taro-ga kekkonyubiwa-o Hanako-ni kanojo-no

Taro-NOM wedding.ring-ACC Hanako-DAT she-GEN

ie-de watashi-ta.

house-LOC pass-PAST

‘Taro passed a wedding ring to Mary at her house.’

In (13), there is a semantic link between *KARA* ‘from’ and *MADE* ‘to’ in Japanese like ‘from X to Y’ in English. The usages of *GA*, *NO*, and *O* are not so different from (12) in the sense that *GA* marks the subject, *NO* links the reflexive pronoun *jibun* ‘self’ and *musume* ‘daughter’, and *O* marks the direct object. Anyway, native Japanese speakers utilize case information expressed by the case particles in order to parse Japanese sentences appropriately.

(13) Ken-ga jibun-no-musume-o ie-kara eki-made okut-ta.

Ken-NOM self-GEN-daughter-ACC house-from station-to send-PAST

‘Ken saw his daughter from his house to the station.’

However, there are cases where case information is not available because both the

subject and the object are marked by the particle *GA*. In such a case, the second *GA*-marked NP can be used as the object⁴. When there are two *GA*-marked NPs in a sentence, native Japanese speakers interpret them by using word order information. Since Japanese is an SOV order language, native Japanese speakers prefer to interpret (14) as an SOV order sentence. The first *GA*-marked NP is processed as the subject while the second *GA*-marked NP is interpreted as the object. It is impossible to interpret (14) as an OSV order sentence.

- (14) boku-ga Hanako-ga suki-da.
 I-SUBJ Hanako-OBJ like-COP
 ‘It is I that like Hanako.’

(Kuno 1973b: 49)

Topic marking particles show that a noun phrase has the special status of topic. The most typical topic marking particle is *WA*. What I should emphasize here is that the nominative case marker *GA* and the accusative case marker *O* can be substituted for topic marking particle *WA* as shown in (15). The choice between the topic marking particle *WA*

⁴ The second NP is marked with the particle *GA* because there is a strong correlation between *GA* and the predicate *suki* ‘like’.

and the case particles *GA* and *O* depends on pragmatic factors; the particle *GA* correlates with new information and the topic marker *WA* is related to given information, etc. Under the framework of Chafe (1987, 1994), for example, Imamura, Helgason, and Koizumi (2014) propose that the particle *GA* is selected when the *GA*-marked referent is inactive whereas the particle *WA* is chosen when the *WA*-marked referent is semi-active⁵. To wit, information structure works here.

- (15) Taro-ga/wa Jiro-o/wa oikake-ta.
 Taro-NOM/TOP Jiro-ACC/TOP chase-PAST
 ‘Taro chased Jiro.’

Though topic marking particle *WA* can replace the nominative case marker *GA* or the accusative case marker *O* when it overlaps with the nominative or accusative phrase

⁵ Chafe (1987:25) proposes three different states of activation: active, semi-active (or accessible), and inactive. An active concept is one that is currently lit up, a concept in a person’s focus of consciousness at a particular moment. A semi-active concept is one that is a person’s peripheral consciousness, a concept of which a person has background awareness, but one that is not being directly focussed on. Chafe (1994: 86) states that semi-active referents ‘may be in the semi-active rather than the inactive state and thus be more accessible than new referents. It may be a referent that (a) was active at an earlier time in the discourse, (b) is directly associated with an idea that is or was active in the discourse, or (c) is associated with the nonlinguistic environment of the conversation and has for that reason been peripherally active but not directly focussed on.’ An inactive concept is one that is currently in a person’s long-term memory, neither focally nor peripherally active. Generally speaking, active information refers to given information and inactive information is related to new information. Chafe’s proposal is unique in that semi-active information is introduced as an intermediate type that exists between them.

as in (15), it follows other case particles as shown in (16). In (16a), the topic marking particle *WA* follows the locative case particle *DE*. Since *WA* cannot replace *DE*, it is attached to *DE*. In the same way, *WA* is preceded by *KARA* in (16b) and *MADE* in (16c). It should be noted that *WA* cannot replace *DE*, *KARA*, and *MADE* in (16).

(16) a. Tokyo-de-wa haru-da.

Tokyo-LOC-TOP spring-COP

‘It is spring in Tokyo⁶.’

b. koko-kara-wa umi-o miru-koto-ga deki-masu.

here-from-TOP sea-ACC see-NMZ-NOM can-HON

‘You can see the sea from here.’

c. kokokara eki-made-wa dorekurai-desu-ka?

here-from station-to-TOP how.far-COP-Q

‘How far is it from here to the station?’

With regard to the function of *WA* and *GA*, Kuno (1973a: 38) states that ‘there are two uses of *WA* and three *GA*’. Based on Kuno (1973a, b) and Takami and Kuno (2006),

⁶ Japanese is a topic-prominent language and does not require the expletive subject ‘it’ unlike English.

let us expand on the properties of *WA* and *GA* summarized in (17).

- (17) a. *WA* for the theme of a sentence: ‘Speaking of..., talking about...’

John-wa gakusei-desu.

John-TOP student-COP

‘Speaking of John, he is a student.’

- b. *WA* for contrasts: ‘X..., but ..., as for X...’

ame-wa fu-ttei-masu-ga...

rain-TOP fall-PROG-HON-but

‘It is raining, but’

- c. *GA* for neutral descriptions of actions or temporary states

ame-ga fu-ttei-masu.

rain-NOM fall-PROG-HON

‘It is raining.’

- d. *GA* for exhaustive listing: ‘X (and only X) ...’ ‘It is X that ...’

John-ga gakusei-desu.

John-NOM student-COP

‘(Of all the people under discussion) John (and only John) is a student.’

‘It is John who is a student.’

e. *GA* for object marking

boku-wa Mary-ga suki-desu.

I-TOP Mary-NOM be.fond.of-COP

‘I like Mary.’

First, thematic *WA* must be either generic or anaphoric. Both (18a) and (18b) ‘are grammatical because *kujira* ‘whale’ and *John* in these sentences are generic and anaphoric noun phrases, respectively’ (Kuno 1973a: 45)⁷. The sentence (18a) talks about the general property of *kujira* itself and does not refer to a specific one. As for the example (18c), it ‘is grammatical only when *futari* is taken as meaning ‘the two people (under discussion)’’. The sentence would be ungrammatical if it meant ‘the people who came to the party numbered two’, that is, if *futari* was taken as two people with no anaphoric reference’ (Kuno 1973a: 45).

(18) a. *kujira-wa honyūdōbutsu-desu.*

⁷ Although Kuno (1973a:45) states that *John* in (1b) is anaphoric, it seems that *WA*-marking is appropriate because *John* is identifiable. Indeed, it is grammatical to refer to *John* from the beginning of the discourse if the hearer can identify the referent of *John*.

whale-TOP mammal-COP

‘Speaking of whales, they are mammals’

‘A whale is a mammal.’

b. John-wa watakushi-no tomodachi-desu.

John-TOP I-GEN friend-COP

‘Speaking of John, he is my friend.’

c. futari-wa party-ni ki-mashi-ta.

two-TOP party-LOC come-HON-PAST

‘Speaking of the two persons, they came to the party.’

(Kuno 1973a: 44)

Similarly, (19) is grammatical because *inu* ‘dog’ is generic. The sentence (19) expresses a generic statement about *dogs*. In other words, it means *dogs bark*. It should be noticed that *inu* is not anaphoric in the sense that it is introduced for the first time in the current discourse and there is no specific dog in the speaker’s mind. Therefore, it must be interpreted as generic.

(19) *inu-wa hoe-ru.*

dog-TOP bark-NONPAST

‘Dogs bark.’

(Iwasaki 2002: 222)

In contrast, (20a), (20b) and (20c) are ungrammatical because *oozei no hito* ‘many people’, *omoshiroi hito* ‘interesting people’, and *dare* ‘who’ cannot be taken as person or people with anaphoric reference, although they are specific noun phrases. Since they are nonanaphoric referents, ‘their referents have not been entered into the registry of the present discourse’ (Kuno 1973a: 45).

(20) a. * oozeino hito-wa party-ni ki-mashi-ta.

many- people-TOP party-LOC come-HON-PAST

‘Speaking of many people, they came to the party.’

b. * omoshiro-hito-wa party-ni ki-mashi-ta.

interesting-people-TOP party-LOC come-HON-PAST

‘Speaking of interesting people, they came to the party.’

c. * dareka-wa byōki-desu.

somebody-TOP sick-COP

‘Speaking of somebody, he is sick.’

(Kuno 1973a: 45)

In the same way, it is difficult to interpret *ame* ‘rain’ in (21a) as generic or anaphoric and thus (21a) is infelicitous. In contrast, (21b) is acceptable if and only if *ame* is construed as anaphoric. In other words, if the second *ame* refers to the first one, (21b) will be acceptable. Furthermore, (21c) is acceptable if and only if *ame* has a generic meaning. The sentence (21c) talks about the generic property of rain itself.

(21) a. * *ame-wa fu-ttei-masu.*

rain-TOP fall-PROG-HON

‘Speaking of rain, it is raining.’

b. *asa hayaku ame-ga furi-dashi-ta...*

morning early rain-NOM fall-start-PAST

yoruni natte-mo ame-wa fu-ttei-ta.

night become-even rain-TOP fall-PROG-PAST

Anaphoric: ‘It started raining in the morning...’

‘(Lit.) Speaking of the rain, it was still falling even when it became night.’

- c. kyō-no ame-wa zuibun hidoi.
 today-POSS rain-TOP very violent

Anaphoric—unique reference: ‘Today’s rain is very violent.’

- d. ame-wa sora-kara fu-ru.
 rain-TOP sky-from fall-NONPAST

Generic: ‘Speaking of the rain (in general), it falls from the sky.’

(Kuno 1973a:46)

Based on the observations about the thematic *WA*, Takami and Kuno (2006) propose a generalization that *WA* is interpreted as thematic when the speaker/writer believes that the *WA*-marked noun is identifiable to the hearer. Thus, (22) is unacceptable because *dare* ‘who’ is non-identifiable due to its non-referentiality.

- (22) * dare-wa ki-mashi-ta-ka?
 who-TOP come-HON-PAST-Q
 ‘Who came?’

(Iwasaki 2002: 220)

Identifiability seems to be pertinent to thematic use of *WA*. Identifiability differs from anaphoricity in the sense that it includes not only i) people or things that previously mentioned and thus have been entered into the registry of the present discourse but also ii) people or things that are closely associated with the speaker, the hearer, or the place where participants hold the conversation and thus their references are clear, e.g. I, you, your wife, the sun, the moon, and iii) the concepts that are known to both the speaker and the hearer, e.g. human, animal, democracy (Takami and Kuno 2006: 186). *WA*-marked referents can be taken as having thematic meaning if the hearer can identify what their references are.

Second, contrastive *WA* can be used for both nonanaphoric nouns and nongeneric nouns unlike thematic *WA*. In (23), *oozeino hito* cannot be interpreted as thematic because it is not an anaphoric expression. However, (23) is grammatical if and only if *oozeino hito* is taken as contrastive because contrastive *WA* can be assigned to nonanaphoric nouns.

- (23) oozeino hito-wa party-ni ki-mashi-ta-ga
 many- people-TOP party-DAT come-HON-PAST-but
 omoshiro-hito-wa ki-masen-deshi-ta.
 interesting-people-TOP come-NEG-COP-PAST

‘Many came to the party, but there was none who was interesting.’

(Kuno 1973a: 47)

Although we observed in (22) that thematic *WA* contradicts with *wh*-phrases, contrastive *WA* can be attached to *wh*-phrases if it is contrasted with the other referent explicitly or implicitly. For example, in (24), the first *dare* ‘who’ is contrasted with the second *dare*. To put it more concretely, there is a contrastive relationship between *the person who came at 2 o’clock* and *the person who came at 3 o’clock* and thus *WA*-marking is permitted.

- (24) dare-wa niji-ni it-te, dare-wa sanji-ni it-ta-no?
who-TOP 2. O’clock-at go-LK who-TOP 3.o’clock-at go-PAST-Q
‘Who went at 2, and who went at 3?’

(Miyagawa 1987: 208)

With regard to the distribution of thematic and contrastive *WA*, Kuno (1973a: 48) observed that ‘a given sentence can have only one thematic *WA*: if there is more than one occurrence of *WA* in a sentence, only the first can be thematic: all the rest (and probably the first one also) are contrastive’. For example, in (25), only *Taro* can be interpreted as

thematic because he is located at the sentence-initial position. On the other hand, *hon* ‘book’ receives an only contrastive interpretation because it is not the first *WA*-marked NP. Note that the interpretation of *Taro* is ambiguous because contrastive interpretation can be assigned to both the first *WA*-marked NP and the other *WA*-marked NPs. The *WA*-marked first NP can be construed as both thematic and contrastive, depending on the discourse contexts.

(25) Taro-wa (kyonen) sono hon-wa kat-ta.

Taro-TOP last year that book-TOP buy-PAST

A. ‘Speaking of Taro, he bought that book (last year), but I don’t know about other books.’

(Taro = thematic, that book=contrastive)

B. ‘Taro bought that book (last year), but I don’t know about other people and other books.’

(Taro= contrastive, that = contrastive)

(Saito 2012: 158)

Third, *GA*-marked NPs can express neutral descriptions of actions or temporary

states. More specifically, descriptive interpretation correlates with the subjects of action verbs, existential verbs, and adjectives and nominal adjectives that represent changing states. For example, the *GA*-subjects in (26) can be construed as neutral description because the verbs in (26a, b, c) stands for actions such as *furu* ‘fall’, the verbs in (26d, e) are existential verbs *aru* and *iru* ‘be’, and the adjectives in (26f, g, h) express temporary states. The verb in (26a) *tatsu* ‘stand’ has the progressive aspect *teiru* and thus cannot be taken as expressing the permanent event, and the same thing holds of (26c). The sentence (26b) stands for the moment when *tegami* ‘letter’ arrived. (26d) and (26e) express the existential of *hon* and *John*, respectively. The color of sky changes easily and therefore *akai* ‘red’ is not permanent in (26f). (26g) and (26h) express the temporal states of the speaker’s physical condition and thus is not a permanent event. Note that ‘sentences of neutral description present an objectively observable action, existence, or temporary state as a new event’ (Kuno 1973a: 51).

(26) a. John-ga asoko-ni tat-teiru.

John-NOM that.place-LOC stand-PROG

‘John is standing there.’

b. tegami-ga ki-ta.

letter-NOM come-PAST

‘Mail has come.’

c. ame-ga fut-teiru.

rain-NOM fall-PROG

‘It is raining.’

d. tsukue-no ue-ni hon-ga aru.

table-GEN top-LOC book-NOM be.NONPAST

‘There is a book on the table.’

e. oya, asoko-ni John-ga iru.

oh there-LOC John-NOM be.NONPAST

‘Oh, John is there.’

f. sora-ga akai.

sky-NOM is.red

‘Look! The sky is red.’

g. atama-ga itai.

head-NOM is.aching

‘I have a head ache.’

h. te-ga tsumetai.

hand-NOM cold

‘My hands are cold.’

(Kuno 1973a: 50)

When the predicates represent stative verbs and adjectives and nominals of permanent states, the *GA*-marked subjects cannot be construed as neutral description (Kuno 1973b: 32). Let us have a look at (27), (28), and (29). All the predicates in (27), (28), and (29) express permanent states. (27) expresses the permanent state because the proposition that *the monkey is the ancestor of mankind* is a historical fact and cannot be changed. Similarly, (28) represents the permanent state because *Tokyo* cannot be small suddenly. Lastly, (29) also stands for the permanent states because John’s language skill is not changed easily. When a *GA*-marked subject cannot receive the meaning of neutral description, it is taken as meaning exhaustive listing.

(27) a. * saru-ga ningen-no senzo desu. (neutral description)

 monkey-NOM man-GEN ancestor COP

 ‘Look! A monkey is the ancestor of mankind!’

 b. saru-ga ningen-no senzo desu. (exhaustive listing)

monkey-NOM man-GEN ancestor COP

‘It is the monkey that is the ancestor of mankind.’

- (28) a. * Tokyo-ga ookii. (neutral description)

Tokyo-NOM is.big

‘Look! Tokyo is big.’

- b. Tokyo-ga ookii. (exhaustive listing)

Tokyo-NOM is.big

‘It is Tokyo that is big.’

- (29) a. * John-ga nihongo-ga dekiru. (neutral description)

John-NOM Japanese-NOM can

‘John can speak Japanese.’

- b. John-ga nihongo-ga dekiru. (exhaustive listing)

John-NOM Japanese-NOM can

‘John (and only John) can speak Japanese.’

(Kuno 1973a: 53)

Fourth, *GA*-marked subjects can represent exhaustive meaning both for changing states and permanent states. However, when a *GA*-marked subject has an exhaustive

meaning, it must list all the candidates. For example, as a reply to (30a), (30b) means that John is the only person who died and presupposed that the others didn't die. (30b) lists all candidates who died because it stands for exhaustive meaning.

(30) a. dare-ga shin-da-ka?

who-NOM die-PAST-Q

‘Who died?’

b. John-ga shin-da.

John-NOM die-PAST

‘It is John who died. (That is, John and only John died.)’

(Kuno 1973a: 53)

Comparing neutral description with exhaustive listing in terms of information structure, Kuno (1972: 272-3) claims that the discourse status of the predicates determines the interpretation of the *GA*-marked subject. It should be noted that *GA*-marked referents represent new information. When the *GA*-marked subject is new information and the rest of the sentence is given information, *GA*-marking means exhaustive listing. On the other hand, when the sentence as a whole represents new information, *GA*-marking means

neutral description. Let us illustrate Kuno's observation by looking at (31). In (31a), the sentence as a whole conveys new information. Thus, the *GA*-marking in (31a) expresses the neutral description of *John*. On the other hand, in (31b), although the *GA*-marked subject *John* represents new information, the predicate *dokushin desu* 'is single' conveys given information. This is because (31b) can be paraphrased as (31c). In (31b), *GA*-marked subject, *John*, is taken as having the meaning of exhaustive listing.

(31) a. oya, John-ga ki-ta. (neutral description)

oh John-NOM come-PAST

'Oh, look. John has come.'

b. John-ga dokushin desu.

John-NOM single COP

'It is John who is single.'

c. dokushin-na-no-wa John desu.

single-is-one-TOP John COP

'The one who is single is John.'

(Kuno 1972: 272-3)

interpretation. In (33a), the verb *yomu* ‘read’ requires an agent and a theme. Since there are correlations between theta-roles and syntactic positions, agents tend to be realized as subjects and themes are apt to be realized as objects (Baker 1988)⁸. Since the inanimate noun *hon* ‘book’ is the only candidate for a theme, it is interpreted as the object. In contrast, since the proper noun *Ken* can become an agent, he is interpreted as the agentive subject. The native Japanese speaker processes (33a) by using animacy information because case information is not available in the sense that both the subject and the object are marked by the topic marker *WA*. It should be noticed that (33a) is interpreted as an OSV order sentence although SOV is the basic word order in Japanese. Therefore, animate information is superior to the use of word order information here. If word order information were preferable to animate information, (33a) would be interpreted as an SOV order sentence, but this process would not happen here. According to Yokoyama, Takahashi, and Kawashima (2013, 2014), case information is preferentially used over animacy information, which in turn surpasses word order information. If the information about case particles is available, it is preferably used. If there is no case particle, animacy information is utilized instead. If neither case nor animacy information can be used, word

⁸ Baker (1989) claims that each theta-role assigned by a particular kind of predicate is canonically associated with a syntactic position. This hypothesis is called Uniform Theta Assignment Hypothesis (UTAH).

order information is exploited instead. Thus, (33b) is construed only as an SOV order sentence on the basis of word order information because both animacy information and case information cannot be utilized. Note that there is no difference in animacy between the subject *Keiko* and the object *Ken* because both of them are human nouns. Similarly, case information cannot be made use of because the combination of *WA*-marking and *GA*-marking cannot determine the syntactic structure of (33b). Furthermore, (33c) is taken as an OSV order sentence because case information is available. It should be noted that the combination of *O*-marking and *GA*-marking leads to the interpretation that *O*-marked referent is the direct object and the *GA*-marked referent is the subject. When case information is available, there is no need to depend on animacy or word order information. Hence, the only possible interpretation of (33c) is *Ken deceived Keiko*.

- (33) a. sono-hon-wa Ken-wa yon-da.
 that-book-TOP Ken-NOM read-PAST
 ‘That book, Ken read.’
- b. Keiko-wa Ken-ga suki-da.
 Keiko-TOP Ken-NOM like-COP
 ‘Keiko likes Ken.’

c. Keiko-o	Ken-ga	damashi-ta.
Keiko-ACC	Ken-NOM	deceive-PAST
‘Ken deceived Keiko.’		

Next, let us move on to the case where a particle is realized as a phonetically null morpheme. This grammatical entity is called ‘zero particle’. There are two points of view about this grammatical category. One is that zero particle is actually a particle omission (Kuno 1972; Ono et al. 2000; Tsutsui 1984). This position predicts that zero particles can be replaced by other case particles such as the nominative *GA* and the accusative *O* as shown in (34a). Although their pragmatic meanings differ from each other, not only zero particles but also *GA* and *WA* can be selected. The choice between the case marker and the zero particle does not lead to a drastic change of acceptability of (34a). The other point view about zero particles is that zero particles form a grammatically independent category (Niwa 1989; D-Y Lee 2002). This position is based on the fact that many zero particles cannot be substituted for overt particles. For example, in (34b), only a zero particle is the appropriate choice. A zero particle is obligatorily here. If the nominative case marker *GA* or the accusative case marker *O* were chosen, (34b) would be unacceptable. With regard to the function of zero particles, there are diverse viewpoints and claims. To begin with,

Shibatani (1990) contends that an obligatorily zero particle is connected with expressing the speaker's feeling or emotion. In addition, Suzuki (1995) argues that the main functions of zero particles is to mark the minor discourse boundaries. After using a zero particle, discourse topic tends to change from the former one to the new one. Furthermore, D-Y Lee (2002: 662) stresses that 'the grammatical property of the zero particle is 'absolute specification', by which the speaker specifies an object or event represented by the NP, without referring to other objects/events'. Moreover, Shimojo (2005: 127) insists that the main function of the zero particle is to encode information in absolute specification for cataphoric defocusing. In other words, a zero particle is chosen when the speaker would like to make mention of a certain referent without referring to other objects and would not like to continue talking about that referent in the succeeding discourse. In any case, a zero particle is supposed to work as a pragmatic particle.

(34) a. Tanaka-san- Ø/ga/wa inakunari-mashi-ta.

Tanaka-N.SU- Ø/NOM/TOP disappear-HON-PAST

'Mr. / Ms. Tanaka has disappeared.'

b. watashi- Ø/*ga/?wa bikkurishi-mashi-ta.

I- Ø/*NOM/?TOP be.surprise-HON-PAST

‘I was surprised.’

(Shimojo 2005: 37)

As outlined so far, it has been demonstrated that information structure affects the choice of the particles for marking NPs. In addition, the usages of some sentence final particles count on information structure. The definition of the sentence final particles is that they come at the end of a complete sentence and express the speaker’s attitudes towards the referential information. The list of the final particles is the followings; *ka* and *kashira* express interrogative meaning, *sa* represents the speaker’s judgement, *kke* stands for memory confirmation, *na* prohibits the hearer’s action, *yo* marks hearer-new information while *ne* marks hearer-old information. It should be noticed that given-new distinction does things to the final particles *yo* and the *ne* (Kamio and Takami 1998; McCready 2009; Takubo and Kinsui 1997). Talking about the usage of the final particle *yo*, it gives the speaker’s judgement or views assertively or emphasizes the hearer-new information. Let us take some examples. In (35), the speaker A mistakenly supposed that the speaker B’s maiden name is *Yamada*. Thus, the speaker B corrected the speaker A’s mistake by stating that her maiden name is *Suzuki*. Under this context, only *yo* can be used to mark the speaker B’s remark. This is because what the speaker B said is hearer-

new information. Since the speaker B denies what the speaker A said, she expresses her point of view assertively here. In (36), the speaker is reporting to the hearer that *Taro* has just come. Since *yo* is selected when the propositional meaning of the sentence is not known to the hearer yet, (36) is grammatical. By adding an exclamation *a* ‘oh’ to the utterance, the sentence will become more natural because the exclamation clearly shows that the speaker came up with the contents of the sentence at that moment. In this case, the final particle *yo* emphasizes what the hearer does not know.

(35) Speaker A: Ø kyūsei-tte Yamada-deshi-ta-kke?
(you) maiden.name-TOP Yamada-COP-PAST-FP
‘Is your maiden name Yamada?’

Speaker B:	watashi-no	kyūsei-wa	Suzuki-desu-yo/*ne.
	I-GEN	maiden.name-TOP	Suzuki-COP-FP
	‘My maiden name is Suzuki.’		

(36) Taro-ga ki-ta-yo.
 Taro-NOM come-PAST-FP
 ‘Taro came.’

(McCready 2009: 3)

Opposed to the final particle *yo*, *ne* is selected for marking hearer-old information, as shown in (37) and (38). With respect to the usage of *ne*, it expresses the shared information or calls for confirmation. Without a specific context, it is strange that the hearer does not know his name. Therefore, (37) expresses the hearer-old information and *ne* is used. Here, the particle *ne* asks for confirmation or clarification about the content of (37). On the other hand, the final particle *ne* in (38) represents shared information between the speaker and the hearer. Supposing that both the speaker and the hearer are seeing the rain when they get out of the building, the proposition, *It is raining*, is shared between the speaker and the hearer.

(37) anata-wa Yamada-san-desu-ne.

you-TOP Yamada-Mr.-COP-FP

‘You are Mr. Yamada, aren’t you?’

(Takubo and Kinsui 1997: 752)

(38) (When both the speaker and the hearer came out of the building)

ame-ga hutte-iru-ne.

rain-NOM fall-PROG-FP

‘It is raining.’

In sum, Japanese is a morphologically rich language in that it has many kinds of particles. Since they provide not only grammatical and semantic information but also pragmatic information, they have implications for the discourse status of the referents. Specifically, topic marking particle *WA* is the representative of the pragmatic particle whose usage depends to a large degree on pragmatic factors. Recall that the nominative case particle *GA* and the accusative case particle *O* can be replaced by the topic marking particle *WA*. Native Japanese speakers need to select a case particle or a topic marking particle in order to mark a NP. Therefore, particles are taken into consideration when word order changes and passives are analyzed from a viewpoint of information structure.

2.2.3. Zero Pronouns

Japanese is a ‘strong’ pro-drop language, which means not only zero subjects as in (39b) but also zero objects are permitted as in (39c). Note that both zero subject and zero object in (39) are phonetically null arguments whose antecedents are easily identifiable from the discourse. In (39b), the subject is phonetically absent but, grammatically, the subject, *he*,

must exist because the predicate *hairu* ‘enter’ needs a subject as an argument. Hence, (39b) has a zero subject whose antecedent is *Taro* in (39a). Here, *Taro* is the only human agent who can be the subject of *hairu* ‘enter’. Thus, zero subject can be interpreted as the null form of *Taro*. In (39c), since the overt subject *Jiro* is introduced, *Taro* cannot be the candidate for the subject. In addition, the two argument predicate *dekuwasu* ‘meet’ requires the human object. Hence, *Taro* is interpreted as the antecedent of the zero object in (39c). The similarities between the zero subject and the zero object is that they are easily recoverable from the discourse context. Note that there is no explicit agreement between the verb and the arguments in Japanese unlike other pro-drop languages such as Spanish. Therefore, Japanese must count on discourse contexts instead of agreement information in order to identify the antecedent of a zero pronoun. There is a strong connection between the interpretations of zero pronouns and discourse contexts. The antecedents of zero pronouns are contextually determined in general. Zero pronouns are the default option for expressing topic continuity in Japanese (Hinds 1978, 1982; Imamura and Helgason 2016; Imamura, Helgason, and Koizumi 2014; Imamura and Koizumi 2012; Kuno 1978; Shimojo 2005, 2006; Walker, Iida, and Cote 1994). In fact, native Japanese speakers prefer to use zero pronouns when their antecedents are clear from the discourse context (Kuno 1978:8).

(39) a. Taro-ga kōen-de hon-o yondei-mashi-ta.

Taro-NOM park-at book-ACC read-HON-PAST

‘Taro was reading a book in the park.’

b. Ø cōra-o kai-ni baiten-ni hairi-mashi-ta.

(he) cola-ACC buy-to shop-into enter-HON-PAST

‘(He) entered a shop to buy a cola.’

c. Jiro-wa Ø sokode gūzen dekuwashi-mashi-ta.

Jiro-TOP (him) there by.chance meet-HON-PAST

‘Jiro met (him) there by chance.’

(Walker, Iida and Cote 1994: 202)

With regard to the preferred interpretation of a zero pronoun, it is based on both syntactic and discourse factors (Kameyama 1985; Walker et al. 1994). From a syntactic view, the antecedent of a zero pronoun is more likely to be the subject than the object in the previous utterance. In (40b), for instance, the antecedent of the zero subject is *Michiko*, not *kanai* ‘my wife’. This is because *Michiko* is the subject and *kanai* is the direct object in the immediately preceding sentence (40a). Subjects are preferable to other grammatical

functions as the antecedent for a zero pronoun.

(40)a. Michiko-wa kanai-o gichō-ni oshite-kure-mashi-ta.

Michiko-TOP my.wife-ACC chairperson-DAT recommend-EMP-HON-PAST

‘Michiko did my wife a favor in recommending her as chairperson.’

b. ∅ asu-no kaihyōkekka-o tanoshimi-ni shite-imasu.

(she) tomorrow-GEN results-ACC look.forward-to doing-be.PROG.HON

‘(She) is looking forward to tomorrow’s results.’

(Walker, Iida, and Cote 1994: 212)

On the other hand, the antecedent of the zero subject in (41b) is *Jiro*. Although *Taro* is the subject and *Jiro* is the direct object in (41a), native Japanese speakers generally judge that *Jiro* got mad. This is because it is natural for victims to get angry about what they suffer from. The example (41) clearly shows that discourse contexts can override the syntactic preference that was exhibited in (40). To wit, the interpretation of a zero pronoun is determined by the interactions between syntactic and discourse factors.

(41)a. Taro-ga Jiro-ni uso-o tsui-ta.

Taro-NOM Jiro-DAT lie-ACC tell-PAST

‘Taro told a lie to Jiro’

b. dakara, Ø okot-ta-nda.

so (he) get.angry-PAST-COP

‘(He) got angry.’

In more recent studies, Shimojo (2005, 2006) observed that zero pronouns are the default choice for expressing the continuation of same referents at a certain point of discourse; they tend to have their antecedent in the immediately preceding context and be carried over to the following discourse contexts. In other words, they are ‘the unmarked representation of sameness of denotation’ (Nariyama 2000: 299). In (42), for example, the referent of the zero pronoun, *cake*, centers around the discourse. Indeed, *cake* appears in (42b), (42c), (42e), (42f), (42h), and (42j). It works as the device to maintain the same referent throughout (42).

(42) a. Ø jibun-dake-no tame-ni Ø ka-u.

(you) self-only-GEN for-DAT (it) buy-NONPAST

‘(You) buy (something [unspecified] just for yourself.)’

- b. takai kēkī-toka kooyuu yatsu
 expensive cake-etc. this.kind.of stuff

‘Expensive cake or something like this.’

- c. iya Ø Ø tabe-re-nai.
 no (I) (it) eat-POT-NEG

‘No, (I) cannot eat (cake).’

- d. Ø anna-no-Ø zettai tabe-re-nai.
 (I) that.kind-one-Ø absolutely eat-POT-NEG

‘(I) can never eat one like that.’

- e. datte Ø makka-nan-da-yo
 but (it) red-NMZ-COP-FP

‘(The cake) is really red, you know.’

- f. kekkyoku Ø minna-ni Ø kuba-ru.
 after.all (I) everyone-to (it) distribute-NONPAST

‘After all, (I) will give (the cake) to everyone.’

- g. soo soo
 right right

‘Righr, right.’

h. Ø demo nanka āyū kēkī-toka-Ø-sa

(I) but F that.kind.of cake-etc.-Ø-FP

‘But (I) want to give that kind of cake on someone’s birthday.’

dareka-no tanjōbi-toka-ni age-tai-ne

someone-GEN birthday-etc.-on give-want-FP

‘But (I) want to give that kind of cake on someone’s birthday.’

i. da-ne

COP-FP

‘Right.’

j. yasukat-ta-jan kēkī-toka-Ø

cheap-PAST-FP cake-etc.-Ø

‘The cake was cheap.’

(Shimojo 2005:119-20)

From a view point of functional syntax, Kuno (1995) observed that focus constituents cannot normally be realized as zero pronouns, as shown in (43). To begin with, Kuno (1978: 60) points out that the position immediately preceding the predicate is the default position for focus information. Taking this proposal into consideration, (43c’)

is unacceptable because *coffee* is realized as a zero pronoun although the preverbal position is the focus position. Building on observations like this, he proposed a principle shown in (44). Let us illustrate this principle by having a look at (45).

(43) a. Taro-wa kokoa-o non-da.

Taro-TOP cocoa-ACC drink-PAST

‘Taro drank cocoa.’

b. Naomi-wa kōhī-o non-da.

Naomi-TOP coffee-ACC drink-PAST

‘Naomi drank coffee.’

c. Ken-mo kōhī-o non-da.

Ken-too coffee-ACC drink-PAST

‘Ken drank coffee.’

c’.* Ken-mo Ø non-da.

Ken-too (it) drink-PAST.

‘*Ken, too, drank Ø.’

(Kuno 1995: 216)

(44) Pecking Order of Reduction Principle: Reduce less important information first,
and more important information last⁹.

(Kuno 1995: 219)

In (45a), *dare* ‘who’ is the most important information because it is the only *wh*-phrase in the sentence, and *coffee* is the second most important information because it resides in the position immediately preceding the predicate. Unlike *dare* and *coffee*, *ichiban suki* ‘like best’ is not important information. As a reply to the *wh*-question (45a), the answer (45b) will be acceptable, although it apparently violates (44). Note that the predicate is the least important information in (45b). However, the retention of the predicate is not related to speaker’s intention. The predicate remains explicit due to the constraint that a predicate must arise at the end of a clause in Japanese (Kuno 1973b: 9-12). Therefore, (44) is associated only with arguments in (45). Since *Taro* is more important than *coffee* in (45b), a zero pronoun can be used for expressing *coffee*.

⁹ This principle can be applied for any category. For example, in (ic), the time adjunct *1960-nen-ni* ‘in 1960’ cannot be omitted because it is the focus.

- | | | | | | |
|-----|-----|----------------------------------|--------------------|--------------|---------|
| (i) | a. | Taro-wa | 1960-nen-ni(-wa) | umarate | ita. |
| | | Taro-TOP | 1960-year-in(-TOP) | already.born | be.PAST |
| | | ‘Taro was already born in 1960.’ | | | |
| | b. | Ken-mo | 1960-nen-ni(-wa) | umarete | ita. |
| | | Ken-TOP | 1960-year-in(-TOP) | already.born | be.PAST |
| | b’. | * Ken-mo | Ø | umarete | ita. |
| | | Ken-TOP | | already.born | be.PAST |
| | | ‘Ken, too, was already born Ø.’ | | | |

(Kuno 1995: 215)

- (45) a. dare-ga kōhī-ga ichiban sukina-no?
 who-SUBJ coffee-OBJ best fond.of-Q
 1st focus 2nd focus Non-focus
 ‘Who likes coffee best?’
- b. Taro-ga Ø ichiban suki-da-yo.
 Taro-NOM (it) best fond.of-COP-FP
 ‘Taro likes (it) best.’

(adapted from Kuno 1995: 219-20)

To summarize the above discussion, zero pronouns work as the typical choice to maintain the same referent throughout the discourse. In other words, they are apt to have the nearest antecedent in the immediately previous utterance and be taken over to the subsequent utterances. Concerning the interpretation of zero pronouns, it is strongly influenced by both syntactic factors and discourse factors. To put it more concretely, it must be recoverable from the discourse context and is affected by the grammatical hierarchy. Moreover, zero pronouns tend to be incompatible with important information.

2.2.4. Passives

Japanese passives are constructed on the basis of the passive morpheme *rare*, which is incorporated as a complex predicate as shown in (46b). In (46b), *rare*-morpheme was added to the main verb *naguru* ‘punch’ and the complex predicate *nagurare* ‘be punched’ was formed. Passive sentences such as (46b) are called ‘direct passive’, which includes the promotion of the patient from the object position in the active voice to the subject position and the demotion of the agent from the subject position in the active voice to the oblique position. In the active sentence (46a), the agent *Taro* is the subject and the patient *Ken* is the direct object. On the other hand, in the direct passive sentence (46b), the patient *Ken* is the subject and the agent *Taro* is a non-obligatory constituent realized as a by-phrase. During the voice change from the active voice to the passive voice, the former object becomes the new subject and the former subject becomes a peripheral constituent expressed by an oblique case, *-ni*. The direct passive is created by taking the direct object of an active sentence as the subject and has a direct correspondence to the passive in English. Incidentally, note that the former subject does not have to be realized as a *ni*-marked element because a by-phrase can be omitted as shown in (46c). This type of passive is called agentless passive. Returning to the direct passive, Nitta (1991) found that changing active sentences into direct passives affects the controllability of the event

by the subject. More specifically, direct passive sentences are less controllable than their active counterparts. Hence, imperative moods and intentional expressions are incompatible with the direct passive because they require the subject to control the event. For example, the active sentences (47a) and (47c) are acceptable whereas the direct passives sentences (47b) and (47d) are unacceptable¹⁰. Direct passives are incompatible with the imperative mood as shown in (47b) and the intentional expression as shown in (47d) because the passive subject is less controllable of the event than the active subject. This fact clearly indicates that voice alternation influences the controllability of the subject.

(46) a. Taro-ga Ken-o nagut-ta.

Taro-NOM Ken-ACC punch-PAST

‘Taro punched Ken.’

b. Ken-ga Taro-ni nagu-rare-ta.

Ken-NOM Taro-by punch-PASS-PAST

¹⁰ In some cases, direct passives can be used for the imperative mood as shown in (i). However, even in such a situation, the subject of the direct passive is less controllable about the event than its active counterpart.

(i) a. tamani kantoku-ni shikkari kitae-rare-ro.
occasionally manager hard train-PASS-IMP
‘Sometimes be trained hard by the manager.’

(Nitta 1991: 43)

‘Ken was punched by John.’

c. Ken-ga nagu-rare-ta.

Ken-NOM punch-PASS-PAST

‘Ken was punched.’

(47) a. nanji-no rinjin-o ais-e!

you-GEN neighbor-ACC love-IMP

‘Love your neighbor.’

b. * nanji-no rinjin-ni ais-are-ro!

you-GEN neighbor-by love-PASS-IMP

‘Be loved by your neighbor.’

c. nanji-no rinjin-o ais-ō.

you-GEN neighbor-ACC love-AUX

‘Why don’t you love your neighbor?’

d. *nanji-no rinjin-ni ais-are-yoō.

you-GEN neighbor-by love-AUX

‘Why don’t you be loved by your neighbor?’

(Nitta 1991: 42)

In direct passives, *rare*-morpheme works as a valence decreaser. However, *rare*-morpheme can increase the valence of the verb. This type of passive is called ‘indirect passive’, whose subject is not directly involved in the event but is pragmatically relevant to the scene and affected by the event (Shibatani 1995). Note that the subject of an indirect passive does not exist in its active counterpart. In the indirect passive sentence (48b), for example, the subject *Taro* is added to the active sentence (48a). The subject of an indirect passive is adversely affected by the event¹¹. Hence, *Taro* is adversely affected by the event depicted by the rest of the sentence in (48b). In terms of typology, the indirect passive is a marked option because it does not involve the promotion of patient and defocusing of the agent (Dixon and Aikhenvald 1997, 2000; Shibatani 1985). The basic properties of prototype passives are summarized in (49) and (50).

¹¹ Washio (1992) points out that the indirect passive permits a neutral interpretation when the affected subject is somewhat involved in the event. The reading of (i) does not create a special meaning of adversity when the direct object *kodomo* 'child' is interpreted as John's child.

(Washio 1992: 52)

‘The daughter died.’

b. Taro-wa musume-ni shin-are-ta.

Taro-TOP daughter-by die-PASS-PAST

‘Taro had his daughter died.’

(49) Characterization of the passive prototype

a. Primary pragmatic function: Defocusing of agent.

b. Semantic properties:

(i) Semantic valence: Predicate (agent, patient).

(ii) Subject is affected.

c. Syntactic properties:

(i) Syntactic encoding: agent $\rightarrow \emptyset$ (not encoded)

patient $\rightarrow$ subject

(ii) Valence of P[redicate]: Active = P/n

Passive = P/n – 1

d. Morphological property: Active = P;

Passive = P [+passive]

(Shibatani 1985: 837)

- (50) a. Passive applies to an underlying transitive clause and forms a derived intransitive.
- b. The underlying O becomes S of the passive.
- c. The underlying A argument goes into a peripheral function, being marked by a non-core case, adposition, etc.; this argument can be omitted, although there is always the option of including it.
- d. There is some explicit formal marking of a passive construction – generally, by a verbal affix or by a periphrastic verbal construction.

(Dixon and Aikhenvald 2000:7)

Based on the fact that passives are normally selected when the agent is irrelevant or unknown, Shibatani (1985, 1995) proposes that defocusing the agent is the main function of passivization. This analysis leads to the conclusion that passives cannot be used when verbs do not encode the agent, because there is no candidate to be defocussed. However, Yamaguchi (2001) casts doubt on the validity of Shibatani's proposal on the basis of the fact that passivization can be applied for mental verbs such as *aisuru* 'love' and *konomu* 'be fond of'. For example, the passive subject receives an experiencer role

but the *ni*-passive sentence (51) is grammatical. Thus, Yamaguchi concludes that Shibatani's account is not satisfactory for explaining the motivation for passivization.

- (51) Picasso-no e-ga ooku-no hito-ni ais-are-ta.
Picasso-GEN painting-NOM many-GEN person-by love-PASS-PAST
'Picasso's painting was loved by many people.'

(Yamaguchi 2001: 239)

Yet, Schlesinger (1992) claims that subjects of mental verbs can be regarded as some kind of agent. According to his proposal, the agent role consists of a set of features: cause, characteristic responsible, motion, change of state, control, intention, and responsibility. Among them, experiencer subjects accord with a great degree of control and intention. It seems that agentivity can be split into semantic features and there are some similarities between agent and experiencer. Therefore, I conclude that (51) is not a crucial counter example to Shibatani's proposal.

Considering passives from the chief characteristics of prototype passives as shown in (49) and (50), by-passives are marked options. It has been observed cross-linguistically that agentless passives are more common than by-passives. In English, for instance,

Svaltvik (1966) reported that 80% of passives were agentless and Givón (1979) found that 87% of passives were agentless. Furthermore, in Japanese, Yamamoto (1984) revealed that 70% to 80% of the passives were agentless in journalistic writing and some 60% to 70% were agentless among the passives found in novels. Moreover, Keenan (1985: 249) maintains that ‘if a language has passives with agent phrases, it also has passives without agent phrases’. In addition, Givón (1990: 602) states that ‘the acquisition of the optional by-phrase was a later development, representing a subtle shift toward the more *eventive* perspective’. In other words, by-passives are considered to be more marked than agentless passives in terms of diachronic perspective. Besides, Maratsos (1978) asserts that agentless passives are acquired prior to agentive passives in English. In sum, agentless passives are more common than agentive passives even in languages allowing agentive passives.

With regard to agentive passives, Japanese has two types of by-(direct) passives: *ni*- and *niyotte*- passives as exemplified in (52). The difference between (52a) and (52b) is that the by-phrase is marked by *ni* in the former and by *niyotte* in the latter. Recall that by-passives are not normal options in the sense that they do not include ‘defocusing’ (which includes deletion) of the agent (Shibatani 1985). In other words, they do not follow the basic properties of the passive prototype in that agents are overtly realized as by-

phrases (Imamura, Helgason, and Koizumi 2013). Moreover, it has been reported that the frequency of by-passives is much lower than that of agentless passives (Yamamoto 1984). This fact meets one of Comrie (1988: 19-21)'s criteria for markedness: low frequency. Taken together, by-passives are considered to be marked options. It has been observed that marked options are more severely restricted by discourse contexts than unmarked options (Aissen 1992; Comrie 1988; Imamura, Sato, and Koizumi 2014, 2016; Kuno 1987, 1995; Koizumi and Imamura 2016; Koizumi et al. 2014). Since by-passives are marked options, both *ni*-passives and *niyotte*-passives are expected to require some specific conditions. Yet, Kinsui (1997) has revealed that the *ni*-passive is indigenous to the Japanese language whereas the *niyotte*-passive arose under the influence of European languages. In particular, the *niyotte*-passive is considered to come into existence through the literal translation of *door*-passives in Dutch. This analysis suggests that *niyotte*-passives may be more marked than *ni*-passives and may be used only for very specific contexts, as proposed by Imamura, Helgason, and Koizumi (2013). Anyway, what is the functional difference between the *ni*-passive and the *niyotte*-passive in Japanese? The first possibility is that affectedness has a great influence on the choice between the *ni*-passive and the *niyotte*-passive. Keenan (1985: 269) clearly states that 'distinct passives in a language may vary according to the degree of affectedness of the subject and whether it

is positively or negatively affected, though this variation seems less widely distributed than that of aspect'. This tendency holds of Japanese passives, and affectedness works on the choice between the *ni*-passive and the *niyotte*-passive. Kuroda (1979) proposes that the *ni*-passive requires the affected subject because the *rare*-morpheme assigns θ -role to its subject. In contrast, the *niyotte*-passive does not demand an affected subject because it does not have an external θ -role to assign. This analysis straightforwardly gives an explanation for the difference between (52b) and (52c). (52a) is an active sentence with an idiomatic phrase *tyūi-o harau* 'pay heed'. Harada (1977) first observed that an idiom chunk can be passivized in Japanese. Hence, passivization of an idiom chunk itself is a grammatical operation. However, there is a sharp contrast between the *ni*-passive sentence (53b) and the *niyotte*-passive sentence (53c) in terms of acceptability. (53b) is unacceptable because *tyūi* 'heed' cannot be affected although *ni*-passive requires an affected subject. (53b) is ruled out due to the violation of the selectional restriction imposed on the subject in the *ni*-passive. On the other hand, (53c) is perfectly acceptable because the *niyotte*-passive does not need an affected subject. Note that *tyūi* 'heed' cannot be affected and is compatible with the *niyotte*-passive.

(52) a. *Ni*-passive

Taro-ga Jiro-ni koros-are-ta.

Taro-NOM Jiro-by kill-PASS-PAST

‘Ken was killed by Jiro.’

b. *Niyotte*-passive

Taro-ga Jiro-niyotte koros-are-ta.

Taro-NOM Jiro-by kill-PASS-PAST

‘Ken was killed by Jiro.’

(53) a. John-ga tyūi-o harat-ta.

John-NOM heed-ACC pay-PAST

‘John paid heed.’

b. * tyūi-ga John-ni haraw-are-ta. (*ni*-direct passive)

heed-NOM John-by pay-PASS-PAST

‘Heed_i was affected by John’s paying it_i.’

c. tyūi-ga John-niyotte haraw-are-ta. (*niyotte*-passive)

heed-NOM John-by pay-PASS-PAST

‘Heed was paid by John.’

(Hoshi 1991: 70)

Furthermore, Kuroda (1979) found that subject-oriented adverbs such as *orokanimo* ‘stupidly’ go well with the *ni*-passive but conflict with the *niyotte*-passive, as shown in (54). This fact can be explained by presuming that subject-oriented adverbs require θ -subjects. The *ni*-passive sentence (54a) has the θ -subject realized as *daitōryō* ‘president’, which licenses the subject-oriented adverb *orokanimo* ‘stupidly’. On the other hand, the *niyotte*-passive sentence (54b) cannot have a θ -subject. The subject of (54b) cannot be interpreted as a θ -subject. Since (54b) lacks a θ -subject, the subject-oriented adverb *orokanimo* ‘stupidly’ cannot be permitted. In sum, affectedness can explain the *ni/nyotte* distinction.

- (54) a. *daitōryō-ga* *orokanimo* *CIA-ni* *koros-are-ta.*
 president-NOM stupidly CIA-by kill-PASS-PAST
 ‘Stupidly, the president was killed by the CIA.’
- b. ??*daitōryō-ga* *orokanimo* *CIA-niyotte* *koros-are-ta.*
 president-NOM stupidly CIA-by kill-PASS-PAST
 ‘Stupidly, the president was killed by the CIA.’

(Kuroda 1979: 325-6)

The second possibility is that Japanese by-passives are strongly affected by animacy. Muraki (1991) observed that there is an interrelation between animate (especially human) subjects and *ni*-passives as shown in (55a) and (55c), and *niyotte*-passives with inanimate subjects as shown in (55b) and (55d). Furthermore, Muraki points out that passive sentences can be more unmarked than active sentences in some cases, as shown in (55e) and (55f). Note that the active sentence (55f) corresponds to the *ni*-passive sentence (55e). Although (55e) is a passive sentence, it is more natural than (55f). Native Japanese speakers feel that some specific contexts are needed in order to interpret (55f), though it is an active sentence. This is because ‘Japanese does not allow a subject which completely lacks agency in a transitive sentence with an accusative marked direct object’ (Iwasaki 2002: 129). Since the active sentence (55f) is undesirable due to the lack of agency, the *ni*-passive sentence (55e) is selected in order to express the same proposition.

- (55) a. Hanako-ga Taro-ni tatak-are-ta.
 Hanako-NOM Taro-by hit-PASS-PAST
 ‘Hanako was hit by Taro.’
- b. * Hanako-ga Taro-niyotte tatak-are-ta.

Hanako-NOM Taro-by hit-PASS-PAST

‘Hanako was hit by Taro.’

c. * doa-ga nanimonoka-ni tatak-are-ta.

door-NOM somebody-by hit-PASS-PAST

‘Door was knocked by somebody.’

d. doa-ga nanimonoka-niyotte tatak-are-ta.

door-NOM somebody-by hit-PASS-PAST

‘Door was knocked by somebody.’

e. Hanako-wa umi-ni nom-are-teshimat-ta.

Hanako-TOP sea-by swallow-PASS-COMPL-PAST

‘Hanako was swallowed up by the sea.’

f. ? umi-ga Hanako-o nomikon-da.

sea-NOM Hanako-ACC swallow-PAST

‘The sea swallowed up Hanako.’

(Muraki 1991: 15)

Contrary to the claim that *ni*-passives seem to correlate with animate subjects, there are cases where the combination of the inanimate subject and the human by-phrase is

licensed. Takami (1995, 2011) observed that an inanimate subject can be selected even in *ni*-passives if it is characterized by the human *ni*-phrase. The definition of this constraint is shown in (56)¹². Let us have a look at (57) in order to illustrate the validity of this constraint. In (57a), *Taro* is an ordinary person and the fact that *Taro read this book* is not sufficient to qualify as a characterization or definition of *this book*. Therefore, (57a) results in an unacceptable passive sentence. On the other hand, in (57b), *tennōheika* ‘His Majesty the Emperor’ is the noblest person in Japan, and the fact that *Japanese emperor read this book* is sufficient to qualify as a characterization of it. Thus, (57b) is a completely acceptable passive sentence.

¹² Takami (1995, 2011) proposed that involvement and adversative meaning are related to the usages of Japanese passives. The surface subject is involved in the actions or states represented by the verb when it is a true patient in the meaning that it is genuinely affected by the verb. Namely, the subject is involved in the event only when the verb indicates that something is done to/for its subject. Even if the subject is not characterized by a *ni*-phrase, inanimate subjects in Japanese passives are acceptable when the subject is involved in the event or adversely affected by the event. As exemplified by (i), (ia) is acceptable because the subject *kono taipu-no kutsu* ‘this type of shoes’ is directly affected by the verb *haku* ‘wear’ and (ib) is grammatically correct because the subject *boku* ‘I’ is adversely affected by the event *the teacher gives me up*.

- (i) a. *kono taipu-no kutsu-wa saikin ookuno*
 this type-GEN shoes-TOP recently many
 wakai josei-ni hak-are-teiru
 young woman-by wear-PASS-PROG
 ‘This type of shoes have been worn by many young women recently.’

(Takami 2011: 30)

- b. *boku-wa sensei-ni akirame-rare-teiru.*
 I-TOP teacher-by give.up-PASS-PROG
 ‘I am given up by the teacher.’

(Takami 2011: 39)

(56) Characterizational Property of Passive Sentences with Inanimate Subjects:

Passive sentences with inanimate subjects and human by-agentives are acceptable to the extent that they can be interpreted as sentences that define or characterize the subjects.

(Kuno and Takami 2004: 151)

(57)a. * kono hon-wa Taro-ni yom-are-ta.

this book-TOP Taro-by read-PASS-PAST

‘This book was read by Taro.’

b. kono hon-wa tennōheika-ni-mo yom-are-teiru.

this book-TOP His.Majesty.the Emperor-by-even read-PASS-PROG

‘This is read even by His Majesty the Emperor.’

(Takami 1995: 100)

The third factor that may influence the usage of by-passives is heaviness. Seoane (2009) observed that the subject tends to be shorter than the by-phrase in English by-passives. It should be noted that there is a preference for the short element to precede the long one in English (Hawkins 1994; Rosenbach 2005; Wasow 2002). This ‘short-before-

long' preference was observed in English passive by Seoane (2009). Although there is an opposite preference in the sense that the long constituent tends to come before the short one in Japanese (Dryer 1980; Howkins 1994; Imamura 2014, 2015a; Kondo and Yamashita 2011; Saeki 1960; Suzuki 2000; Yamashita 2002; Yamashita and Chang 2001), it is conceivable that heaviness affects the choice between active sentences and by-passive sentences in Japanese. To the best of my knowledge, it has never been claimed that heaviness has an impact on by-passives in Japanese. To assess the validity of this hypothesis, it is necessary to investigate the relative length of the subject and the byphrase in Japanese by-passives.

The fourth possibility is that the choice between *ni*- and *niyotte*- passives counts on information structure. It has been observed across many languages that topicality has a great influence on the choice of passives. A series of works by Cooreman (1982, 1985, 1987, 1992) have demonstrated that the patient is more topical than the agent in Chamorro passives. Specifically, Cooreman (1982: 289) declares that passives are selected when the patient is more topical than the agent in Chamorro. In addition, Cooreman (1987: 76) observed that patients were more topical in one passive (*IN*-passive) than in the other passive (*MA*-passive) in Chamorro. This result indicates that the degree of topicality determines the choice between passives in Chamorro. In English, Birner (1996, 2004)

observed that the subject tends to be older than the by-phrase in passive sentences. In (58a), *he* is once mentioned in the immediately preceding context whereas *Ivan Allen Jr* is discourse new information. Namely, the subject is older than the by-phrase. Therefore, (58a) is an acceptable passive sentence. In contrast, in (58b), *the major* is discourse new information while *him* is discourse old information. In other words, the subject is newer than the by-phrase. Thus, (58b) does not follow the constraint that the subject must be older than the by-phrase and results in an unacceptable sentence. Yet, when a by-phrase is realized as a zero agent, which has an antecedent in the preceding context but has no phonetic form, by-phrases are apt to be older than subjects (Arrese 1997). It seems that there are interactions between constructions and forms of nouns.

(58) a. The mayor's present term of office expires Jan. 1. *He will be succeeded by Ivan Allen Jr...*

b. Ivan Allen Jr. will take office Jan. 1. # *The major will be succeeded by him.*

(Birner 2004: 51)

Although it has been revealed that passives are cross-linguistically influenced by information structure, it is unclear whether Japanese passives are affected by information

structure. It is conceivable that discourse contexts make no impression on Japanese by-passives because other options such as scrambling may be used for marking the topicality of the patient instead of by-passives. Furthermore, even if information structure impacts by-passives in Japanese, the criteria of the choice between the *ni*-passive and the *niyotte*-passive are obscure. Hence, the present study inspects the effects of discourse contexts on *ni*- and *niyotte*-passives. On top of that, previous studies do not take frequency into account in order to scrutinize the influence of animacy on *ni*- and *niyotte*-passives. The present study looks into the effects of animacy on the basis of the corpus analysis. It is possible that both information structure and animacy have broad implications for by-passives in Japanese. In fact, Iwasaki (2002: 128) found that passives are especially natural when the patient is identifiable and animate and the agent is inanimate, as shown in (59). Building upon Kuno and Kaburaki (1977), Iwasaki generalizes that passives are adopted when the speaker/writer describes the event from the view point of patient.

(59) Taro-ga bus-ni hane-rare-ta.

Taro-NOM bus-by hit-PASS-PAST

‘Taro was hit by a bus.’

(Iwasaki 2002: 128)

However, I do not deal with affectedness. This is because the criteria of affectedness are ambiguous and quantitative approaches do not match this concept. For the purpose of objective analysis, affectedness is excluded from my analysis and information structure and animacy are taken into consideration. Moreover, as far as I know, there have been no studies that examined the relationship between heaviness and by-passive in Japanese. As a pilot study, chapter 7 investigates the effects of heaviness on by-passives in Japanese

2.2.5. Passive Related Constructions

There are three usages of the *rare*-morpheme in addition to the passive. First, *rare*-morpheme is applicable to the potential construction, as exemplified by (60a). This construction ‘describes the quality of an entity coded as the subject’ (Iwasaki 2002: 139). Second, the spontaneous construction contains a *rare*-morpheme. This construction makes reference to ‘an event that automatically occurs, or a state that spontaneously obtains without the intervention of an agent’ (Shibatani 1985: 827). For the spontaneous meaning, only a limited number of verbs can be applicable to this construction. More specifically, spontaneous meaning is compatible with the verbs that refer to mental

activities such as *omou* ‘think’, *shinobu* ‘miss’ *omoidasu* ‘recall’, *omoiyaru* ‘consider’, *matsu* ‘wait for’, *anjiru* ‘worry’, *kanjiru* ‘feel’, *kuiru* ‘regret’, and *wasureru* ‘forget’ (Yoshida 1971: 117-8, 132-3). Note that (60b) includes a mental verb *shinobu*. Therefore, (60b) can be taken as describing a spontaneous event. With regard to the continuity between the potential use and the spontaneous use, Iwasaki (2002: 139) states that ‘the spontaneous and potential sentences are semantically contiguous because both describe a situation in which a certain event or state comes out naturally with no agent-caused intervention. In fact, *dekiru* ‘can do’, the potential form of *suru* ‘do’, has an etymological source, *de-kuru* < *ide-kuru* ‘appear-come’ (Ohno 1988: 188), suggesting an intimate relationship between ‘X coming into being’ (spontaneous) and ‘being able to obtain X’ (potential)’. Third, *rare*-morpheme can be utilized in order to show respect to the person coded as the subject of a sentence, as shown in (60c). It should be noted that the subject honorific sentence (60c) can be interpreted as the agentless passive sentence whose meaning is *The teacher was laughed at (by his or her students)*. There are some structural ambiguities between the passive usage and the other usages without discourse contexts.

(60) a. Potential

boku-wa nemur-are-nakat-ta.

I-TOP sleep-POTEN-NEG-PAST

‘I could not sleep.’

b. Spontaneous

mukashi-ga shinob-are-ru.

old.days-NOM think.about-SPON-NONPAST

‘An old time comes (spontaneously) to mind.’

c. Subject Honorific

sensei-ga waraw-are-ta.

teacher-NOM laugh-HON-PAST

‘The teacher laughter (hon).’

(Shibatani 1985: 823)

Why does *rare*-morpheme have the function to form not only the passive construction but also the potential, spontaneous, or subject honorific constructions?

Historical evidence provides a reason why the *rare*-morpheme is used in different constructions. In Japanese, it has been indicated that passive or spontaneous usages are the oldest among passive, spontaneous, potential, and honorific constructions (Hashimoto

1969; Kinsui 1997; Kuginuki 1991). Kinsui (1997) states that potential construction is considered to have derived from spontaneous construction and honorific construction is assumed to have derived from passive meaning. In consequence, there are historical connections among four uses of the *rare*-morpheme. The different uses of *rare*-morpheme occurred from the common prototypical *rare*-morpheme, whose function is shown in (61). Therefore, the same morpheme can be used for different constructions in Modern Japanese.

(61) The prototypical function of *(r)are*:

To remove the agent of an active verb from subject position while retaining the nature of the verbal clause.

(Kinsui 1997: 767)

Although I have just mentioned that ‘the same morpheme can be used for different constructions in Modern Japanese’, Japanese is moving towards differentiating the potential construction from the passive construction (Iwasaki 2002: 141). In (62), for example, only the short-form of *rare*-morpheme is permitted. In other words, the short-form, *hanas-e-ru* and *am-e-ru*, are grammatical, but the long form, *hanas-are-ru* and *am-*

are-ru, are ungrammatical for expressing the potential meaning. In the same way, it is grammatical to drop *ra* from a *rare*-morpheme in casual conversation, as shown in (63). Note that both the standard *rare*-form (e.g. *kari-rare-ru*) and the *ra*-deleted form (e.g. *kari-re-ru*) are grammatically correct. Although prescriptive grammarians believe that *ra*-deleted form is not ‘correct’, the choice of the *rare*-morpheme for potential constriction fluctuates between *rare*-form and *ra*-deleted form in spoken Japanese. These facts indicate that the shorter-form has emerged as standing for potential meaning. ‘Though this process is not complete, such a shift has been gaining strong momentum, increasing the form-meaning isomorphism’ (Iwasaki 2002: 141).

(62) a. Taro-wa eigo-ga * hanas-are-ru / hanas-e-ru.

Taro-DAT English-NOM speak-POTEN-NONPAST

‘Taro can speak English.’

b. Masako-wa sweater-ga * am-are-ru / am-e-ru.

Masako-TOP sweater-NOM knit-POTEN-NONPAST

‘Masako can knit a sweater.’

(Iwasaki 2002: 140)

(63) a. kore-Ø tabe-re-ru/tabe-rare-ru-no?

this-Ø eat-POTEN-NONPAST-Q

‘Is it edible?’

b. Ø enpitsu-Ø kari-re-ru/kari-rare-ru-Ø?

(I) pencil-Ø borrow-POTEN-NONPAST-Q

‘Can I borrow a pencil?’

2.2.6. Postposing

Japanese is regarded as a SOV language, but it is a relatively free word order language in terms of syntax (Fujii 1991: Hinds 1983; Saito 1985: Simon 1989). Although Farmer (1984: 32) claims that lexically governed phrasal constituents cannot appear to the right of the verb as shown in (64), it is not uncommon to find constituents following the verb at the matrix clause. As pointed out by Kuno (1978: 67), written Japanese tends to preserve verb-final characteristic but any pre-verbal constituent can be moved from its canonical position toward the post-predicate position, as shown in (65). This construction

is called ‘postposing’ because the non-verbal item is positioned post-verbally¹³.

- (64) a. * Mary-ga tabe-ru, okashi-o.
 Mary-NOM eat-NONPAST sweets-ACC
 ‘Mary eats sweets.’
- b. * okashi-o tabe-ru, Mary-ga.
 sweets-ACC eat-NONPAST Mary-NOM
 ‘Mary eats sweets.’

(Farmer 1984: 32)

- (65) a. Mary-ga tabe-ru-nda, okashi-o.
 Mary-NOM eat-NONPAST-COP sweets-ACC
 ‘Mary eats sweets.’
- b. okashi-o tabe-ru-nda, Mary-ga.

¹³ As Takami (1995: 220) indicates, it is conceivable that postposed elements are base-generated in post-verbal positions. Likewise, Tanaka (2001) even claims that a postposed element is a remnant of an extra clause, as shown in (i). The structure of (ia) is shown in (ib).

- (i) a. John-ga yon-da-yo, LGB-o.
 John-NOM read-PAST-FP LGB-ACC
 ‘John read LGB.’

(Tanaka 2001: 551)

- b. John-ga pro yon-da-yo, LGB-o [~~John-ga-t_i-yon-da-yo~~]

(Tanaka 2001: 558)

sweets-ACC eat-NONPAST-COP Mary-NOM

‘Mary eats sweets.’

Generally speaking, the acceptability of postposing is dramatically increased when the verb is followed by the copula expression *da*. In fact, by adding the copula *da* to the sentences in (64), the acceptability is increased drastically as shown in (65). The only difference between (64) and (65) is the existence of the copula *da*. The reason why (65) is much better than (64) is that the postposed elements are ‘transparent’ when they are followed by the copula *da*. Hudson (1993: 10) states that ‘the copula is the most transparent, that existential verbs are the second most transparent, and that specific action verbs and adjectives are the least so’ and that ‘more transparent the semantic content of the main clause is, the easier it is to postpose from a complex NP’. Note that (66a) includes the copula *da* while (66b) does not, resulting in the difference in acceptability between them. This example clearly shows that existence of the copula operates powerfully upon the acceptability of postposing.

(66) a. kore-wa kinō motteki-ta wain da-yo Mari-ga.

this-TOP yesterday bring-PAST wine COP-FP Mari-NOM

‘This is the wine which Mari brought yesterday.’

b. * kinō motteki-ta wain-o nomu-yo Mari-ga.

yesterday bring-PAST wine-ACC drink-FP Mari-NOM

‘I will drink the wine which Mari brought yesterday.’

(Hudson 1993: 7-8)

With regard to syntactic aspects, postposing exhibits flexibility to a large degree. Simon (1989: 6) clearly states that ‘one noteworthy feature of postposed sentences is that virtually any constituent can appear in postverbal position; for example, NP, PP, AP, AdvP, demonstrative and conjunction, and a combination thereof. A postposed NP may be of any argument type, and it may be a genitive phrase. Likewise, a postposed PP may be of any semantic type. Another feature is that it is not unusual for two or three elements to appear here, although it is rare with four or more’. (67) exemplifies that postposing is possible for any type of constituent. Note that (67a) is the canonical word order sentence without any postposing, and other examples illustrate that a variety of constituents can be postposed. To put it more concretely, (67b) includes an object postposing, (67c) contains a subject postposing, and (67d) comprises an adverb postposing. In addition, (68) instances that postposing is possible for any number of constituents. (68a) postposes only

one constituent, (68b) postposes two constituents, (68c) postposes three constituents, and (68d) postposes four constituents.

- (67) a. Ken-ga kinō Chopin-o hii-ta-yo.
 Ken-NOM yesterday Chopin-ACC play-PAST-FP
 ‘Ken played Chopin yesterday.’
- b. Ken-ga kinō hii-ta-yo Chopin-o.
 Ken-NOM yesterday play-PAST-FP Chopin-ACC
 ‘Ken played Chopin yesterday.’
- c. kinō Chopin-o hii-ta-yo Ken-ga.
 yesterday Chopin-ACC play-PAST-FP Ken-NOM
 ‘Ken played Chopin yesterday.’
- d. Ken-ga Chopin-o hii-ta-yo kinō.
 Ken-NOM Chopin-ACC play-PAST-FP yesterday
 ‘Ken played Chopin yesterday.’

(Simon 1989: 2)

- (68) a. Hanako-ga toshokan-de Ken-ni age-ta-yo hon-o.

Hanako-NOM library-LOC Ken-DAT give-PAST-FP book-ACC

‘Hanako gave a book to Ken in the library.’

b. Hanako-ga toshokan-de age-ta-yo Ken-ni hon-o.

Hanako-NOM library-LOC give-PAST-FP Ken-DAT book-ACC

‘Hanako gave a book to Ken in the library.’

c. Hanako-ga age-ta-yo toshokan-de Ken-ni hon-o.

Hanako-NOM give-PAST-FP library-LOC Ken-DAT book-ACC

‘Hanako gave a book to Ken in the library.’

d. age-ta-yo Hanako-ga toshokan-de Ken-ni hon-o.

give-PAST-FP Hanako-NOM library-LOC Ken-DAT book-ACC

‘Hanako gave a book to Ken in the library.’

(Shimojo 1995: 109)

Furthermore, Seraku and Ohtani (2016:222) even state that ‘Japanese postposing allows a wider variety of syntactic element to be postposed than many other languages. This syntactic flexibility has been assumed in the theoretical/functional linguistic works, but it needs to be empirically confirmed’. To this end, they provide empirical evidence about the syntactic flexibility of postposed elements, as shown in (69). It should be noted

that all the examples in (69) were assembled from 6 Japanese novels published in 2000's.
and thus reflect the actual usage of postposing in written Japanese.

(69) a. Noun Phrase

yoku-ga	nai-na,	kimi-wa
greed-NOM	absent-FP	you-TOP

‘You are not greedy.’

b. Adverb Phrase

tomari-da-na,	tabun
stay-COP-FP	probably

‘Probably I will stay (in this hotel tonight).’

c. Postposition Phrase

mainichi-noyōni	oaishitemasu-yo,	40-kai-de
everyday-like	meet.POL-FP	40-floor-at

‘I see you almost everyday at the 40th floor.’

d. Complement Clause

tomodachi-kara	kii-ta-mon	[Mei-to	Satsuki-wa	mō]
friend-from	hear-PAST-FP	[Mei-and	Satsuki-TOP	already

kono-yo-ni inai-nda]-tte

this-world-in absent-COP]-COMP

‘I heard from my friend that Mei and Satsuki were not in this world any longer.’

e. Adverbial Clause

daijōbu, [chanto otoko-kotoba-de shabet-ta-shi [asobini

all.right [for.sure male-language-in speak-PAST-and [to.play

kiteiru tomodachi-da]-tte usotsuiteoita]-kara.

has.come friend-COP]-COMP has.told.a.lie]-because

‘It’s all right because I spoke in male language for sure and also because I told a lie, pretending I am your friend who has just come to see you.’

f. Noun-Modifier (relative clause)

eiga-de kooyuu-sīn aru-yone hajimete namae-de yobu.

film-in like.this-scene exist-FP for.the.first.time name-by call

‘There is a scene where one calls someone by his/her name for the first time, isn’t there?’

g. Noun-Modifier (genitive)

onaji-kurasu-no Hiroki-kun-da, bokura-to-wa bessekai-no

the.same-class-GEN Hiroki-N.SU-COP we-and-TOP another.world-GEN

‘He is Hiroki from our classroom, living in a different world from us.’

h. Connective

‘kekkōdesu’ ja-nai-ndatte dakara

‘ok’ COP-NEG-FP as.I.said

‘As I said, it’s not ‘ok’.’

i. Interjection

Garcia Márquez-goe-da-wa, korya

Garcia Márquez-surpassing-COP-TOP oh

‘Oh, my experience would surpass the world depicted by Garcia Márquez.’

(Seraku and Ohtani 2016: 222-3)

Although it has been held since Kuno (1978) that postposing is restricted to main clauses, Seraku and Ohtani’s narrative findings show that postposing may take place within embedded clauses. In (70), for example, ‘the postposed element *kono hito* ‘this person’ serves as a subject of the embedded verb *wakaru* ‘know’ (< *wakatteru*), rather than the matrix verb *omou* ‘think’ (Seraku and Ohtani 2016: 224). In sum, postposing displays syntactic flexibilities to a large degree as shown in (67), (68), (69), and (70).

(70) [yappari wakatteru kono hito]-to watashi-wa omou.
 [as.expected know this person]-COMP I-TOP think
 ‘I think this person knows the thing.’

Regarding the discourse functions of postposing, several studies claim that postposed elements are less important than pre-predicate constituents (Kamio and Takami 1998; Maynard 1989; Shimojo 1995, 2005; Simon 1989; Takami 1995). Specifically, Maynard (1989: 35) asserts that ‘when a speaker introduces two pieces of totally new information which are neither familiar nor easily deducible, one may be chosen to be postposed simply because the piece of information the postposed element bears is not considered as important or relevant as the other’. Namely, unimportant elements become background information via postposing. On the other hand, Simon (1989: 189) insists that postposed elements ‘are simply results of important or urgent information coming to the speaker’s mind first and thus being vocalized first, especially under time pressure’. In other words, according to Simon, postposing is a by-product of ‘Important Information First’ principle. Maynard’s and Simon’s analyses are two sides of the same coin. The former pays attention to the fact that postposed constituents are unimportant information whereas the latter focusses the fact that non-postposed elements are important

information. In either case, postposed constituents tend to be less important than other constituents, as proposed by Takami (1995: 228). Let us illustrate this proposal by looking at the example (71). In (71a), the *wh*-phrase, *nani-o* ‘what’, is postposed, resulting in an unacceptable sentence. Note that the *wh*-phrase is the focus of a sentence and other elements are the presupposition. This means that the *wh*-phrase is more important than other constituents. In (71a), the *wh*-phrase, *nani-o* ‘what’, is the most important information of the sentence but postposed. This is why (71a) is unacceptable. In contrast, (71b) is an acceptable postposed sentence. The postposed object, *sono-hon* ‘that book’, is marked by the topic marker *WA* and works as the theme of (71b). Thus, the postposed element is the topic and is not the most important information here, creating an acceptable postposed sentence.

- (71) a. * *kimi-wa tabe-ta-ndesu-ka? nani-o*
 you-TOP eat-PAST-COP-Q what-ACC
 ‘What did you eat?’
- b. *mō yomi-mashi-ta-yo sono hon-wa*
 already read-HON-PAST-FP that book-TOP
 ‘I’ve already read that book.’

(Takami 1995: 227)

Although Takami's generalization explains the difference in the acceptability between (71a) and (71b), Hinds (1982) points out that postposed constituents can be important information. In particular, he argues that the main function of postposing is i) the resolution of ambiguity, i.e. information is added because the hearer may not be able to understand the intended message without the information presented at the postposed positions, and ii) the emphasis, i.e. the postposed element is recoverable from the discourse context but the speaker postposes it in order to place some sort of emphasis on the utterance. Let us look at (72) and (73) to illustrate the above functions. In (72e), the postposed subject *hondana* 'bookcase' cannot be omitted because the speaker needed to specify the referential ambiguity caused in the context. Without clarifying the referent of the subject, the hearer cannot judge whether the speaker talks about the *keyboard* or the *bookcase*. In (72), the postposed element complements the information conveyed by the pre-predicate constituents. Next, in (73b), the postposed element is modified by the demonstrative *ano* 'that'. In this context, the demonstrative *ano* emphasizes the value of *Cambridge University*, implying that Cambridge is a very famous university. To put it other way, the postposed dative object is emphasized here.

- (72) a. watashi-Ø hondana-Ø hoshikat-ta-nda-yo-ne
I-Ø bookcase-Ø want-PAST-COP-FP-FP

‘I wanted a bookcase.’

- b. Ø kībōdo-ga hoshikat-ta-no?
(you) keyboard-NOM want-PAST-Q

‘Did (you) want a keyboard?’

- c. Ø nakat-ta-no
(they) exist-PAST-IT

‘There were no (bookcases).’

- d. a Ø nakat-ta-no?
oh (it) exist-PAST-Q
‘Oh, there were no (keyboards)?’

- e. ikko-mo nakat-ta-no hondana-ga
one.thing-even exist-PAST-IT bookcase-NOM

‘There was not a single bookcase.’

(Shimojo 2005: 213)

- (73) Taro-wa ukat-ta-nda ano Cambridge-daigaku-ni
 Taro-NOM pass-PAST-COP that Cambridge-university-DAT
 ‘Taro was accepted by the Cambridge University.’

What I should note here is that Takami’s analysis contradicts Hinds’ analysis with respect to the importance of the postposed elements; the former claims that postposed elements are unimportant information while the latter argues that the postposed constituents are important information. This discrepancy may be caused by the difference in the definition of postposing. According to Clancy (1982), Simon (1989), Ono and Suzuki (1992), and Shimojo (1995, 2005), there are two kinds of postposing. The first type is labelled as *pause type* of postposing. In this type of postposing, the speaker puts a noticeable pause between the verb and the postposed element. The second type is called *non-pause type* of postposing. This type of postposing does not comprise a remarkable pause. Based on the distinction between pause type and non-pause type postposing, it has been claimed that the usage of *afterthought* correlates with *pause type* postposing (Shimojo 2005; Simon 1989). When the postposed element can be regarded as afterthought, it is simply added to the sentence final position (Shibatani 1990). Simon (1989: 43) clearly asserts that ‘an afterthought analysis may be well-motivated in cases

in which a considerable pause intervenes between the verb and the postverbal element so that there is sufficient time for the speaker to reflect on the statement he/she originally makes or to monitor the hearer's reaction. It does not seem valid, however, in many other cases when the postverbal elements are added following little or no pause'. With regard to the discourse functions of non-pause type postposing, Shimojo (2005: 216) summarizes them as stated in (74). The idea of (74a) and (74b) was first proposed by Kuno (1978). Kuno (1978: 68) alleges that postposed elements are i) recoverable from discourse context but repeated later for the confirmation of the message or ii) supplementary information. As for the analysis proposed in (74c), Simon (1989) supports this idea.

(74) a. Recoverability

Post-predicative phrases represent recoverable information such that the information does not need to be overtly present in the utterance.

b. Deducibility

Post-predicative phrases represent deducible information such that the omission of the information does not cause interference with the flow of discourse.

c. Urgency / relevance

Urgent or immediately relevant information is presented first, which results in

postposing of other information.

(Shimojo 2005: 216)

Let us exemplify the proposals shown in (74) by looking at (75), (76), and (77).

(75) is an example of recoverability. In (75b), the postposed subject *anohito* ‘that person’ is recoverable from discourse context because he is once referred to in the immediately preceding context (75a) as *ano mohikan-no megane* ‘that Mohican hair guy wearing glasses’.

(75) a. *ano mohikan-no megane-wa?*

That Mohican-LK glasses-TOP

‘What about that Mohican (hair guy) wearing glasses?’

b. a *dekiru-yo ano-hito- Ø*

oh intelligent-FP that-person- Ø

‘Oh, that person is intelligent.’

(Shimojo 2005: 218)

An example of deducibility is shown in (76). In (76c), the postposed element *yamucha*

‘dim sum’ is not recoverable from the previous contexts because it is discourse-new information. Yet, omission of the postposed constituent would not cause difficulty for the hearer to follow the conversation. Although the ellipsis would make the exact identification of the food unspecified, the hearer would assume that the speaker ate something delicious. It is not too much to say that the postposed element is redundant information.

- (76) a. watashi-wa tabe-ru koto-ga mokuteki-de
 I-TOP eat-NONPAST NMZ-NOM purpose-COP.and

‘As for me, eating was the purpose...’

- b. imōto-wa oyōfuku
 younger.sister-TOP clothes

‘As for my younger sister, clothes.’

- c. oishikattade
 delicious

‘Delicious...’

- d. oishikat-ta yamucha-toka-wa
 delicious-PAST dim.sum-etc.-TOP

‘Food like dim sum was delicious.’

(Shimojo 2005: 219)

In (77), postposing occurs due to the *Attend to the most urgent task first* principle, (Givón 1988:252). Under the case where this principle works, the most important information must be provided first. ‘A communicative task is more urgent when the information to be communicated is either *less predictable* or *more important*’ (Givón 1988:275). Note that the example (77) consists of question-answer pairs. In (77b), the speaker must answer the question raised by the preceding sentence (77a). To this end, the speaker places the predicate first because it is the most important information. Consequently, unimportant information is postposed here.

(77) a. anmari it-ta koto nai-no buffet style

much go-PAST NMZ NEG-FP buffet style

‘Haven’t you been to buffet style much?’

b. nai-wa sonna-no

NEG-FP that.kind-one

‘That, I haven’t.’

(Simon 1989: 193)

On the basis of spoken Japanese data, Shimojo (2005) proposes the property of the postposed elements, as shown in (78). Note that this generalization is adopted for *non-pause type* of postposing because Shimojo's data do not include pause type of postposing. The unique property of (78) is that the use of postposing is cataphoric defocusing of the postposed element. The cataphorically defocussed referents are unlikely to be taken over to the succeeding utterances. With respect to the definition of defocusing, Shimojo (2005: 18) states that 'defocusing is the process of deactivating a referent in one's cognitive focus of attention. Defocusing of a referent occurs if there is no longer focusing of the referent'.

(78) The post-predicative encoding of arguments

The information encoded in post-predicative arguments is unimportant such that the information is defocused in the cataphoric context.

(Shimojo 2005: 224)

Let us look at (79) in order to illustrate the proposal stated in (78). It should be noticed that (79) includes postposing. The postposed referent *Zidane* was the topic of the

discourse before (79l) because he had been mentioned repeatedly in the preceding discourse. Specifically, he was referred to in (79a), (79c), (79e), (79f), (79h), and (79l). However, he disappeared from the discourse after the postposing. In fact, the following utterances do not make mention of *Zidane* at all. In other words, *Zidane* was defocussed in (79l) because he was postposed. In consequence, there occurred a clear topic shift initiated by the same speaker in (79l). The speaker changed the topic from *Zidane*. Indeed, the following utterances talk about *Korea*.

(79) a. Ø nijūkyū Kazu-san-to issho-da-ne
 (he) 29 Kazu-Mr.-as same-COP-FP
 ‘(Zidane) is 29..., Mr. Kazu’s (age).’

b. a honto sokka
 oh true I.see
 ‘Oh, right, I see.’

c. Ø nijūkyū-da-kara mada
 (he) 29-COP-because still
 ‘Because (Zidane) is still 29.’

d. tsugi sanjūsan

next 33

'33 years old next time (i.e. next World Cup).'

e. Ø maa ōgosho-da-yo-ne

(he) F seasoned.player-COP-FP-FP

'(Zidane) will be a seasoned player.'

f. Ø ōgosho-de ike-nai koto-wa

(he) seasoned.player-by can.go-NEG NMZ-TOP

g. nai-kedo

exist-NEG-but

'It's not impossible that (Zidane) will go (to the World Cup) as a seasoned player.'

h. demo Zidane-ga anmari deshabacchau-to

but Zidane-NOM too.many play.important.roles-if

'But if Zidane plays too many important roles.'

i. Furansu-wa nobi-naku-naru-yone

France-TOP grow-NEG-become-FP

'France won't grow.'

j. soo da nee

so COP IT

‘Right.’

k. akirakani nee

obviously IT

‘Obviously.’

l. daka sore-Ø wakatte-n-janai? Zidane-Ø

so that-Ø understand-NMZ-COP.NEG Zidane-Ø

‘So, doesn’t Zidane know that?’

m. sokka Ø wakate sodate-nai-to

I.see (it) young.player raise-NEG-if

‘I see, unless (France) raises young player...’

n. ato-wa ko Korea

rest-TOP FRG Korea

‘And then...Korea.’

o. mondai-wa Koriya

matter-TOP Korea

‘Korea is the matter.’

(Shimojo 2005: 215)

In terms of given/new distinction, Fujii (1991) examined the discourse status of postposed elements in spoken Japanese and observed that about half of the postposed elements are new information and the rest of the examples are relevant to given information. Thus, postposing apparently does not make any prediction about the discourse status of postposed elements. With regard to this issue, Nakagawa, Asao, and Nagaya (2008) assert that ‘information status of postposed elements in right-dislocation sentences can be divided into two types depending on their contour patterns: the single-contour type (the whole sentence is uttered within a single intonation contour) and the double-contour type (the postposed element in the sentence is uttered with an intonation contour separate from the main clause)’ and that pause type postposing is germane to new information whereas non-pause type postposing is pertinent to given information, as shown in (80). Let us illustrate (80) by looking at (81), (82), and (83).

- (80) a. Postposed elements of single-contour type combined with their main clauses
tend to be old information.
- b. Postposed elements of double-contour type tend to be unexpected, new
information.

It should be noticed that (81a) and (81b) are uttered ‘in a single coherent contour without a pause, and pitch and intensity rise only in the main clause’ (Nakagawa, Asao, and Nagaya 2008:6). In other words, (81a) and (81b) are non-pause type postposing sentences. In (81a), the postposed argument is *kimi* ‘you’ and there are no phonological boundaries between *dame-da-ne* ‘you are foolish’ and *kimi*. It should be noticed that the second person is a participant of the conversation and thus given information. In the same way, the postposed argument *watashi* ‘I’ is the first person pronoun. That is why the postposed argument is given information in (81b). Taken together, the postposed arguments in non-pause type postposing convey given information.

(81) a. hontōni dame-da-ne kimi-wa

really foolish-COP-FP you-TOP

‘(You are) very foolish, you are.’

b. yat-te age-mas-hō watashi-ga

do-LK give-POL-OFFER I-NOM

‘(I) will do it for you, I.’

(Nakagawa, Asao, and Nagaya 2008: 6)

In (82a), the postposed element *kekkon-shi-tai-tte* ‘(I) want to marry (you)’ expresses new information because it is not mentioned in the previous discourse. This element is introduced here and explains the content of what *I* said. In (82b), the postposed argument belongs to new information because it is a *wh*-phrase. Note that (82b) is ‘uttered in two distinct coherent contours with a pause between the preposed and postposed elements, and pitch and intensity rise in both the postposed elements and the main clauses’ (Nakagawa, Asao, and Nagaya 2008:6). The example (82) indicates the correlation between pause type postposing and new information.

- (82) a. atashi it-ta-no... kekkon-shi-tai-tte
 I say-PAST-FP marry-do-want-COMP
 ‘I said, ‘(I) want to marry (you)’.’
- b. Yamada-san-tte omiyage-ni nani-o
 yamada-Mr.-TOP souvenir-for what-ACC
 kat-ta-no...? dare-ni
 buy-PAST-FP who-for
 ‘What did Mr. Yamada buy for souvenirs for whom?’

The contrast between pause type postposing and non-pause type one is clearly exemplified in (83) and (84). In (83b) and (83b'), *kome* 'rice' is new information because it was not mentioned in the immediately preceding context (83a). When *kome* is pronounced with a pause, the sentence becomes acceptable as shown in (83b). By contrast, when *kome* is uttered without a pause, the sentence will be unacceptable as shown in (83b'). This contrast clearly indicates that pause type postposing coincides with new information and that non-pause type postposing disagrees with new information. When the postposed element is new information, it must be uttered with a pause.

(83) a. ano o-sushi-ya-san oishii?

that POL-sushi-bar-POL good

'Is that sushi bar good?'

b. oishii-yo... kome-wa

good-FP rice-TOP

'The rice is good (but others not).'

b'. ?? oishiiyo kome-wa

good-FP rice-TOP

‘The rice is good (but others not).’

(Nakagawa, Asao, and Nagaya 2008:7)

In (84b) and (84b’), *kome* is given information because it appeared in the preceding sentence (84a). As a reply to (84a), the pause type postposing sentence (84b) is unacceptable but the non-pause type postposing sentence (84b’) is acceptable. This fact shows the correlation between non-pause type postposing and given information. When the postposed element is given information, it must be uttered in a single contour without a pause.

(84) a. boku kome kirai

 I rice hate

 ‘I don’t like rice.’

 b. ? oishii-yo... kome-wa

 good-FP rice-TOP

 ‘Rice is good.’

 b’. oishii-yo kome-wa

good-FP rice-TOP

‘Rice is good.’

(Nakagawa, Asao, and Nagaya 2008:7)

In sum, postposing is an amalgam of two types of different operations: *pause type* postposing and *non-pause type* postposing. Pause type postposing is tied up with the usage of *afterthought*. On the other hand, non-pause type postposing is linked with unimportant postposed elements. Unimportant information tends to be cataphorically defocussed, resulting in the low frequency in the following context. In terms of given/new distinction, pause type postposing correlates with new information whereas non-pause type postposing is relevant to given information. However, there are many functions related to postposing; recoverability, deductibility, emphasis, supplement information, and disambiguation. It may be a fruitful avenue to scrutinize the functions of postposing on the ground that postposing has many discourse functions.

2.3. Givónian Approach

2.3.1. Why Givónian Approach?

Since the early contributions of Prague School, numerous studies have investigated the

interactions between discourse and grammar. In particular, it is a linguistic truism that human languages tend to order constituents in order that given information comes before new information. In other words, all other things being equal, the speaker prefers starting a sentence from what is known to what is not known. An integral part of Prague School is Communicative Dynamism (CD), which is ‘the relative extent to which a linguistic element contributes towards the further development of the communication’ (Firbas 1992: 8). The degree of CD of a word is the extent to which it pushes the communication forward. Those who belong to Prague School presuppose that the elements with least CD comes before those with more CD (e.g. Firbas 1964, 1966). What I should emphasize here is that the elements with the least CD are contextually known information whereas those with more CD are unknown information. Therefore, CD determines the linear orders of words in a sentence so that given information precedes new information.

Although there is a general consensus that given information tends to come earlier than new information, the definition of givenness has been controversial for many years. Actually, there are many approaches about how to define givenness. Firstly, it is possible to define givenness as ‘shared knowledge’ between the speaker and the hearer; when ‘the speaker assumes that the hearer ‘knows’, assumes, or can infer a particular thing (but is not necessarily thinking about it)’ (Prince 1981: 230). Secondly, givenness can be defined

in the sense of ‘saliency’ (Prince 1981: 228). Chafe (1976: 30) argues that ‘given (or old) information is that knowledge which the speaker assumes to be in the consciousness of the addressee at the time of the utterance’. In the same way, Lambrecht (1996: 50) maintains that ‘old information, then, is the sum of knowledge evoked in a sentence which a speaker assumes to be already available in the hearer’s mind at the time of utterance’. Thirdly, givenness can be defined in terms of ‘predictability or recoverability’; ‘the speaker assumes that the hearer can predict or could have predicted that a particular linguistic item will or would occur in a particular position within a sentence’ (Prince 1981: 226). Specifically, Kuno (1972: 269) regards predictable information as given information. In addition, Kuno (1978: 17) states that given information is unimportant information because it is recoverable from discourse contexts.

All of these definitions are to some degree subjective in that they depend on speaker-assumptions. It is hard to judge on the basis of discourse contexts whether the hearer ‘could have predicted’, ‘knows or can infer’, or is ‘conscious of’ the element in a sentence. In analyzing contexts, you will have to make difficult decisions regarding the degree of givenness of the referents. Therefore, it might be wiser to disregard these definitions and to develop concepts which are more operational. To this end, Givón (1983, 1988, 1990, 1994)’s approach is employed in this study. Instead of depending on the

mental status of the participants in the discourse, he takes only textual criteria into account. Although Givón (1990: 897) accepts the view that given information is assumed by the speaker to be ‘accessible’ to the hearer, he points out that it is difficult to calculate or quantify givenness directly. Hence, his approach attempts to calculate givenness indirectly from the text. This is because given information is equated with high referential accessibility within the text. The core intuition around what it means for a referent to express given information is that the referent is already entailed by the discourse. According to the Givónian approach, the elements once mentioned in the preceding contexts are considered to be given information. The advantage of this approach is that actually counting is evident and uncontroversial and thus the results of Givónian analyses are easily reproducible. In fact, two important concepts, RD and TP, are well-recognized measurement that are implementable without difficulty and their employment renders the results of my analysis reproducible. This also means that my results can be compared to the achievements of previous studies directly because many studies have investigated Japanese on the basis of RD and TP (Hinds 1978, 1982, 1983; Hinds and Hinds 1979; Nakagawa, Asao, and Nagaya 2008; Shimojo 1995, 2005, 2006; Watanabe 1989). In addition, the Givónian approach can measure the subtle differences in givenness between the referents because it can assess the degree of accessibility of referring expressions.

Lastly, this approach is compatible with corpus analysis because it measures the discourse status of the referents on the basis of text data. This leads to an objective description of grammatical operations. Because of the above reasons, I am going to delve into scrambling, topicalization, and passives from a view point of the Givónian approach.

2.3.2. What is Givónian Approach?

The Givónian approach is ‘a text-based qualified methodology, by which some obvious correlates of ‘predictability’, ‘accessibility’, or ‘continuity’ could be measured. It was suggested first, on general grounds, that the accessibility of a referent to the hearer is affected by the following four factors’ (Givón 1988: 247), which are summarized in (85). It should be noted that Givón excluded generic knowledge and the speech-situation from his analysis. This is because he seeks a scalar concept correlated with topicality that can be quantified in discourse easily. From Givón’s point of view, it is not a wise idea to depend on ‘the more elusive role of personality and memory of speakers and hearers, their specific life experience and the more subtle assumptions they make about each other and their respective abilities to identify’ specific and general referents (Givón 1983: 12). It is difficult or even impossible to calculate the effects of general knowledge and speech-situation on the topicality, that is accessibility and thematic importance, of a referent.

Instead of counting on such ambiguous concepts, he selected utilizing a text-based approach in order to measure the topicality objectively.

(85) Factors affecting predictability/accessibility of referents

- a. Referential Distance from the previous mention in the discourse (*memory decay*)
- b. Referential Complexity of the directly-preceding discourse environment (*other potential referents*)
- c. Semantic Information ('redundancies') from inside the clause (*ruling out other potential referents*)
- d. Thematic Information ('redundancies') from the preceding discourse (*ruling out other potential referents*)

(Givón 1988: 247-8)

Returning to (85), all of the factors are considered to 'affect the degree of difficulty that speakers/hearers may experience in identifying a topic in discourse, i.e. in filling it appropriately in their internal register, so that predications or new information transmitted about those topics would in turn be addressed correctly' (Givón 1983: 11). More specifically, (85a) is related to '*Length of absence from the register*: If a topic is indefinite

and thus introduced for the first time, it is *maximally difficult* to process, by definition, since a new file has to be opened for it. If a topic is definite and returns to the register after a long gap of absence, it is still difficult to process. The shorter is the gap of absence, the easier is topic identification; so that a topic that was there in the preceding clause is by definition *easiest* to identify and file correctly', (85b) is associated with '*Potential inference from other topics*: If no other topics are present in the immediately preceding discourse environment, i.e. the short-term erasable file, topic identification is *easiest*. The more other topics are present in the immediate register, the more *difficult* is the task of correct identification and filling of a topic, especially if those other topics qualify semantically (in terms of their 'selectional restrictions') for the *role* within the clause which the topic in question occupies', (85c) is connected with '*Availability of semantic information*: Especially when other topics clutter the immediately register and may thus create potential interference and difficulties in topic identification, the availability of so-called 'redundant' semantic information within the clause in question may play an important role in facilitating topic identification. This information comes primarily from the *predicate* of the clause, less so from verb-phrase *adverbials* (in particular of manner), less so from other *topics/participants* of the clause. This information concerns *generic probabilities* that a particular topic could participate in the clause in the specific

semantic/grammatical role in question (i.e. as subject, agent, patient, recipient etc.)’, and (85d) is relevant to ‘*Availability of thematic information*: Much like specific semantic information about permanent likelihoods, thematic information available from the preceding discourse could help in topic identification – especially when other topics in the register may potentially interfere. Such information establishes *specific probabilities* – for this story, in this chapter, in this section or in this thematic paragraph – as to the topic identification within a particular clause and in a particular role. It also establishes, for particular discourse, some ranking of *importance* of the various topics/ participants, and thus affects their behavior in terms of the *permanent file*, at least as pertaining to the particular discourse’ (Givón 1983: 11-2).

Among four factors shown in (85), (85a) and (85b) are more concrete and more easily measurable than (85c) and (85d). On the other hand, it is more difficult to qualify (85c) and (85d) than (85a) and (85b), although all of the factors are important in the sense that they are needed in order to determine the accessibility of the referent with precision. Since (85a) and (85b) are easy to qualify, they can be calculated by two concepts, Referential Distance (RD) and Potential Interference (PI), whose definitions are shown in (86a) and (86b) respectively. Note that both RD and PI calculate anaphoric topicality of a referent. Although ‘topic importance’ may be to some extent reflected in the

anaphoric continuity of reference, it is also calculated separately in terms of cataphoric topicality by using Topic Persistence (TP) which is defined in (86c). TP assesses cataphoric importance by calculating ‘how long a referent *persists* once it had been introduced’ (Givón 1988: 248).

(86) Discourse measurements of topicality:

Anaphoric (Psychological dimension: ‘Predictability’)

- a. Referential Distance: The number of clauses to the last occurrence in the preceding discourse
- b. Potential Interference: The number of semantically compatible referents within the preceding 3 clauses.

Cataphoric (Psychological dimension: ‘Importance’)

- c. Persistence: The number of recurrences of the referent in the subsequent 10 clauses.

(Givón 1988: 248)

There are some assumptions behind the discourse measurements of topicality. The measurements shown in (86) should be ‘performed on *texts* rather than on speakers or

hearers' and 'are fundamental in a certain chain of reasoning and empirical justification' (Givón 1983: 12). As shown in (87), the more continuous and recurrent an entity is, the more predictable and easier to process it is, and vice versa. Based on the cognitive correlation between text continuity and mental accessibility, (86) calculates the topicality of a referent indirectly from the text.

- (87) a. What is continuing is more predictable.
- b. What is predictable is easier to process
- or conversely
- c. What is discontinuous or disruptive or disruptive is less predictable
- d. What is less predictable, hence surprising, is harder to process

(Givón 1983: 12)

Although discourse measurements of topicality comprise three concepts, many followers have made use of only RD and TP (Cooreman 1982; Hinds 1978, 1982, 1983; Hinds and Hinds 1979; Imamura 2014, 2015a, 2016a, b; Imamura, Helgason, and Koizumi 2013, 2014; Nakagawa, Asao, and Nagaya 2008; Shimojo 1995, 2005, 2006;

Siewierska 1993; Watanabe 1989)¹⁴. The reason for this exclusion (at least partly) depends on the fact that PI itself is subjective in the sense that ‘semantically compatible referents’ are not defined clearly. On the other hand, it is operationally very simple to account for anaphoric and cataphoric topicality in terms of RD and TP. RD and TP are highly manageable concepts for the following two reasons. First, RD and TP can be calculated without failure because actually counting is evident and uncontroversial. Second, you do not have to make a difficult decision concerning the degree of the topicality of referents because RD and TP are quantitative data. Based on RD and TP, numerous studies have attempted to reveal the function of grammatical operations in a variety of languages because ‘context thus plays a crucial role in allowing syntax to be an efficient processing device while retaining-when one ignores context-a less-than-perfect correlation between code and message’ (Givón 1983: 16). Now, it is a standard analysis that measures only RD and TP under the framework of the Givónian approach. This approach can measure topicality in terms of the co-occurrence of the entity in its particular discourse domain. By doing this, it has made attempts to provide empirical data on the conditions under which a NP appears in a given syntactic position in terms of anaphoric and cataphoric topicality.

¹⁴ Some studies such as Myhill (1992) take PI into consideration when they measure anaphoric topicality of referents.

Before concluding this section, I would like to point out several drawbacks of the Givónian approach. As Givón (1993: 184) notes, RD ‘is primarily a *heuristic* measure of convenience. Distance by itself is not necessarily of great cognitive significance’. Although the larger the distance between different mentions of the same referent, the lower the degree of accessibility, the long distance itself does not guarantee low accessibility. For example, 1st person pronouns and 2nd person pronouns are always semi-active in the speaker’s mind without recourse to discourse context (Chafe 1987, 1994). In the same way, visually available referents in the conversation are predicted to be more accessible than those not available. Suppose that you are eating *spinach* now. This physical context may make *Popeye the Sailor* more accessible than other referents because of the connection between *spinach* and *Popeye*. In contrast, although the shorter the gap of absence, the higher the degree of accessibility, that distance itself does not mean high accessibility. For instance, if different mentions of the same referent are split into two paragraphs, the low RD may not correlate with high topicality. According to Chafe (1987: 29), paragraph boundaries are ‘evidence of major changes in peripheral activation’ so that a highly accessible referent may become a less accessible referent across paragraph boundaries. In some cases, RD itself may not be a good indicator for accessibility because it calculates the anaphoric continuity of referents indirectly. Despite

this drawback, RD does capture the general tendency of the discourse status of referents, as reported by Shimojo (2005) and Siewierska (1993). In addition, RD 'is the only quantifiable anaphoric measurement currently available' (Shimojo 2005: 72). This is also true of TP. TP is substantially the only quantifiable cataphoric measurement currently available, although TP 'does not directly reflect saliency in the sense of cognitive focus of attention, i.e. continued activation in mind'. If the TP value of a referent is 1, for example, this value 'can represent a case in which the coreferential expression is contained in the immediately following clause without interruption- hence the referent is salient for the distance from the measured clause to the immediately following clause'. On the other hand, this value 'may also represent a case in which the coreferential expression does not appear until the final clause of the specified cataphoric range'. In such a case, TP value 'has little offer with respect to saliency in the sense of continued attention'. Rather, the TP values 'suggests the 'persistent' in the sense of topic-worthiness (i.e. importance) of a given referent' (Shimojo 2005: 99).

Chapter 3

Methodological Preliminaries

3.1. Overview

Before presenting my corpus-based analysis, this chapter gives a brief description of the Balanced Corpus of Contemporary Written Japanese (namely, BCCWJ) and presents my research methods concerning discourse status, heaviness, and animacy. First, the criteria based on the Givónian approach is provided (see Section 2.3 about this approach). Specifically, I shall expand on my search methodology, focusing on the criteria of Referential Distance (RD) and Topic Persistence (TP), in order to deal with the specific issues related to the corpus analysis of Japanese constructions (Section 3.3). My method depends to a large degree on Givón (1977, 1978, 1979, 1983, 1988, 1990, 1993, 1994, 2001), Imamura (2014, 2015a, 2016a, b), and Shimojo (2005). Second, the criteria for calculating heaviness is presented. More specifically, section 3.4 gives an account of why heaviness should be measured by mora in Japanese. It claims that the mora is a practical and accurate tool for measuring the weight. Third, section 3.5 presents the criteria for measuring animacy. Although animacy is not a dichotomy concept, each referent is labeled as animate or inanimate due to the statistical reason. Some issues that arise due to

binary distinction are discussed. In a nutshell, the present chapter shows how to apply my categorizations to real texts from BCCWJ.

3.2. Balanced Corpus of Contemporary Written Japanese

The Balanced Corpus of Contemporary Written Japanese (BCCWJ) was employed in order to collect relevant data. BCCWJ is designed to be representative of contemporary written Japanese and thus includes 100 million words from well-balanced written materials covering books, magazines, newspapers, library books, bulletin boards, blogs, best-selling books, school textbooks, minutes of the National Diet, publicity of newsletters of local governments, laws, and poetry verses (to Maekawa et al. 2008 for more detail). The samples were extracted randomly in order to maximally represent the population of contemporary written Japanese.

In order to make use of BCCWJ, *Chunagon*, which is a web-based interface program, was utilized. By using this program, one can extract examples on the basis of morphological information. However, since BCCWJ does not contain syntactic information about grammatical functions, we cannot extract examples on the basis of grammatical relations between arguments and the predicate. Therefore, we have to rely on particle information so as to assemble target sentences. In other words, instead of

relying on grammatical functions such as the subject and the object, we need to count on the linear orders of particles. In order to collect $S_{\text{NOM}}O_{\text{ACC}}V$ sentences such as (1), I searched for sentences with the nominative case marker *GA* followed by the accusative case marker *O*.

(1) SOV

watashi-ga kuruma-o untenshi-tei-ta-toki...

I-NOM car-ACC drive-PROG-PAST-when

‘When I was driving a car...’

(BCCWJ)

The limitation of my design is that my search conditions can include many unrelated examples. In order to assemble relevant data, unrelated examples like (2) were excluded from my analysis by hand. Note that (2) includes the nominative case marker *GA* followed by the accusative case marker *O*, but they do not belong to the same clause. Therefore, (2) is not $S_{\text{NOM}}O_{\text{ACC}}V$ and omitted from my analysis.

- (2) obāchan-wa ashi-ga waruku, Ø tsue-o tsuita-ri...
 old.lady-TOP leg-NOM bad (she) staff-ACC lean.on-and
 ‘An old lady is lame and she leans on a staff...’
 (BCCWJ)

Furthermore, we cannot extract zero pronouns from BCCWJ due to the limitation of automatic searching. Since zero pronouns are phonetically null constituents as shown in (3b), there are no morphological cues to search for such examples. Theoretically, it is conceivable to collect zero pronouns by using morphological information, but there are too many unrelated data. For example, we can assemble zero objects occurring with the nominative case marker *GA* such as (3b) by extracting sentences with the nominative case marker *GA*. However, this string includes too many unrelated examples such as (4). It must be noticed that both (4a) and (4b) include the nominative case marker *GA* but does not contain a transitive verb. They are intransitive sentences, but cannot be excluded mechanically by using *Chunagon*. Since it is difficult to extract only zero pronouns, they are outside of my analysis.

- (3) a. Taro-ga kōen-o sanposhite-imashi-ta.

Taro-NOM park-ACC take.a.walk-PROG-PAST

‘Taro was taking a walk in the park.’

b. Jiro-ga Ø fonsui-no mae-de mistake-mashi-ta.

Jiro-NOM (him) fountain-GEN front-LOC find-HON-PAST

‘Jiro found (Taro) in front of the fountain.’

(Walker, Iida and Cote 1994:194)

(4) a. kenkōhigai-ga hasseishi-ta.

damage.to.health-NOM occur-PAST

‘Damage to health occurred.’

b. chakufuku-ga tsugitsugito hakkaku-shi...

embezzlement-NOM one.after.another be.detected-and

‘Embezzlements were detected one after another, and...’

(BCCWJ)

Next, the merit of using *Chunagon* is that it can extract target words with a long context. The maximum number of the preceding or the following tokens is 500 words. This length is enough to analyze discourse contexts because my approach depends to a

large degree on the Givónian approach, which requires 20 preceding clauses and 10 following clauses in order to calculate the discourse status of a certain referent. Since the aim of my research is to inquire into the interactions between some constructions and discourse contexts in the corpus, *Chunagon* is an essential tool.

3.3. Search Procedures for Calculating Discourse Status

For accessing the informational status of scrambled, topicalized, passives, and canonical sentences, the present study adopts the quantitative approach proposed by Givón (1977, 1978, 1979, 1983, 1988, 1990, 1994, 2001). This approach depends to a large degree on two basic concepts: RD and TP, which is roughly defined in (5).

(5) a. Referential Distance (RD): RD assesses the gap between a referent in the
current clause and its antecedent.

b. Topic Persistence (TP): TP counts the number of clauses in the following
discourse in which the referent re-occurs.

Generally speaking, RD assesses anaphoric saliency by measuring the distance between the referent and its antecedent. ‘What this measurement suggests is the level of activation

of a particular referent in one's consciousness' (Shimojo 2005: 71). The metric of RD measures the gap between a referent in the current clause and its antecedent, using clause boundaries as units. If there is no antecedent in the previous clauses, RD is assigned a value of 20 because without some limitation it would be infinite. Therefore, RD is expressed by some number of clauses from 1 to 20. Although 20 is an arbitrary upper boundary, it is the standard Givónian approach that imposes this arbitrary upper boundary at 20 clauses to the left (Cooreman 1982; Hinds 1978, 1982, 1983; Hinds and Hinds 1979; Imamura 2014, 2015a, 2016a, b; Imamura, Helgason, and Koizumi 2013, 2014; Myhill 1992; Shimojo 1995, 2005, 2006; Siewierska 1993; Watanabe 1989)¹. It is assumed that 'information becomes activated and deactivated in one's cognitive attention; when a speaker refers to a particular referent in conversation, the referent becomes activated in the hearer's consciousness. As the hearer, and also the speaker for this matter, process information represented by the subsequent utterances, that particular referent activated moments ago decays in activation. Thus, other things being equal, a referent whose RD is 1 may be considered to be more activated than a referent whose RD is 20 at the given

¹ There is some dispute as to whether or not set the limitation of RD at 20 clauses. Cooreman (1992: 246) proposes that it should be 15 because the 'maximum value of 20 is overestimated since the maximum value of the most discontinuous referent, i.e. one which reintroduces a referent after a very long gap in the narrative, never exceeded 15 clauses'. However, there were sentences with RDs higher than 16 in my data, so I followed the traditional criteria and the maximum value of RD was 20.

point of discourse' (Shimojo 2005: 71-2). In contrast, TP assesses cataphoric saliency by measuring the numbers of clauses the referent figures in after a given mention. This concept has been proposed in order to measure the decay of information in the cataphoric context. 'Simply put, information which does not continue to be present, i.e. does not persist, loses its saliency in the subsequent context. In other words, the discontinuity of reference reflects the deactivation of the mental representation' (Shimojo 2005: 98). TP is a measure of 'importance': 'more important discourse topics appear more frequently in the register, i.e. they have a higher probability of persisting longer in the register after a relevant measuring point' (Givón 1983: 15). Note that TP has proven to be independent of RD when it measures the topicality of referents (Wright and Givón 1987). In order to calculate the 'importance' of a referent in terms of cataphoric topicality, TP counts the number of clauses in the following 10 clauses in which the referent re-occurs. Thus, the value of TP varies from 0 to 10. TP 'is a reflection of the topic's importance in the discourse, and thus a measure of the speaker's topical intent' (Givón 1983: 14). 'In general, more topical (thematically important) referents tend to have TP values above 2. Less topical referents tend to have TP values of 0-2' (Givón 1994: 11). The criteria of RD and TP calculation are partly drawn from Shimojo (2005), specifically the criteria of back-channel feedback and adjacent predicates, and other criteria count on Imamura (2014,

2015a, 2016a, b). In the following sections, I will expand on the details of these criteria.

3.3.1. Bridging Relationships

Some kinds of inferable entities are regarded as discourse-old information. Specifically, bridging relations are taken into account. Bridging signifies an inference from a referent explicitly mentioned in the preceding discourse. In (6), for example, the hearer must suppose that *ringo* ‘apple’ is a part of *kudamono* ‘fruit’. *Ringo* is linked with *kudamono* through the inference. Therefore, *kudamono* can be regarded as the antecedent of *ringo*, although *ringo* does not directly referred to in (6a). This signifies that the RD of *ringo* is 1.

- (6) a. Taro-wa kinō kudamono-o kat-ta.
 Taro-TOP yesterday fruit-ACC buy-PAST
 ‘Taro bought fruit yesterday.’
- b. shikashi, ringo-wa kusattei-ta.
 but apple-TOP be.rotten-PAST
 ‘But the apples were rotten’

(Imamura 2014:227)

Take another example in order to illustrate the ‘part-whole’ relationship. In (7), *ippon* ‘a bottle’ refers to a bottle of fruit-flavored milk. Thus, the antecedent of *ippon* is the two bottles of fruit-flavored milk that *Katsuya* bought. In this case, RD of *ippon* is 1

- (7) Katsuya-wa karafuruna panya-de fruits-gyūnyū-o
Katsuya-TOP colorful bakery-LOC fruit.flavored-milk-ACC
nihon kat-te, ippon-o Tsukiko-ni tewatashi-ta.
two.bottle buy-and one.bottle-ACC Tsukiko-DAT pass-PAST
‘Katsuya bought two bottles of fruit-flavored milk at a colorful bakery and passed
a bottle of fruit-flavored milk to Tsukiko.’

(BCCWJ)

However, bridging relations are limited only for direct relationships. In (8), for instance, *baseball* is indirectly related to *football* through the concept of *sports*. Since there is no direct link between *baseball* and *football*, *baseball* is not bridged with *football*. Therefore, *football* is not the antecedent of *baseball*.

- (8) a. Do you watch football?
- b. Yeah. Baseball I like a lot BETTER.

(Ward and Birner 2001: 126)

3.3.2. Complex Clause

Every complex clause is segmented into separate clauses based on predicates. Thus, subordinate clauses are regarded as independent clauses. Note that (9) includes three predicates: *kumu* ‘pull up’, *hayaokisuru* ‘get up early’, and *iu* ‘say’. Therefore, the complex clause (9) should be divided into three independent clauses. With regard to the identification of the referents in complex clauses, the places of the arguments are taken into consideration. More specifically, the RDs or TPs of referents are calculated based on the place of the arguments, not on that of the predicate. Let us look at (9) in order to illustrate this criterion. It should be noticed that the predicate *iwareta* ‘be told’ intervenes between *zenimoto* ‘the former head of school’ and his antecedent *ojiichan* ‘grandfather’. However, the subject of *iwareta*, *shin iemoto* ‘new head of school’, precedes *ojiichan*. Hence, when you calculate the RD of *zenimoto*, *shin iemoto* is outside of the scope. On the other hand, the zero subject should be taken into account because it intervenes between *ojiichan* and *zenimoto*. Consequently, the RD of *zenimoto* is only 2.

- (9) [3 shin-iemoto-wa musuko-kara [2 ojiichan-ni sakini
 new.head.of.school-TOP son-from grandfather-DAT in.first
kum-are-nai-youni] [1 Ø hayaoki-shinakutya]-to
 pull.up.PASS-NEG-so.as.to (he) get.up.early-do.must-COMP
iw-are-ta sooda]. **Zenimoto**-no
 tell-PASS-PAST seem former-head.of.school-GEN
 sekkyokusa-o mago-ga monogatattei-te,...
 positiveness-ACC grandson-NOM give.evidence-and
 ‘I heard that the new head of school was told by his son to get up early and pull
 up water from the well so as not to be preceded by his father. The grandson gave
 evidence of the former head of school’s positive attitude...’

(Imamura 2014: 228)

Next, let us have a look at a coordinate clause. The coordinate clause (10) is divided into two clauses because it contains the two predicates; *nagameru* ‘look at’ and *watasu* ‘pass’. In order to illustrate the process of calculation in RD, let us measure the RD of *sore* ‘it’. The first step is to check the antecedent of *sore*. Here, it is *shashin* ‘photo’

because it refers to the same object that *sore* does. The second step is to calculate the clause boundaries between the target referent *sore* and its antecedent *shashin*. Since there is only one clause boundary between them, the RD of *sore* is 1.

(10)[₁ Martin-wa shashin-o nagame,] [₂ Ø sore-o Mortimer-ni watashi-ta.]

Martin-TOP photo-ACC look.at (he)it-ACC Mortimer-DAT pass-PAST

‘Martin looked at the photo and passed it to Mortimer.’

(Imamura 2015a: 9)

3.3.3. Adjacent Predicates

With regard to counting clause boundaries, one problem occurs when predicates appear adjacent to each other. The V_1 -*te*- V_2 form is normally categorized into the same clause, but when V_1 and V_2 have different subjects, each verb is regarded as belonging to an independent clause (Shimojo 2005: 57-8). In (11a), for example, the linked verb *kat-te-kite* ‘buy-TE-come-and’ share the zero subject ‘I’. Therefore, V_1 is not independent of V_2 and the V_1 -*te*- V_2 form belongs to the same clause. On the other hand, in (11b), V_1 and V_2 have different subjects. More specifically, V_1 *motte* ‘have’ forms a nexus with *tomodachi* ‘friend’ and V_2 *karite* ‘borrow’ forms a nexus with the zero subject ‘I’. Therefore, both

V_1 and V_2 are considered to constitute an independent clause because they do not share the same subject.

- (11) a. kyanberu-no sūpukan kat-te-ki-te
 Campbell-LK soup.can buy-TE-come-and
 ‘(I) bought a Campbell soup can (and came).’
- b. dorai-no-yatsu-o tomodachi-ga motte-te (S) (O) kari-te
 dry-LK-one-ACC friends-NOM have-TE (I) (it) borrow-and
 ‘A friend had dry (basil) and (I) borrowed (it).’

(Shimojo 2005: 57-8)

However, there is one exception to this criterion. When both V_1 and V_2 are transitive verbs, they constitute independent clauses even if they share the same subject. In (12), although the linking verb *kat-te-tabe* ‘buy-TE-eat’ share the same subject ‘I’, V_1 is independent of V_2 because both V_1 *kau* ‘buy’ and V_2 *taberu* ‘eat’ are transitive verbs.

- (12) Ø sushi-o kat-te-tabe-ta.
 (I) sushi-ACC buy-TE-eat-PAST

‘(I) bought sushi and ate it.’

3.3.4. Back-channel feedback

In definition, back-channel feedback such as *sō* ‘indeed’ and *un* ‘yeah’ are propositionally empty and are given by the hearer while the speaker is holding the conversational turn (Shimojo 2005: 58). Since they only express the attitude that he or she is all ears, they are not counted as clausal units. They are just attached to another clause. In (13), *uwa* ‘wow’ belongs to the following clause *kondo-wa Saeko-ga miosukumete* ‘This time, Saeko shrank back and...’

(13) *uwa, kondo-wa Saeko-ga miosukume-te Ryōsuke-ni shigamitsuku.*

wow this.time-TOP Saeko-NOM shrink.back-and Ryōsuke-DAT cling.to

‘Shouting ‘Wow’, Saeko shrank back and clung to Ryōsuke this time.’

(BCCWJ)

3.3.5. Copula

Copula expressions such as *da* and *de* belong to predicates. Note that predicates constitute independent clauses. Therefore, copula expressions also form independent clauses. In

(14), for example, the copula *dearu* constitutes an independent clause.

- (14) waga-kuni-wa kokudo-no sanbun-no-ni-o shinrin-ga
our.country-TOP land-GEN thirds-of-two-ACC forest-NOM
simeru-hodo shinrinshigen-ni megumareta-kuni-deari...
account.for-about forest.resources-DAT be.blessed-country-COP
‘Our country is a country that is blessed with forest resources such that two-thirds
of the land in our nation is covered with forests...’

(Imamura 2015: 10)

3.3.6. Zero Predicates

Not only explicit copulas but also implicit copulas form independent clauses. They are zero predicates, which have no phonetic forms like zero pronouns. In (15), an implicit copula expression is hidden after *kyōjukaishin* ‘professor’s round of visits’. It must be pointed out that (15) is not a complete sentence without recourse to the existence of a zero predicate. Thus, (15) is considered to have a zero predicate and constitutes an independent clause.

- (15) daigakubyōin-no shōchōto nat-teiru-no-ga
 university.hospital-GEN symbol become-PROG-NMZ-NOM
 marude tonosamagyōretsu-noyōna kyōjukaishin.
 just feudal.lord's.procession-like professor's.round.of.visits
 'The symbol of a university hospital is a professor's round of visits just like a feudal
 lord's procession.'

(BCCWJ)

3.3.7. Proposition

The traditional Givónian approaches have focussed on measuring the discourse status of a referent (Givón 1977, 1978, 1979, 1983, 1988, 1994, 2001). Therefore, they cannot analyze the RD or TP of a proposition because propositions are not a referent but a relationship between referents. In order to calculate the informational status of a proposition, the RD and TP of the related referents are counted. More specifically, the RD of the proposition is replaced by the least value of the referents pertinent to that proposition. In (16b), for instance, the scrambled object is the proposition *Hänsel-ga naka-ni hai-routosuru* 'that Hänsel is trying to come in it', which includes the two related referents *Hänsel* and *candy house*. In my analysis, the RDs of both *Hänsel* and *candy*

house are calculated first, showing that their RD values are only 1 because they are mentioned in (16a). In contrast, the head of the scrambled object, nominalizer *no*, has no antecedent. This signifies that its RD value is 20. However, since the scrambled object includes *Hänsel* and *candy house*, the RD of the nominalizer *no* is substituted by their RD values. As a result, the RD value of the scrambled object is 1.

(16)a. okashinoie-ga aru-node futari-wa hidoku bikkurisuru
 candy.house-NOM be-because two.person-TOP very surprise.NONPAST

‘Since there is a candy house, the two are very surprised.’

b. Hänsel-ga naka-ni hai-routosuru-no-o Gretel-ga togameru.
 Hänsel-NOM inside-LOC come-try.to.do-NMZ-ACC Gretel-NOM blame.for

‘Gretel blames Hänsel for trying to enter.’

(Imamura 2014: 229)

3.4. Search Procedures for Calculating Heaviness

Before calculating the heaviness, it is essential to clarify the concept of ‘weight’. This is because heaviness is defined as the weight of a noun phrase in the present study. Many kinds of definition of weight have been proposed in terms of words, phrases, syntactic

nodes, syllables, mora, and so on. Which definition is actually relevant to my analysis?

To address the issue of how weight is measured, Wasow (1997) compared the predictive powers of words, syntactic nodes, and phrasal nodes largely based on his corpus analysis.

As a result, it was revealed that all of the three measures are good predictors of Heavy NP shift and dative alternation in English. There was no preference for one measurement over

another. His study supports the view that Heavy NP Shift and dative alternation in English are not sensitive to the definition of weight. In other words, the phenomena of end weight

in English is sufficiently robust to use all of the three definitions of weight. However, the

same does not hold of Japanese. First, words can become long easily through the use of compounding. Iwasaki (2002: 74) points out that ‘compounding is a very productive

process in Japanese. Among compounding words, compound nouns are greater in number than compound verbs or adjectives’. Therefore, compound nouns such as (17c) are very

common in Japanese. It must be noted that a compound noun *kabegami* ‘wall paper’ consists of *kabe* ‘wall’ and *kami* ‘paper’. Thus, (17c) is longer than (17a) and (17b).

However, there is no difference among them in terms of the number of words; all of them are one words. In the same way, although (17d) and (17e) are much longer than (17a),

(17b), and (17c) in terms of morae or syllables, they are all one word expressions. Thus,

it is dangerous to measure the weight on the basis of the number of words. The lengths of

words are instable at least in Japanese.

(17) a. kabe

‘wall’

b. kami

‘paper’

c. kabe-gami

‘wall paper’

d. naikakusōridaijin

‘The Prime Minister’

e. Mitsubishi-UFJ-shintakuginkō-kabushiki-gaisha

‘Mitsubishi UFJ Trust and Banking Corporation’

Second, the number of phrases is not an appropriate tool for calculating the weight.

Although some studies measured the lengths by counting the number of phrases²

(Imamura 2014, 2015a; Kondo and Yamashita 2011), the length of a phrase can vary

² To be precise, Imamura (2014, 2015a) and Kondo and Yamashita (2011) utilized *bunsetsu*. Imamura (2014: 227) states that ‘*bunsetsu* is a basic unit in Japanese Linguistics, consisting of content word(s) followed by zero or more functional words. Generally speaking, *bunsetsu* corresponds to a phrase’.

greatly. Let us take (18) as an example. Notice that *kino* ‘yesterday’ includes 3 morae while *Santopia Wārudo* ‘Suntopia World’, which is a name of an amusement park, contains 9 morae. They differ from each other in terms of morae greatly. However, both *kino* and *Santopia Wārudo-e* are just 1 phrase length.

- (18) kinō Ø Santopia Wārudo-e tachiyo-tta.
 yesterday (I) Suntopia World-to drop.in.at-PAST
 ‘I dropped by Suntopia World yesterday.’

Third, syntactic nodes may be a good indicator of weight, but they are not a practical tool for measuring weight. One reason for this is that syntactic nodes change according to which syntactic theory you employ. For example, the structure of $O_{ACC}S_{NOM}V$ can be both (19a) and (19b). Another reason is that it is hard to deal with complex clauses due to their complexity. Indeed, it is tough to check every syntactic node of a long clause.

- (19) $O_{ACC}S_{NOM}V$
 a. $[_{TP} O_j S_i [_{VP} t_i t_j V]]$
 b. $[_{TP} O_i [_{VP} t_i' S t_i V]]$

The upshot of the discussion above is that all of the three measures are not valid for calculating the weight in Japanese. How should we define the concept of weight in order to analyze Japanese? One answer could be a phonological definition. Indeed, several studies defined weight in terms of phonological units (Lohmann and Takada 2014; McDonald, Bock, and Kelly 1993; Pinker and Birdsong 1979; Zec and Inkelas 1990). In particular, Lohmann and Takada (2014) calculated the weight in terms of syllables and morae. A syllable ‘consists of an onset, a nucleus and a coda, of which only the nucleus is obligatory’ (Iwasaki 2002:25) whereas a mora ‘is a tone bearing unit. Each mora in a word is conceived to be constant in duration’ (Iwasaki 2002:24). It should be noted that both syllable and mora are minimal units for calculating the weight. There is no difference between them in that they can represent the subtle differences in weight among constituents. However, morae do not necessarily correspond to syllables. In (20), for example, *chishiki* ‘knowledge’ is longer than *keiken* ‘experience’ in terms of syllables because the former includes three syllables whereas the latter comprises two syllables. In contrast, the former is shorter than the latter in number of morae; *chishiki* is a three-mora word whereas *keiken* is a four-mora word. Therefore, we need to select syllables or morae for measuring the weight.

(20) chishiki to keiken
knowledge and experience
‘knowledge and experience’

(Lohmann and Takada 2014: 54)

Which concept, then, is more useful for measuring weight in Japanese? In this study, weight is measured by the concept of mora. One important reason why mora is utilized is that the mora is the most central phonological unit in Japanese. In fact, Otake et al. (1993) observed that segmentation of spoken words depends on morae, not on syllables, in Japanese. Another reason is that it is easy to count the number of morae in written Japanese. There are three major sets of symbols to write Japanese: *hiragana*, *katakana*, and *kanji*. It should be noted that the number of morae corresponds to that of *kana* or *katakata*. Moreover, *kanji* can be divided into *hiragana* easily. Therefore, the information about morae can be readily available from written Japanese. Since the present study utilizes written Japanese corpus, mora count can be conducted without difficulty. Moreover, morae can express the subtle differences among referents because it is a phonologically minimal unit. Taken together, the method of measuring weight by using

only morae is a practical and stable option for analyzing Japanese. In the corpus analysis shown in chapter 5 and 7, morae are exclusively selected in order to calculate heaviness.

3.5. Search Procedures for Calculating Animacy

Since Silverstein (1976) proposed original animacy hierarchy, numerous studies have provided empirical support for this hierarchy (Dixon 1979; Jucker 1993; Leech et al. 1994; Seoane 2009; Rosenbach 2008). As shown in (21), human nouns are more animate than common inanimate nouns, and other nouns are intermediate categories between them. In this sense, animacy is not a binary concept. However, all referents are categorized into animate or inanimate in my analysis due to a statistical reason. Chi-square tests cannot be made use of when the sample size is too small. To be precise, they cannot be used due to the ‘Cochran’s rule’ when one fifth of the expected frequency is below 5 (Cochran 1954). If every category shown in (21) is selected for my analysis, the frequency of some categories may be too low to license a chi-square test³. In order to avoid this potential problem, some categories are incorporated into the animate and the others are combined into the inanimate.

³ T-tests cannot be conducted for frequency because it belongs to a nominal scale. Since nominal scales are qualitative data, they do not have the mean value, which is an essential condition for using t-tests.

(21) Animate Hierarchy

human N > animal N > collective N > temporal N >

locative N > common inanimate N

(Rosenbach 2008: 153)

The question that emerges as a by-product of the binary analysis of animacy is where we should set a cutoff point in the animacy hierarchy. With regard to this issue, Rosenbach (2008: 153) states that ‘collective nouns such as company often waver between an interpretation as animate or inanimate referents as they can usually be conceived of as either: a company may be conceptualized as an institution (the inanimate interpretation) or as the body of people working in and for the company (the animate interpretation)’. Following this view, a cutoff point between animate and inanimate is placed at collective nouns in this study. Thus, human nouns and animal nouns are categorized into animate nouns whereas temporal nouns, locative nouns, and common inanimate nouns are classified into inanimate nouns. However, there is one question that remains to be answered. How should we deal with collective nouns? One answer is that all the collective nouns should be regarded as animate nouns through the analysis. In this

way, it becomes possible to hold a consistent and coherent view about animacy. Let us illustrate this method by looking at (22). Note that *shi* ‘city’ is a collective noun because it represents a group of people who work for the city. Hence, *shi* is regarded as an animate noun. On the other hand, *hanabi* ‘firework’ is a common inanimate noun. Thus, it is counted as an inanimate noun. This analysis is supported by the subcategorization of the verb *uchiageru* ‘set off’, which requires an agent and a theme. Given the close connection between agency and animacy, it is unsurprising that agents are animate nouns and themes are inanimate nouns in general. Thus, the combination between the animate subject, *shi*, and the inanimate object, *hanabi*, is compatible with the predicate, *uchiageru*, in (22).

- (22) shi-ga hanabi-o uchiage...
- city-NOM firework-ACC set.off
- ‘The city displayed fireworks...’

(BCCWJ)

The remainder of this section first addresses the problem concerning fuzzy referents. It should be noticed that inanimate nouns can be conceptualized as humans. For example, in (23a), *nature* is metaphorically treated as animate because *generous* is surely

restricted to human nouns. However, to simplify the process of calculating animacy, animate/ inanimate distinction counts on only the intrinsic property of the referents. One advantage of this method is that it is easy to decide the category of each referent. For example, inanimate nouns such as *nature* are simply labeled as inanimate without making reference to other constituents. In my criteria, the property of *generous* has no influence on the category of *nature*. The animacy of *nature* is independent of other constituents.

(23) Nature is generous.

(Seoane 2009: 370)

The next question that remains to be answered is how to deal with long nouns which include both an animate noun and an inanimate noun. One proposal is that the animacy of a long referent should be dependent on that of its head. By following this criterion, binary criteria can be maintained. Let us have a look at (24) to illustrate the analysis of long nouns. In (24a), a human noun, *otoko* ‘man’, is modified by a relative clause. It must be noticed that the relative clause contains a common inanimate noun, *suika* ‘watermelon’. Thus, a long noun, *suika-o nusunda otoko* ‘a man who stole watermelons’, consists of an animate noun, *otoko*, and an inanimate noun, *suika*. However, it is categorized into an

an inanimate noun are included in a long noun, its head is considered to be representative of the noun as a whole. Therefore, the animacy of a long noun is determined by the intrinsic property of its head.

Chapter 4

Functional Analysis of Word Orders in terms of Information Structure

4.1. Overview

On the basis of theoretical preliminaries (chap.2) and methodological preliminaries (section. 3.3), this chapter presents my analysis of word orders from the view point of the Givónian approach. In other words, I will give a functional analysis of SOV and OSV in Japanese, paying attention to the interaction between word order permutations and particles. The discussion for this chapter will proceed as follows. Section 4.2 overviews the relationship between word order and information structure, focusing on scrambling, topicalization, and particles in Japanese. Section 4.3 presents the corpus analysis of SOV and OSV. Based on the results of the analysis, section 4.4 discusses the interaction between word orders and particles in terms of information structure. Section 4.4.1 lists the basic findings from the corpus analysis. Section 4.4.2 induces the generalization that scrambling predicts ‘topic shift’ whereas topicalization anticipates ‘continuing topic’. Section 4.4.3 is devoted to the reconsideration of the processing-based approaches. In section 4.4.4, it is proposed that there is a complementary distribution in SOV between

scrambling and postposing in that the former targets direct objects whereas the latter is intended for subjects. Section 4.4.5 suggests that word order changes are generally applied for intermediately accessible referents in Japanese. Section 4.5 summarizes the discussion.

4.2. Word Order and Information Structure

Since Prague School, it has long been recognized across many languages that given-information tends to be mentioned before new-information. This tendency is called ‘given-new ordering’. The basic insight behind this principle is that it is easier to process sentences that begin with given information, which is a link with a previous utterance or active in address’s mind, than to process sentences that start with new information whose connection with the previous sentences is not clear, as shown in Ferreira and Yoshita (2003). It has been reported that given-new ordering has significant effects on many constructions in many languages as shown in Birner, Kaplan, and Ward (2007) for English, Birner and Mabootian (1996) for Farsi, Hoffman (1998) for Turkish, Kaiser and Trueswell (2004) for Finnish, Kizach and Balling (2013) for Dutch, Kuno (1978) for Japanese, Rambow (1993) for German, Siewierska (1993) for Polish, and Vasishth, Shaher, and Srinivasan (2012) for Hindi.

In Japanese, several studies (Imamura 2014, 2015a, 2016a, b; Imamura, Sato, and Koizumi 2014, 2016; Ishii 2001; Koizumi and Imamura 2016; Kuno 1978, 1995) claim that word orders are determined so that given-information comes earlier than new information. Yet, surprisingly, no studies have investigated the relationship between the word order changes and the following utterances in Japanese. What happens after OSV in Japanese? In the present chapter, I am going to investigate the relationship between word orders and information structure using the Givónian approach. In particular, I am going to explore the similarities and dissimilarities between scrambling and topicalization from a view point of information structure.

4.2.1. Scrambling

In syntax, it has been assumed that the direct object in $O_{ACC}S_{NOM}V$ is moved from the VP-internal position to the initial position of the sentence (Miyagawa 2001, 2003, 2010; Saito 1985, 2009; Saito and Hoji 1983). This type of change in word order is called ‘scrambling’. What I should emphasize here is that scrambling does not change grammatical relations between constituents. For example, both $S_{NOM}O_{ACC}V$ (1a) and $O_{ACC}S_{NOM}V$ (1b) convey the same proposition *Taro kept his promise*. They differ not in what is said about the world, but in the way it is packaged (Chafe 1976; Lambrecht 1996;

Vallduví and Engdahl 1996). In other words, their differences derive from information structure, i.e. how the speaker conveys the basic meaning of a sentence to the hearer.

(1) a. $S_{NOM}O_{ACC}V$

Taro-ga yakusoku-o mamō-tta.

Taro-NOM promise-ACC keep-PAST

‘Taro kept his promise.’

b. $O_{ACC}S_{NOM}V$

yakusoku-o Taro-ga mamō-tta.

Promise-ACC Taro-NOM keep-PAST

‘Taro kept his promise.’

Theoretically, $S_{NOM}O_{ACC}V$ is regarded as unmarked word order whereas $O_{ACC}S_{NOM}V$ is considered to be ‘scrambled’ and thus marked. According to Siewierska (1993:257), ‘subjects make better topics than objects in that they are more likely than the object to be connected both to the preceding and following discourse. If this is the case, subjects may well be expected to be chosen for topic above any other constituent, which in turn implies that subject-initial order should prevail’. Thus, SOV is considered to be

more unmarked than OSV in the sense that the sentence begins with the subject. It is a well-known fact that unmarked patterns can be used felicitously in a wide range of discourse contexts while marked patterns arise only in the licensing context (Aissen 1992; Comrie 1988; Imamura, Sato, and Koizumi 2014, 2016; Kuno 1987, 1995; Koizumi and Imamura 2016; Koizumi et al. 2014). What is the appropriate context for O_{ACC}S_{NOM}V in Japanese? According to Kuno (1978:54), given-new ordering has a great influence on the choice of word orders. Thus, native Japanese speakers are thought to select OSV when the scrambled object is older than the subject. In addition, Saeki (1960) observed that NPs with demonstratives are apt to precede other constituents. Specifically, Ishii (2001) supports Saeki's observation by demonstrating that the acceptability of (2a) is much improved if the scrambled object is modified by the demonstrative *sono* 'that', as it can be seen in the difference in the acceptability between (2a) and (2b). The improvement of the acceptability is rendered by the existence of the demonstrative *sono*.

- | | | | |
|----------|----------------|---------|--------------|
| (2) a. * | okane-o | dare-ga | nusun-da-no? |
| | money-ACC | who-NOM | steal-PAST-Q |
| b. | sono okane-o | dare-ga | nusun-da-no? |
| | that money-ACC | who-NOM | steal-PAST-Q |

‘Who stole that money?’

(Ishii 2001: 97)

Moreover, Imamura (2014, 2015a, 2016a, b) pointed out on the basis of corpus analysis that scrambled objects tend to be given information. Specifically, Imamura (2014) has demonstrated that 2676 examples have an antecedent while 597 examples do not. In other words, 81.76% of the direct objects in OSV are discourse-old information. This supports the idea that OSV is chosen when the scrambled object is given information. Added to this fact, I indicated that some counter examples arise due to the shortcomings in my methods. In (3), for instance, the scrambled object *bokutachi-no-idokoro* ‘our whereabouts’ contains 1st person plural *bokutachi* ‘we’. According to Chafe (1987: 26, 1994: 79), interlocutors (1st and 2nd persons) are conscious of each other. Hence, it is no exaggeration to say that 1st and 2nd persons are permanently given information. Though *bokutachi* ‘we’ has not been referred to directly in the preceding discourse, it is given information because it is 1st person plural form. Thus, the scrambled direct object *bokutachi-no-idokoro* ‘our whereabouts’ as a whole can be regarded as given information.

(3) shainshō-ga haitteirun-dakara, sore-ga tegakari-ni-nari,

company.ID.card-NOM have-because it-NOM clue-DAT-become
 bokutachi-no-idokoro-o keisatsu-ga mitsukete-kureru-kamosirenai-yo.
 we-GEN-whereabouts-ACC police-NOM find-EMP-may-FP

‘Since (my wallet) has my company ID card, it can be the clue to our whereabouts
 and police may find us.’

(Imamura 2014: 230-1)

Additionally, it has been shown that some counter examples can be expounded by the concept of semi-activation. Chafe (1987: 25) states that ‘a semi-active concept is one that is in a person’s peripheral consciousness, a concept of which a person has a background awareness, but which is not being directly focused on’. Moreover, Chafe (1994: 86) states that a semi-active referent ‘may be in the semi-active rather than new referents. It may be a referent that (a) was active at an earlier time in the discourse, (b) is directly associated with an idea that is or was active in the discourse, or (c) is associated with the nonlinguistic environment of the conversation and has for that reason been peripherally active but not directly focused on’. In (4), the scrambled object *kono hon* ‘this book’ has no antecedent in the previous discourse, but is semi-activated by non-linguistic context. *Kono hon* ‘this book’ refers to the book a reader is reading now. The physical existence

of *this book* itself is a non-linguistic context.

(4) kono-hon-o dokusha-ga tenisuru-koroniwa...

this-book-ACC reader-NOM get-by.the.time

‘By the time readers get this book...’

(Imamura 2014: 231)

Imamura, Sato, and Koizumi (2014, 2016) and Koizumi and Imamura (2016) demonstrated using a sentence comprehension experiment that given-new ordering facilitated the processing cost of O_{ACC}S_{NOM}V. In Imamura, Sato, and Koizumi (2014), participants were asked to judge the acceptability of two-sentence passages like (5) and (6) as quickly as possible. Each passage consisted of a context sentence such as (5a) and a target sentence such as (5b). In (5), the subject in the context sentence (5a), *Suzuki*, was reused in the immediately following target sentence (5b). Since the referent of the scrambled object *Suzuki* was once mentioned in (5a), it is regarded as given information in (5b). On the other hand, since the referent of the subject in (5b), *Sato*, did not appear in (5a), it is new information in (5b). Thus, we can say that (5b) follows given-new condition because given information precedes new information. In contrast, in a target

sentence (6b), the referent of the scrambled object, *Suzuki*, is new information while the referent of the subject, *Sato*, is new information. Hence, (6) is ordered so that new information precedes given information, resulting in a new-given ordering. In our experiment, the reaction times for O_{ACC}S_{NOM}V were faster in given-new condition such as (5) than in new-given condition such as (6). This fact indicates that givenness has a strong influence on the processing of O_{ACC}S_{NOM}V.

(5) Given-New Condition

- a. Kōen-ni Suzuki-ga iru.
 park-LOC Sato-NOM be.NONPAST
 ‘There is Sato at the park.’
- b. Suzuki-o Sato-ga ot-ta.
 Suzuki-ACC Sato-NOM chase-PAST
 ‘Sato chased Suzuki.’

(Imamura, Sato, and Koizumi 2014: 435)

(6) New-Given Condition

- a. Kōen-ni Sato-ga iru.

park-LOC Sato-NOM be.NONPAST

‘There is Sato at the park.’

b. Suzuki-o Sato-ga ot-ta.

Suzuki-ACC Sato-NOM chase-PAST

‘Sato chased Suzuki.’

(adapted from Imamura, Sato, and Koizumi 2014: 435)

Furthermore, Suzuki (2000) revealed that 65.9% of the direct objects in OSV are ‘brand-new anchored’, which are newly introduced NPs that are linked to some other discourse entity via an NP included in the previous discourse. In contrast to such NPs, discourse-old NPs comprise 18.2% of all objects in OSV sentences¹. Let us have a look at (7) and (8) to explain both concepts at length.

- (7) [Context: soshite kono gēmu-no torikku-wa Pierre Brujeau-no yū
and this game-GEN trick-TOP Pierre Brujeau-GEN say
tōri,] gēmu-no rūru-o daitasū no
as game-GEN rule-ACC large.majority of

¹ In Suzuki (2000), discourse-old referents are called “textually evoked” on the basis of Prince (1981).

haisha-ga	sasaeteiru	toyū	koto	da.
defeated-NOM	support	COMP	NMR	CPL

‘[Context: And the trick of this game is, as Pierre Brujeau says,] that the large majority of defeated people are supporting the rule of the game.’

(Suzuki 2000:104)

(7) is an example of a sentence with a ‘brand-new’ anchored NP. Here, the head noun *rule* of the direct object *gēmu-no rūru* ‘rule of the game’ itself does not have an antecedent and thus is brand-new information. However, it is modified by *game*, which has been explicitly referred to as *kono gēmu* ‘this game’ in the context. Thus, the head noun *rule* of the direct object *gēmu-no rūru* is anchored because it is linked with the context by means of *game*. In brand-new anchored NPs, the head of the NP is brand-new information but the NP as a whole contains a discourse-old referent, making the brand-new anchored NP relevant to the preceding discourse.

(8) [Context: Popeye-no koibito Olive Oil sokkuri...]

Popeye-GEN	sweetheart	Olive	Oil	look.exactly.like
------------	------------	-------	-----	-------------------

‘[Context: (She) looks exactly like Popeye’s sweetheart Olive Oil...]’

Olive-o	koigataki-no	Brutus-ga	saraōtosuru.
Olive-ACC	rival.in.love-GEN	Brutus-NOM	try.to.kidnap

‘Brutus, Popeye’s rival in love, tries to kidnap Olive.’

(adapted from Suzuki 2000: 99)

The example (8) is a sentence with a discourse-old NP. In (8), *Olive* is mentioned both in the preceding context and in the target sentence. Since *Olive* has already been referred to as *Popeye-no koibito Olive Oil* ‘Popeye’s sweetheart Olive Oil’ in the preceding context, she is a discourse-old referent in the target sentence *koigataki-no Brutus-ga Olive-o saraōtosuru* ‘Brutus, Popeye’s rival in love, tries to kidnap Olive’.

Although Suzuki (2000) distinguishes brand-new anchored NPs from discourse-old NPs, it is possible to conflate these concepts and generalize that scrambled direct objects in OSV are given information. This is because brand-new anchored NPs include an anchoring NP and explicitly stated NPs are discourse-old information by definition. Taken together, these studies support the idea that there is a correlation between scrambled objects and given information in Japanese O_{ACC}S_{NOM}V word order.

As for cataphoric topicality, which is the likelihood of the referents to be carried over to the following sentences, there are two possibilities regarding OSV in Japanese.

One possibility is that the referent of the subject is more likely to be taken over to the following utterances. This prediction is based on the idea that grammatical hierarchy is the determinant of cataphoric topicality; since the subject is ranked higher than the object, it is more likely to be the center in the following sentences (Kameyama 1985; Walker, Iida, and Cote 1994). An alternative possibility is that the referent of the object is referred to more frequently than that of the subject in the following utterances. This prediction counts on the idea that word orders have a strong influence on cataphoric topicality (Strube and Hahn 1999; Gordon, Grosz, and Gilliom 1993). According to this position, scrambled objects are more likely to be referred to in the following sentences because they precede their subjects. In this chapter, I am going to investigate which prediction is on the right track, using the Givónian approach.

4.2.2. Topicalization

In Japanese, case markers can be substituted for topic marker *WA*. Therefore, OSV can be expressed by $O_{TOP}S_{NOM}V$ as shown in (9b). This operation is called ‘topicalization’. Note that there are no differences in their propositional meaning between an SOV sentence (9a) and an OSV sentence (9b). However, $O_{TOP}S_{NOM}V$ is pragmatically different from $S_{TOP}O_{ACC}V$; the direct object in $O_{TOP}S_{NOM}V$ has a strong contrastive meaning. In

fact, (9b) presupposes that *John didn't eat other fruits*. There is a contrastive relationship between *what John ate* and *what John didn't eat*. Why is there such a difference between (9a) and (9b)? Kuno (1973a: 357) points out that when WA follows a non-subject noun phrase, it tends to be interpreted as contrastive. Moreover, McGloin (1990) maintains that topicalized objects are apt to have only a contrastive meaning unless they have not been mentioned in the preceding discourse. For instance, (9b) needs more specific contexts than (9a) does. In other words, native Japanese speakers feel that the topicalized object in (9b), *sono-ringo* 'the apple', should be interpreted as contrastive while there is no such a constraint for the accusative object in (9a). In sum, $O_{TOP}SV$ in Japanese is likely to have a contrastive meaning.

(9) a. $S_{TOP}O_{ACC}V$

John-wa sono-ringo-o tabe-ta.

John-TOP the-apple-ACC eat-PAST

'John ate the apple.'

b. $O_{TOP}S_{ACC}V$

sono-ringo-wa John-ga tabe-ta.

the-apple-TOP John-NOM eat-PAST

‘The apple, John ate.’

In syntax, Kuroda (1987) argues that topicalized objects are derived by movement.

In this meaning, not only $O_{ACC}S_{NOM}V$ but also $O_{TOP}S_{NOM}V$ are syntactically more marked than SOV. In terms of frequency, Imamura and Koizumi (2011) demonstrated that the frequency of $O_{TOP}S_{NOM}V$ is significantly lower than that of SOV. From the view point of information structure, Lambrecht (1996:131) points out that there is a correlation between the subjecthood and the topicality. Moreover, Mak, Wonk, and Schriefes (2008) insist that topical referents tend to be realized as subjects. $O_{TOP}S_{NOM}V$ violates this tendency because the topical referent is realized as the object. Taken together, $O_{TOP}S_{NOM}V$ is a marked option, which means that it requires a specific context like $O_{ACC}S_{NOM}V$. If it is licensed only when it is contrastive, it is conceivable that givenness has nothing to do with it unlike scrambling. Contrastiveness may be a licensing context for $O_{TOP}S_{NOM}V$.

However, Kuno (1973a) observed that non-sentence initial *WA* as shown in (9c) always has a contrastive meaning. Furthermore, Clancy and Downing (1987) state that it is the contrastive usage of *WA* that is basic because 75% of *WA* are used in contrastive contexts. Makino (1982) and Yoshimoto (1982) support this opinion by asserting that thematic topic *WA* is merely a special case of the contrastive use of *WA*. Moreover, Isoe

(1992) observed that there is a correlation between contrastiveness and topic marker *WA*. In addition, Shimojo (2005:179) observed that the contrastive usage accounts for 82% of *WA* in spoken Japanese. All of these studies support the idea that contrastiveness itself can be a licensing context for topic marker *WA*. If this is on the right track, it is conceivable that contrast is not a motivation for moving a topicalized object toward the sentence initial position because a topicalized object can have a contrastive interpretation even in in-situ position. If so, there must be another reason for moving the topicalized object. This reason may be givenness: $O_{TOP}S_{NOM}V$ may be selected when the *WA*-marked object is given information.

Both scrambling ($O_{ACC}S_{NOM}V$) and topicalization ($O_{TOP}S_{NOM}V$) include a syntactic movement but they are different from each other in that the former selects accusative case marker *O* and the latter chooses topic marker *WA*. Does this difference influence the functional aspects of scrambling and topicalization in Japanese? Contrastiveness is the key here. Ishii (2001: 97-8) states that topicalized objects have a contrastive meaning while scrambled objects do not. In addition, Yamashita (2002: 598) points out that the difference between $S_{NOM}O_{ACC}V$ shown in (10a) and $O_{TOP}S_{NOM}V$ shown in (10b) is that the exhaustive interpretation of *John* disappears in $O_{TOP}S_{NOM}V$. In $O_{TOP}S_{NOM}V$, the topicalized object *ringo* ‘apple’ must receive a contrastive meaning. On the other hand,

the difference in meaning between $S_{NOM}O_{ACC}V$ and $O_{ACC}S_{NOM}V$ is unclear. Unlike $O_{TOP}S_{NOM}V$, the scrambled object, *ringo* ‘apple’, shown in (10c) does not have a contrastive meaning. In this chapter, I am going to explore the functional similarities and differences between scrambling and topicalization from a view point of information structure.

(10) a. $S_{NOM}O_{ACC}V$

John-ga ringo-o tabe-ta.

John-NOM apple-ACC eat-PAST

‘John ate an apple. [It is John who ate an apple.]’

b. $O_{TOP}S_{NOM}V$

ringo-wa John-ga tabe-ta.

apple-TOP John-NOM eat-PAST

‘As for the apple [in contrast to other foods], John ate [it]’

c. $O_{ACC}S_{NOM}V$

ringo-o John-ga tabe-ta.

apple-ACC John-NOM eat-PAST

‘John ate an apple.’

4.2.3. *GA/WA* Distinction

Traditionally, it has long been reported that nominative case *GA* correlates with new information and topic marker *WA* is related to given information in general² (Chafe 1970,1976; Hinds 1984; Imamura 2016b; Imamura, Helgason, and Koizumi 2014; Kuno, 1972, 1973a, b; Matsushita 1930; Mikami, 1963; Ono 1973). In particular, Kuno (1972: 277) illustrates the usage of *GA* and *WA* by citing (11). He points out that only the *WA*-marked subject *sono-gōtō* ‘the robber’ is acceptable in (11b) because it has already been mentioned in (11a). If it were marked by *GA*, it would be unacceptable because *GA* marks new information although *sono-gōtō* ‘the robber’ is given information.

- (11) a. *gōtō-ga* *boku-no-ie-ni* *hait-ta.*
 robber-NOM I-GEN-house-into enter-PAST
 ‘A robber broke into my house.’

- b. *sono-gōtō-*ga/wa* *boku-ni* *pisutoru-o* *tsukitsukete*

² Kuno (1972: 270) points out that *WA* is not necessarily anaphoric (i.e. previously mentioned) when it has a contrastive meaning. In other words, contrastive *WA* can be used to mark both given information and new information.

the-robber-NOM/TOP	I-DAT	gun-ACC	point
kane-o	da-se-to	it-ta.	
money-ACC	give-IMP-QT	say-PAST	

‘The robber, pointing a pistol at me, said, ‘give me money’.’

(Kuno 1972: 277)

Within the framework of the Givónian approach, Hinds and Hinds (1979) contend that there are three steps in the identification of a referent. On the first mention, the nominative case marker *GA*, the dative case marker *NI*, or the accusative case marker *O* are used to introduce a new referent. On second mention, it is marked with the topic marker *WA*. By doing this, the speaker indicates to the hearer what he or she is going to talk about. After that, it is referred to by zero pronouns repeatedly to indicate that the same referent remains the topic of the discourse. Moreover, Hinds (1983) calculated the RD of the nominative case marker *GA*, the topic marker *WA*, and zero pronouns. As a result of his analysis, the nominative case marker *GA* showed the least amount of topic continuity, because the RD for it was the largest, being consistent with its role as an indicator of new information. Zero pronouns were the most continuing option because the RD for them was the smallest of all, showing their role as a continuation of the same

topic in discourse. The topic marker *WA* was an intermediate category between nominative case marker *GA* and zero pronouns due to the intermediate value of its RD. Imamura, Helgason, and Koizumi (2014) observed the same tendency about nominative case marker *GA*, topic marker *WA*, and zero pronouns in Japanese novels. In addition, Shimojo (2005:126) revealed on the basis of spoken Japanese that the nominative case marker *GA* and the accusative case marker *O* have high RDs and the topic marker *WA* has an intermediate value of RD and that all of these particles have high TP values.

In sum, generally speaking, nominative case marker *GA* is used for new information and topic marker *WA* is selected to mark given information. However, contrastive *WA* is an exception to this observation.

4.2.4. Interactions between Word Order Changes and Particles

Shimojo (2005) examined the interactions between particles and postposing, which includes a movement from a pre-predicate position toward the post-predicate position. In (12), for example, the subject *Ken* is moved from the sentence initial position to the post-predicate position, creating a VS order sentence.

(12) a kimashi-ta-yo Ken-ga.

ah come-PAST-FP Ken-NOM

‘Ah, there Ken comes.’

(Shimojo 1995: 125)

Regarding the functions of postposing, Takami (1995: 228) and Kamio and Takami (1998: 154) indicate that only unimportant information can be moved to the post-predicate position. Note that unimportant information is predictable from the discourse context. Let us illustrate his analysis by looking at (13). As a reply to an interrogative sentence (13a), *Kyoto* is the most important information because it is the answer to the *WH*-phrase *doko* ‘where’. The most important information is what the speaker assumes that the hearer cannot predict (Takami 1995: 136). Consequently, (13c) is unacceptable because *Kyoto* is postposed although it is more important other constituents. This example clearly shows that the most important information cannot appear after the predicate in Japanese.

(13) a. Taro-wa Hanako-to doko-e it-ta-no?

Taro-TOP Hanko-with where-LOC go-PAST-Q

‘Where did Taro go with Hanako?’

- b. kare-wa hanako-to Kyoto-e it-ta-yo.
 he-TOP Hanako-with Kyoto-LOC go-PAST-FP
 ‘He went to Kyoto with Hanako.’
- c. * kare-wa Hanako-to it-ta-yo Kyoto-e.
 he-TOP Hanako-with go-PAST-FP Kyoto-LOC
 ‘He went to Kyoto with Hanako.’

(Takami 1995: 225)

Back to Shimojo’s study, he found that the functions of particles are strongly influenced by non-pause type postposing. Recall that topic marker *WA* has a high TP, which means that *WA*-marked referents are normally taken over to the following utterances. Generally speaking, however, postposed *WA*-marked referents do not appear in the subsequent sentences. Let us take an actual example from spoken Japanese. In (14c), the postposed referent *anoko* ‘that girl’ is marked with the topic marker *WA*. However, unlike typical *WA*-marked referents, she does not persist after the utterance. In fact, she is not referred to in the following utterances and the conversational topic shifts from *anoko* to *Aki* after postposing. This example shows that the informational status of the *WA*-marked referent is affected by postposing. According to Shimojo (2005: 224), ‘the

information encoded in post-predicate arguments is unimportant such that the information is defocussed in the cataphoric context'. In other words, post-posed arguments tend to disappear from the discourse.

- (14) a. Ø kaze toka hika-naka-tta-no?
 (she) cold etc. catch-NEG-PAST-Q
 'Didn't (she) catch a cold?'
- b. iya Ø Ø hii temo
 no (she) (it) catch even.if
 'Even if (she) caught (a cold),'
- c. kite-ta-ne ano-ko-wa
 come-PAST-FP that-girl-TOP
 '**That girl** came'
- d. ja Akichan³
 then Aki
 'Then Aki'
- e. atashi?

³ *Aki* is the second person and thus is not *anoko* in this context.

I

‘Me?’

(Shimojo 2005: 210)

Moreover, Saito (2012) observed that word order changes have an influence on the interpretation of topic marker *WA*. In SOV like (15a), as Kuno (1973a) notes, only the sentence initial *WA* can be interpreted as a thematic topic. However, in OSV like (15b), when the *WA*-marked direct object is moved to the sentence initial position, both the subject and the direct object can have a thematic interpretation.

- (15) a. Taro-wa (kyonen) sono hon-wa katta.
Taro-TOP last year that book-TOP bought

A. ‘Speaking of Taro, he bought that book (last year), but I don’t know about other books’ (Taro=Thematic, that book=contrastive)

B. ‘Taro bought that book (last year), but I don’t know about other people and other books’ (Taro=contrastive, that book=contrastive)

- b. sono hon-wa Taro-wa (kyonen) katta.
that book-TOP Taro-TOP last year bought

- A. ‘ Speaking of that book, Taro bought it (last year), but I don’t know about other people’ (that book=thematic, Taro=contrastive)
- B. ‘ Speaking of Taro, he bought that book (last year), but I don’t know about other books’ (Taro=thematic, that book=contrastive)
- C. ‘ Speaking of that book and speaking of Taro, he bought it (last year)’
(that book=thematic, Taro=thematic)
- D. ‘ Taro bought that book (last year), but I don’t know about other books and other people’ (that book=contrastive, Taro=contrastive)

(Saito 2012: 158-9)

In a nutshell, word order permutations have effects on the informational status of particles. Thus, in the present chapter, I am going to inspect the interplays between word orders (SOV vs. OSV) and particles (case markers *GA* and *O* vs. topic marker *WA*) in Givón’s theoretical framework.

4.3. Corpus Analysis of SOV and OSV in terms of Information Structure

4.3.1. Basic Purposes

The purpose of this analysis is to examine the discourse effects of word order changes and particles in Japanese transitive sentences, based on the Givónian approach. To this end, I calculate RD and TP of the both subject and the object in SOV and OSV sentences. By comparing SOV with OSV, focusing on particles, the discourse effects of OSV and particles can be measured with precision.

4.3.2. Method

4.3.2.1. Corpus Data

In order to collect the relevant data, BCCWJ was utilized. Regarding the details of this corpus, see section 3.1.

4.3.2.2. Materials

There are six conditions in my analysis, as shown in (16). $O_{TOP}S_{TOP}V$ and $S_{TOP}O_{TOP}V$ are outside the scope of my analysis. In Japanese, it is unclear whether $O_{TOP}S_{TOP}V$ is grammatical or not because word orders themselves have a strong influence on the interpretations when case information is useless (Yokoyama, Takahashi, and Kawashima 2013). Take (17) as an example. $O_{TOP}S_{TOP}V$ like (17a) is unacceptable even though animacy information gives the parser a hint to understand the grammatical relationships

between the subject and the object. When $NP_{TOP}NP_{TOP}V$ is presented, $S_{TOP}O_{TOP}V$ is the only possible interpretation. Thus, native Japanese speakers need to interpret (17a) as ‘An apple ate Taro’, which expresses a strange proposition. That is why (17a) is unacceptable. Moreover, $S_{TOP}O_{TOP}V$ lacks its pair $O_{TOP}S_{TOP}V$ and the interactions between OSV and particles cannot be measured when both the subject and the object are marked with topic marker *WA*. Therefore, both $O_{TOP}S_{TOP}V$ and $S_{TOP}O_{TOP}V$ are beyond the scope of my analysis.

(16) a. $S_{NOM}O_{ACC}V$

b. $S_{TOP}O_{ACC}V$

c. $S_{NOM}O_{TOP}V$

d. $O_{TOP}S_{NOM}V$

e. $O_{ACC}S_{NOM}V$

f. $O_{ACC}S_{TOP}V$

(17) a. $O_{TOP}S_{TOP}V$

* ringo-wa Taro-wa tabe-ta.

apple-TOP Taro-TOP eat-PAST

‘The apple ate Taro.’

b. $S_{TOP}O_{TOP}V$

Taro-wa ringo-wa tabe-ta.

Taro-TOP apple-TOPeat-PAST

‘Taro ate apples (but he didn’t eat other fruits).’

4.3.2.3. Procedures

Every example was assembled from BCCWJ by using *Chunagon*, which is a web interface program. Randomly selected 100 examples for each condition were used for my analysis. In order to collect target sentences, I made use of morphological information. To put it more concretely, my analysis depends on the linear order of particles. With regard to $S_{NOM}O_{ACC}V$, for instance, sentences with the nominative case marker *GA* followed by the accusative case marker *O* were extracted. In the same way, linear orders of particles were utilized in order to extract $S_{TOP}O_{ACC}V$, $S_{NOM}O_{TOP}V$, $O_{TOP}S_{NOM}V$, $O_{ACC}S_{NOM}V$, and $O_{ACC}S_{TOP}V$ sentences. For each example, I measured the RD and TP values for the subject and the object. The criteria of RD and TP calculation depends on section 3.2.

4.3.3. Results

Table 4.1 lists the data gathered from BCCWJ in terms of RD and TP. It shows the average value and the standard deviation for each condition⁴.

Table 4.1 RD and TP for each sentence type

Sentence	Grammatical	RD		TP	
Types	Functions	M	SD	M	SD
S _{NOM} O _{ACC} V	S	7.62	7.98	2.15	2.18
	O	13.14	8.53	1.22	1.93
S _{TOP} O _{ACC} V	S	6.31	6.81	3.01	2.25
	O	10.38	8.58	1.24	1.66
O _{TOP} S _{NOM} V	S	10.94	8.21	1.50	1.90
	O	7.01	7.55	2.22	2.27
O _{ACC} S _{NOM} V	S	9.86	8.48	2.38	2.49
	O	5.12	7.09	1.57	1.90
O _{ACC} S _{TOP} V	S	6.94	6.89	3.04	2.40

⁴ Surprisingly, although I checked about 3000 sentences with a nominative case marker *GA* followed by a topic marker *WA*, there was no S_{NOM}O_{TOP}V in my data. Hence, I analyzed only the following conditions: S_{NOM}O_{ACC}V, S_{TOP}O_{ACC}V, O_{ACC}S_{NOM}V, O_{TOP}S_{NOM}V, and O_{ACC}S_{TOP}V.

O	5.76	7.39	1.87	2.37
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A series of t-tests were conducted for the average values of RD and TP. In RD, there was a significant difference between the subject and the object in $S_{NOM}O_{ACC}V$ ($t(198)=4.73, p<.01$), $S_{TOP}O_{ACC}V$ ($t(198)=3.72, p<.01$), $O_{ACC}S_{NOM}V$ ($t(198)=4.29, p<.01$), and $O_{TOP}S_{NOM}V$ ($t(198)=3.52, p<.01$), but not in $O_{ACC}S_{TOP}V$ ($t(198)=1.17, p=.24$). In other words, the subject was older than the object in $S_{NOM}O_{ACC}V$ and $S_{TOP}O_{ACC}V$ while the object was older than the subject in $O_{ACC}S_{NOM}V$ and $O_{TOP}S_{NOM}V$.

Regarding the RD values for the object, $S_{NOM}O_{ACC}V$ showed higher RD than $S_{TOP}O_{ACC}V$ ($t(198)=2.28, p<.05$), whose RD was higher than $O_{TOP}S_{NOM}V$ ($t(198)=2.95, p<.01$), whose RD was as low as $O_{ACC}S_{TOP}V$ ($t(198)=1.18, p=.24$) and $O_{ACC}S_{NOM}V$ ($t(198)=1.82, p=.07$). In other words, OSV was lower in the RD values for the direct object than SOV.

As for the RD values for the subject, there was no significant difference between $O_{TOP}S_{NOM}V$ and $O_{ACC}S_{NOM}V$ ($t(198)=0.91, p=.36$), but only $O_{TOP}S_{NOM}V$ had higher RD than $S_{NOM}O_{ACC}V$ ($t(198)=2.90, p<.01$). Moreover, $O_{ACC}S_{NOM}V$ had higher RD than $O_{ACC}S_{TOP}V$ ($t(198)=2.67, p<.01$) and $S_{TOP}O_{ACC}V$ ($t(198)=3.27, p<.01$). However, there was no significant difference in the RD values of the subject between $S_{NOM}O_{ACC}V$ and

$O_{ACC}S_{TOP}V$ ($t(198)=0.65, p=.52$).

In TP, there was a significant difference between the subject and the object in $S_{NOM}O_{ACC}V$ ($t(198)=3.20, p<.01$), $S_{TOP}O_{ACC}V$ ($t(198)=6.33, p<.01$), $O_{ACC}S_{NOM}V$ ($t(198)=2.58, p<.05$), $O_{TOP}S_{NOM}V$ ($t(198)=2.43, p<.05$), and $O_{ACC}S_{TOP}V$ ($t(198)=3.47, p<.01$). In other words, only under the $O_{TOP}S_{NOM}V$ condition did the object have a higher TP than the subject. Under the other conditions, the subject held higher TP than the object.

For the object, there was no significant difference in the TP values between $O_{TOP}S_{NOM}V$ and $O_{ACC}S_{TOP}V$ ($t(198)=1.07, p=.29$), but only $O_{TOP}S_{NOM}V$ was significantly higher in TP than $O_{ACC}S_{NOM}V$ ($t(198)=2.19, p<.05$). Moreover, $O_{ACC}S_{TOP}V$ showed higher TP than $S_{TOP}O_{ACC}V$ ($t(198)=2.18, p<.05$) and $S_{NOM}O_{ACC}V$ ($t(198)=2.13, p<.05$). However, $O_{ACC}S_{NOM}V$ were not significantly higher in TP values for the object than $S_{NOM}O_{ACC}V$ ($t(198)=1.29, p=.20$) and $S_{TOP}O_{ACC}V$ ($t(198)=1.31, p=.19$).

Finally, for the TP values for the subject, there was no significant difference between $O_{ACC}S_{TOP}V$ and $S_{TOP}O_{ACC}V$ ($t(198)=0.09, p=.93$), between $O_{ACC}S_{TOP}$ and $O_{ACC}S_{NOM}V$ ($t(198)=1.91, p=.06$), and between $S_{NOM}O_{ACC}V$ and $O_{ACC}S_{NOM}V$ ($t(198)=0.70, p=.49$). $S_{TOP}O_{ACC}V$ showed higher TP in the subject than $S_{NOM}O_{ACC}V$ ($t(198)=2.74, p<.01$), whose TP values for the subject were significantly higher than $O_{TOP}S_{NOM}V$ ($t(198)=2.25, p<.05$).

4.4. Discussion

4.4.1. Basic Findings

The purpose of this chapter is to investigate the interactions between word orders and particles on the basis of RD and TP. There are several findings from the quantitative analysis. First, it has been revealed that the direct objects are older in OSV than in SOV. In other words, the direct objects are easily accessible when they are moved toward sentence-initial position. This result coincides with the claim that OSV is selected when the direct object is given information (Imamura 2014, 2015a, 2016a, b; Imamura, Sato, and Koizumi. 2014, 2016; Ishii 2001; Kuno 1978; Koizumi and Imamura 2016). In fact, $O_{ACC}S_{NOM}V$ and $O_{TOP}S_{NOM}V$ have reversed the informational status between the subject and the object in terms of anaphoric topicality; in $O_{ACC}S_{NOM}V$ and $O_{TOP}S_{NOM}V$, the direct objects have lower RDs than the subjects, whereas in $S_{NOM}O_{ACC}V$ and $S_{TOP}O_{ACC}V$, the direct objects have higher RDs than the subjects. However, in $O_{ACC}S_{TOP}V$, the direct objects are as old as the subjects. Note that the subject is marked by the topic marker *WA* in $O_{ACC}S_{TOP}V$, not by the nominative case marker *GA*. Thus, I conclude that both scrambled objects and topic marked subjects are easily accessible referents in $O_{ACC}S_{TOP}V$. This result agrees with the previous studies in that *WA*-marked referents are apt to be

given information (Hinds and Hinds 1979; Hinds 1983; Imamura, Helgason, and Koizumi 2014; Shimojo 2005). To summarize the above discussion in terms of anaphoric topicality, it has been shown that direct objects tend to be given information when OSV is chosen and that topic marked referents are apt to be given information.

Second, generally speaking, the referents of the subjects are more likely to be taken over to the following sentences than these of the direct objects in $S_{NOM}O_{ACC}V$, $S_{TOP}O_{ACC}V$, $O_{ACC}S_{NOM}V$, and $O_{ACC}S_{TOP}V$; the subjects have higher TP than the objects. To put it another way, scrambling does not have a strong influence on cataphoric topicality. However, in $O_{TOP}S_{NOM}V$, the referents of the direct objects tend to be referred to the following sentences more often than these of the subjects. This is because *WA*-marked referents have high TP values and are more likely to be carried over to the following discourse than case marked referents (Shimojo 2005). In terms of TP values as a whole, it has been revealed that *WA*-marked subjects are higher than *GA*-marked subjects or *WA*-marked objects, both of which are higher than *O*-marked objects. Note that *WA*-marked object are higher than *O*-marked objects but lower than *WA*-marked subjects. From these data, it is clear that TPs are affected not only by particle types but also by grammatical functions. Taken together, cataphoric topicality is more strongly influenced by particles and grammatical functions than by word orders as proposed by Kametama (1985) and

Walker, Iida, and Cote (1994). Thus, word order changes seem to have an influence on anaphoric topicality but not on cataphoric topicality. The same tendency was observed in Polish by Siewierska (1993), who claimed that subjecthood strongly correlates with TP.

Third, I tried to assemble $S_{NOM}O_{TOP}V$, but I could not find any actual examples from the BCCWJ. Why was the frequency of $S_{NOM}O_{TOP}V$ so low that no example was observed? Let us consider the reason from a view point of information structure. It should be noted that $O_{TOP}S_{NOM}V$ and $S_{NOM}O_{TOP}V$ have the same propositional meaning. Thus, compare $O_{TOP}S_{NOM}V$ with $S_{NOM}O_{TOP}V$. To begin with, both $O_{TOP}S_{NOM}V$ and $S_{NOM}O_{TOP}V$ violate *Preferred Argument Structure* proposed by Du Bois (1987). He hypothesizes that there are preferable relationships between argument structure and discourse and that certain configurations of arguments are preferred over other grammatically possible alternations. In particular, Du Bois (1987: 627) argues that it is desirable to ‘avoid introducing a new referent in the A-role argument position’. Applying this constraint to the transitive construction, the transitive subject position is undesirable for new information because transitive subjects are Agents. Note that the subjects are marked by the nominative case marker *GA* both in $O_{TOP}S_{NOM}V$ and $S_{NOM}O_{TOP}V$. It has been reported that the nominative case marker *GA* correlates with new information (Kuno, 1972, 1973a; Mikami, 1963; Ono, 1973). Therefore, $O_{TOP}S_{NOM}V$ and $S_{NOM}O_{TOP}V$ are undesirable

choices and marked options in that they do not follow *Preferred Argument Structure*. Since it has been shown that marked grammatical operations require rich contexts (Aissen 1992; Imamura, Sato, and Koizumi 2014, 2016; Kuno 1987, 1995; Koizumi and Imamura 2016; Koizumi et al. 2014), $O_{TOP}S_{NOM}V$ and $S_{NOM}O_{TOP}V$ need a specific discourse context. Here, given-new ordering seems to work. With regard to $O_{TOP}S_{NOM}V$, it follows given-new ordering because the direct object belongs to given information while the subject is new information. On the other hand, $S_{NOM}O_{TOP}V$ seems to violate given-new ordering because new information is expected to precede given information. This construction comprises the *GA*-marked subject and the *WA*-marked object. Generally, nominative case marker *GA* is used for new information whereas topic marker *WA* is selected in order to express given information. Thus, $S_{NOM}O_{TOP}V$ is considered to be arranged so that new information comes earlier than given information. This may be the reason why the frequency of $S_{NOM}O_{TOP}V$ was very low.

Fourth, the subjects are older in SOV than in OSV generally. This fact can be explained by the one new idea constraint: ‘Avoid more than one new argument per clause’ (Du Bois 1987: 826). Let us consider SOV and OSV on the basis of this hypothesis. In SOV, the objects are inclined to be new information, so it is desirable that the subjects are given information. This is because it is undesirable that one clause includes more than

one new information. On the other hand, in OSV, since the direct objects are apt to be given information, there is no constraint about the informational status of the subjects; it does not matter whether the subjects are given information or new information. Thus, the subject of OSV seems to be newer than that of SOV in general. An alternative explanation hinges on Ishii (2001)'s proposal that scrambling arises in order to move the non-scrambled constituent to the focus position. First, the focus normally resides in the position immediately preceding the verb (Kamio and Takami 1998; Kuno 1978, 1995; Takami 1995). By moving the direct object toward the sentence-initial position, the focus shifts from the direct object to the subject. Second, there is a general correlation between the focus and new information⁵. Taken together, the subject in OSV tends to be new information. If scrambling is the altruistic movement of the direct object toward the sentence-initial position in order to situate the subject in the focus position, there will occur a difference between scrambling and postposing in terms of the properties of the arguments that are not moved. More specifically, it is possible that non-scrambled subjects tend to be new information whereas non-postposed *O*-marked NPs tend to retain the canonical pre-predicative property of *O*-marking in terms of RD. It should be noticed that postposing is mainly used for subjects (Shimojo 2005). Unlike scrambling, non-

⁵ This fact is just a general tendency and thus focus information is not always new information (Takami and Kuno 2006:188).

postposed arguments are already placed in the position immediately preceding the verb because they are direct objects. Generally speaking, there therefore will be no altruistic movement for postposing, resulting in no effects on the direct object in terms of anaphoric topicality. Of course, this analysis does not rule out the possibility that postposing may be driven by the altruistic motivation in some specialized cases. It just talks about the general tendency of postposing in Japanese. In fact, Shimojo (2005: 216) states that there are cases where ‘urgent or immediately relevant information is presented first, which results in postposing of other information’. Further studies are needed in order to address this issue.

Fifth, the TP values of *O*-marked objects are much lower in the present analysis than in Shimojo (2005). This difference may be caused by the existence of overt subjects. In Shimojo’s study, the NPs marked by the accusative case *O* were indiscriminately assembled from his spoken Japanese data. Thus, the sentence where the *O*-marked NPs arise can contain many kinds of subjects marked by a zero particle, the conjunctive particle *MO*, highlighting particles *SAE*, *SURA*, and *DATTE*, and focus particles *DAKE* and *NOMI*. Moreover, zero subjects are included in his data. In contrast, all the accusative objects in this study are combined with the *GA*-marked subjects or *WA*-marked subjects. Since *GA*-marked or *WA*-marked subjects are cataphorically salient and tend to be taken

over to the following sentences, the writers may have focussed on the *GA* or *WA* marked referents instead of *O*-marked ones. When a writer marks the subject explicitly by using the nominative case *GA* or the topic marker *WA*, his or her conscious intention may be headed for the subject and indifferent to the *O*-marked object.

4.4.2. Scrambling and Topicalization

Here, let us consider the discourse properties of scrambling and topicalization on the basis of the basic findings from the quantitative analysis. Recall that scrambled objects have low RD and low TP whereas topicalization has the *WA*-marked objects whose RD is low but TP is high. This is caused by the interactions between OSV and particles. The direct objects in OSV tend to be given information, showing low RD. *WA*-marked nouns are more apt to be referred to repeatedly after they appear than *GA*-marked or *O*-marked nouns, showing high TP. In addition, *GA*-marked nouns are more likely to be taken over to the following sentences than *O*-marked referents, resulting in relatively high TP. Consequently, in *O*_{ACC}SV, the scrambled objects are apt to be given information because they have antecedents in the previous sentences and the succeeding sentences tend to have a link with the referent of the subject in *O*_{ACC}SV. To put it another way, there is a tendency that the referents of the scrambled objects will not appear in the succeeding sentences.

These facts can be generalized by the notion of ‘topic shift’ from the referent of the object to that of the subject; OSV are accompanied by a shift of topic from the object to the subject. Let us illustrate the discourse function of scrambling by citing an actual example from BCCWJ. Note that (18b) is an $O_{ACC}S_{NOM} V$ sentence. Here, the scrambled object *sono hanbai* ‘that sale’ is marked with a demonstrative *sono* ‘that’, which refers to *nettowāku kiki* ‘network device’, which was once mentioned in (18a). In other words, the scrambled object has its antecedent in the immediately preceding sentence. However, after (18b), the center of the discourse will move on to *Cisco*, which is the subject of $O_{ACC}S_{NOM}V$. In fact, it has been made reference to several times after it first appeared in (18b). On the other hand, the scrambled object *sono hanbai* ‘that sale’ has not been mentioned again in (18c, d, e, f). Thus, we can state that topic shift occurs from (18b) to (18c) because the center of attention changes from *sono hanbai* ‘that sale’ to *Cisco*.

- (18) a. *sōnaruto,* *nettowāku-kiki-ga* *hituyōni-naru.*
 if.that.is.the.case network-device-NOM necessary-become
 ‘If that is the case, network devices become necessary.’
- b. *sono-hanbai-o* *Cisco-ga* *uke,*
 that-sale-ACC Cisco-NOM handle

c. rieki-o ageru-toyū

profit-ACC make-APP

d. eigyōsenryaku-dearu.

business.strategy-COP

‘Cisco’s business strategy is to handle those sales, and by doing so they make a profit.’

e. yueni Cisco-wa tsuneni saisentan-no

therefore Cisco-TOP constantly cutting.edge-GEN

business-model-o hyōbōdekiru-yō

business-model-ACC advocate-in.order.to

f. mizukara henka-o tsuzuketeki-ta.

by.themselves change-ACC continue-PAST

‘Therefore, Cisco continues to change from the inside, in order to constantly adapt to cutting-edge business models.’

In contrast, when $O_{TOP}S_{NOM}V$ is selected, the speaker/writer continues to talk about the referent of the object in general. This is because the function of *WA*-marked objects is to convey the intention that objects will stay on as the center in the succeeding sentences.

Look at an O_{TOP}S_{NOM}V sentence shown in (19c). The topicalized object *taishikan* ‘embassy’ in (19c) has its antecedent *beikoku taishikan* ‘American Embassy’ in (19a). Moreover, after (19c), *taishikan* ‘embassy’ appears several times in the succeeding sentences. Therefore, we can generalize that O_{TOP}S_{NOM}V is selected when the writer continues talking about the same entity that he or she was talking about before.

- (19) a. beikoku-taishikan-biru-jitai-wa yaku-nijūnin-no
America-embassy-building-itself-TOP about-20-GEN
Iraq-keisatsukan-ga iriguchi-de keibi-ni ataru-teido
Iraqi-police-NOM entrance-LOC guard-DAT in.charge.of-degree
'The entrance of the America Embassy building itself is guarded by about
20 Iraqi police.'
- b. beikoku-wa senkyūhyakukyūjūnen-no wangankiki-igo
America-TOP 1990-GEN Gulf.war-after
Iraq-to gaikōkankei-o danzetsushiteori,
Iraq-with diplomatic.relations-ACC broke.off
'After the Gulf War in 1990, America broke off diplomatic relations with
Iraq, and'

c. taishikan-wa Poland-ga riyōshitei-ta.

embassy-TOP Poland-NOM use-PAST

‘Poland used the embassy.’

d. ima-wa tatemono-wa beikoku-no te-ni modot-ta-ga

now-TOP building-TOP America-GEN hand-DAT return-PAST-though

‘The building has returned to American hand, but’

e. taishikan-in-wa subete kanrikuiki-nai-ni aru

embassy-staff-TOP all Green Zone-inside-LOC be-NONPAST

f. Rasheed Hotel-ni shukuhakushi,

Rasheed Hotel-LOC stay.at

‘all the Embassy staff stay at the Al Rasheed Hotel which is inside the Green Zone, and’

g. gyōmu-mo dōkuiki-nai-de okonatteiru-toyū.

affairs-PART the.zone-inside-LOC conduct-it.is.said

‘it is said that they conduct their affairs inside the zone.’

To summarize the functional differences between scrambling and topicalization,

O_{ACC}SV expects ‘topic shift’ from the referent of the scrambled object to that of the

subject and O_{TOPSV} anticipates ‘continuing topic’ as the referent of the object. The speaker/writer employs O_{ACCSV} when he or she intends to start a new discourse and continues talking about the referent of the subject in the succeeding discourse. On the other hand, when O_{TOPSV} is chosen, the speaker/writer prefers talking about the same referent, which is realized as the object in O_{TOPSV} .

4.4.3. Reconsideration of the Processing Cost Based Approach

Several scholars contend that word order changes are motivated by heaviness (Hawkins 1994; Yamashita 2002; Yamashita and Chang 2001). According to their hypothesis, heavy constituents are moved leftward in order to reduce processing costs in Japanese. Specifically, Yamashita and Chang (2001) demonstrated that native Japanese speakers were prone to move long constituents to earlier positions than short constituents in sentence production. When participants were given the experimental sentence such as (20a) or (20b) and asked to reproduce it as accurately and quickly as possible, they were more likely to prepose longer objects than shorter objects. For instance, OSV sentences with a long object like (21b) were more frequently produced than those with a short object like (21a).

- (20) a. SOV with a long subject and a short object

se-ga	takaku-te	gasshirishita	keiji-ga
height-NOM	tall-and	tough	detective-NOM
hannin-o oikake-ta.			
suspect-ACC chase-PAST			

‘The detective who is tall and tough chased the suspect.’

- b. SOV with a short subject and a long object

keiji-ga	se-ga	takaku-te	gasshirishita
detective-NOM	height-NOM	tall-and	tough
hannin-o oikake-ta.			
suspect-ACC chase-PAST			

‘The detective chased the suspect who is tall and tough.’

(Yamashita and Chang 2001: B47)

- (21) a. OSV with a long subject and a short object

hannin-o	se-ga	takaku-te	gasshirishita
suspect-ACC	height-NOM	tall-and	tough
keiji-ga oikake-ta.			
detective-NOM chase-PAST			

‘The detective who is tall and tough chased the suspect.’

- b. OSV with a short subject and a long object

se-ga	takaku-te	gasshirishita	hannin-o
height-NOM	tall-and	tough	suspect-AC
keiji-ga	oikake-ta.		
detective-NOM	chase-PAST		

‘The detective chased the suspect who is tall and tough.’

(adapted from Yamashita and Chang 2001: B47)

Based on her text data, Yamashita (2002) insists that heaviness is more important for word order changes than anaphoricity⁶. In her written Japanese data, heaviness accounts for about 70% of the scrambled sentences while anaphoricity makes up about 25%. To be more concrete, 70% of scrambled objects are long and 25% of them include a determiner or an anaphor. Let us have a look at (22a) for heaviness and (22b) for anaphoricity.

⁶ In her interpretation, ‘heavy’ constituents include a subordinate or relative clause whereas ‘referential’ constituents contain a determiner or an anaphor referring to something directly mentioned in the preceding context or inferable from it (Yamashita 2002: 6-4-5). In this definition, ‘referentiality’ does not take proper nouns into consideration and thus it should be called ‘anaphoricity’.

(22) a. *watashi-ga oboeteiru hanashi-o_i kare-wa t_i sukkari*
 I-NOM remember story-ACC he-TOP completely
wasureteiru-kamoshirenai.

has.forgotten-maybe

‘He may have forgotten completely the story that I remember.’

(Yamashita 2002: 604)

b. *akaruku-te atatakai kanji dashi, sono atatakasa-o_i*
 cheerful-and warm look and that warmth-ACC
mawari-ni-mo t_i furimaite kuresō.

surrounding.people-to-also sprinkle looks.like

‘[He] looks like he is cheerful and warm, and [he] looks likely to give such
 benevolence to people around them.’

(Yamashita 2002: 606)

We can see that, in (22a), the scrambled direct object *watashi-ga oboeteiru hanashi* ‘the story that I remember’ is heavy because it contains a relative clause. On the other hand, in (22b), the scrambled direct object *sono atatakasa* ‘that warmth’ is anaphoric because it includes a demonstrative *sono* ‘that’. She observed a quasi-complementary

distribution between heaviness and anaphoricity because almost all anaphoric constituents were light.

Although Yamashita admits that there is a weak correlation between scrambling and anaphoricity, she defies the proposal that scrambling is affected by givenness. In fact, she even states that givenness has nothing to do with scrambling in Japanese. However, her data contain various types of scrambling: VP-internal, short-distance, and long-distance scrambling. Therefore, it is conceivable that some types of scrambling are influenced by givenness while the others are not. Indeed, Imamura (2015a) demonstrated using a corpus analysis that the effects of givenness were stronger in VP-external scrambling (OSV) than in VP-internal scrambling (S-DO-IO-V). Here, I am going to reconsider the validity of Yamashita's arguments. Firstly, she indicated that there are cases where scrambled constituents represent new information. In (23), the scrambled constituent, *dare-ni totte-mo jinsē-ni oite mudana koto-wa nani hitotsu-mo nai-to* 'no matter who you are, there is nothing in life that is meaningless to you', is an addition of new information to the discourse because it is neither evoked by the discourse nor assumed by the speaker to be known to the listener. However, (23) is not an OSV sentence and is not crucial counter example to the hypothesis that OSV is strongly influenced by givenness. Additionally, (23) uses a thinking verb *omou* 'think'.

It is conceivable that there are some correlations between scrambling and verb types. In fact, seven out of nineteen examples (36.8%) in her data contain a saying verb *iu* ‘say’ or a thinking verb *omou* ‘think’. In such a special case, it is possible that information structure does not work. It seems that heaviness has an influence on the choice of word order in (23). To be more concrete, the constituents are ordered so that the long complement is placed before the short subject.

- (23) *demone, darenī tottemo jinsē-nioite mudana koto-wa*
 however whoever for life-in meaningless thing-TOP
nanihitotsumo-nai-to_i watashi-wa t_i omou kedo-ne.
 one-exist.NEG-COMP I-TOP think but-FP
 ‘You know, no matter who you are, there is nothing in life that is meaningful to
 you, I think.’

(Yamashita 2002: 609)

Secondly, Yamashita’s examples include the case of VP-internal scrambling, in which the direct object is not preposed to the sentence-initial position but to the position between the subject and the indirect object. Since the direct object is fronted to the non-

sentence-initial position, the informational status of scrambled object is apparently unrelated to the purpose of starting a sentence with given information. For example, in (24), the scrambled object, *K-ko-chan-ni ijimerareteiru-koto-o* ‘that she was being bullied by K-ko’ is moved to the position just after *WA*-marked subject *uchino ko-wa* ‘my child’.

- (24) demo , uchino ko-wa, *K-ko-chan-ni* *ijimerareteiru-koto-o*_i
but my child-TOP K-ko-N.SU-by being.bullied-fact-ACC
ichido-mo watashi-ni *t_i* hanashi-masen.
once-even I-DAT talk-NEG
‘My child would never tell me that she was being bullied by K-ko, not even once.’

(Yamashita 2002: 610)

However, the fact that VP-internal scrambling is not affected by givenness does not necessarily mean that VP-external scrambling is not influenced by givenness as shown in Imamura (2015a). Thus, (24) is not a crucial counter example to the hypothesis that the usage of OSV depends on givenness.

Finally, Yamashita reported that only 38.4% (seven out of nineteen) of the examples represent given information. However, it is conceivable that she excluded brand-new anchored NPs from given information. She cited (22a) as an example that includes a ‘heavy’ scrambled object, *watashi-ga oboeteiru hanashi* ‘the story that I remember’. Yet, this object is an anchored brand-new NP in that it contains *watashi* ‘I’. It should be noticed that the 1st person pronoun is permanently semi-activated and thus can be regarded as given information. The reason why she categorized many scrambled constituents into new information may derive from the definition of givenness.

In sum, Yamashita (2002)’s findings are interesting, but they are not crucial counter examples to the possibility that OSV is related to givenness. Even if scrambling is performed in order to facilitate the processing of a sentence, it is conceivable that it is also influenced by givenness.

4.4.4. Postposing and Scrambling

In terms of RD and TP values, there is a functional correspondence between scrambling and postposing, which is shown in (25).

(25) *boku-wa koroshiteshimat-ta-nda, koibito-o.*

I-TOP kill-PAST-COP lover-ACC

‘I killed my lover.’

(Kamio and Takami 1998:156)

According to Shimojo (2005: 127), the postposed arguments have an intermediate value of RD and low value of TP. Does it mean that scrambling is functionally similar to postposing? Generally speaking, there are three main functions of postposing as summarized by Shimojo (1995:124): ‘the postverbal elements represent i) old information, which is presupposed, deducible, recoverable, etc ii) less important or relevant information than the information represented by the preceding preverbal elements, or iii) information which plays a role to disambiguate or modify the information represented by the preceding elements’. It is conceivable that scrambling also has the functions shown in (i) and (ii). Yet, I claim that scrambling cannot be used for the purpose of ‘after thought’ like (iii). Unlike postposing, scrambled objects in OSV are situated in the sentence-initial position and thus there is no preceding arguments within OSV. For example, in (26), the scrambled object *sono ringo* ‘that apple’ precedes both the subject *Taro* and the predicate *tabeta* ‘ate’.

- (26) sono-ringo-o Taro-ga tabe-ta.
that-apple-ACC Taro-NOM eat-PAST
‘Taro ate the apple.’

This is why scrambling cannot be used for explaining the details of the other preceding constituents within the same clause. In fact, the scrambled object cannot disambiguate or modify the information related to the subject or the predicate in OSV. Therefore, I maintain that the discourse functions of scrambling are related to old information and less important information, not to ‘afterthought’. It should be noted that the use of afterthought coincides with pause type postposing and non-pause type postposing agrees with old information or less important information (Shimojo 2005; Simon 1989). In the same way, Nakagawa, Asao, and Nagaya (2008) claim that non-pause type postposing correlates with old information whereas pause type postposing interrelates with new information. Taken together, it seems that scrambling and non-pause type postposing share the same discourse function in the sense that moved arguments mark old or less important information.

With regard to the corpus analysis of non-pause type postposing, Shimojo (2005: 202) found that the token frequency observed in the spoken Japanese is clearly

asymmetric. Remarkably, there was no example which postposed an *O*-marked object⁷.

What I should note here is that it is grammatical to postpose the direct object, as shown in (25), but Shimojo did not observe such an example. Why did the speakers avoid using postposing for accusative objects? One explanation about the asymmetric distribution between scrambling and non-pause type postposing depends on the violation of discourse principles. It should be noted that postposed elements are less important than non-postposed ones (Kamio and Takami 1998; Maynard 1989; Simon 1989; Shimojo 1995, 2005; Takami 1995). Moreover, scrambled elements and postposed ones tend to be given information (Imamura 2014, 2015a, 2016a, b; Imamura, Sato, and Koizumi 2014, 2016; Ishii 2001; Koizumi and Imamura 2016; Kuno 1978; Nakagawa, Asao, and Nagaya 2008) but they differ from each other in the sense that the former is a leftward movement whereas the latter is a rightward movement. If given information is moved leftward like scrambling, it follows given-new ordering and observes the discourse principle defined in (27). In contrast, if given information is moved rightward like postposing, it violates given-new ordering and does not follow (27). In addition, Kuno's markedness principle for discourse rule violations (28) predicts that scrambling is less penalized than

⁷ In the same way, only two examples postposed *O*-marked objects without a pause in the core data of the Corpus of Spontaneous Japanese (CSJ). The subset of CSJ named the *Core* includes about 44 hours of speech (Maekawa 2004).

postposing because scrambling obeys the discourse principle (27) whereas postposing violates (27). Thus, it is conceivable that scrambling is more desirable than postposing in terms of information structure. Note that scrambling is expected to compete with postposing in terms of RD and TP values. This may lead to the low frequency of the postposed accusative objects because scrambling is preferable to postposing in terms of given-new ordering.

(27) Information Flow Principle

In principle, words in a sentence are arranged in such a way that those that represent old, predictable information come first, and those that represent new, unpredictable information last

(Kuno 1978: 54)

(28) Markedness Principle for Discourse-Rule Violations

Sentences that involve marked (or intentional) violations of discourse principles are unacceptable. On the other hand, sentences that involve unmarked (or unintentional) violations of discourse principles go unpenalized and are acceptable.

(Kuno 1987: 212)

Alternative explanation partly relies on Fukui (1993), who proposed that the cost of a movement operation is determined by the Parameter Value Preservation, which is shown in (29). Here, parameter is determined by head-parameter. According to (29), it is costless to move a certain constituent when the resulting structure is compatible with the parameter value for the language. Since Japanese is a head-final language, leftward movements are considered to be costless while rightward movements are expected to be costly. In fact, Fukui (1993: 402) explicitly states that ‘in Japanese leftward movement of an object need not have any driving force and can be optional, whereas rightward movement does need some grammatical factor that makes it forced (or obligatory)’. What I should emphasize here is that scrambling is a leftward movement while postposing is a rightward movement. Therefore, if Fukui’s hypothesis is on the right track, scrambling will be a costless movement because it is a leftward movement whereas postposing is a costly movement because it is a rightward movement. Although his claim is too strong because the processing costs of scrambling has been observed in previous studies (Chujo, 1983; Imamura, Sato. and Koizumi 2014, 2016; Koizumi and Imamura 2016; Koizumi and Tamaoka, 2010; Miyamoto and Takahashi, 2002; Tamaoka et al. 2005), it is possible that scrambling is not as costly as postposing. If so, scrambling is considered to be preferable to postposing in terms of processing costs. This may be the reason why the

accusative objects were not frequently postposed in spoken Japanese data. To summarize the above discussion, both functional account and syntactic explanation predict that postposing is costlier than scrambling.

(29) The Parameter Value Preservation (PVP) measure

A grammatical operation (Move- α , in particular) that creates a structure that is inconsistent with the value of a given parameter is costly in that language, whereas one that produces a structure consistent with the parameter is costless.

(Fukui 1993: 402)

The syntactic explanation presupposes that postposed elements are moved from the in-situ position. Yet, it also is possible that postposed elements are derived from the deletion as proposed by Tanaka (2001). ‘In simple terms, ‘movement’ is an operation to displace a syntactic item at a different site in a syntactic structure; ‘deletion’ is an operation to omit the phonological part of a syntactic item in a structure’ (Seraku and Ohtani 2016: 215). According to Tanaka (2001), postposed elements derive from three stage operations. Let us have a close look at the derivation of the postposed sentence (30b), whose canonical counterpart is shown in (30a). As shown in (31a), Tanaka’s

analysis assumes that the postposed sentence (30b) consists of two parallel structures. At the first stage, the accusative object *LGB* is dislocated toward the clause initial position in the second sentence via the scrambling operation. At the second stage, everything but *LGB-o* is phonetically deleted, creating the postposed sentence (31c). Note that (31c) corresponds to (30b) in terms of the linear order.

(30) a. John-ga LGB-o yon-da-yo.

John-NOM LGB-ACC read-COP-FP

‘John read LGB.’

b. John-ga yon-da-yo, LGB-o.

John-NOM read-COP-FP LGB-ACC

‘John read it, LGB.’

(Tanaka 2001: 551)

(31) a. John-ga pro yonda-yo, John-ga LGB-o yon-da-yo.

—scrambling →

b. John-ga pro yonda-yo, LGB-o [John-ga ti yon-da-yo]

—deletion →

c. John-ga pro yonda-yo LGB-o [~~John-ga ti yon-dayo~~]

(Tanaka 2001: 552)

However, Tanaka's movement/deletion analysis does not distinguish non-pause type postposing from pause type postposing. Thus, it is possible that his analysis can be applied only for pause-type postposing. Building on Nomura (2008), Seraku (2015) points out that pause-type postposing may comprise two independent sentences. Since Japanese permits one-word sentences, the sentence (32) may be composed of two independent sentences. Note that *inu-dake-wa* 'only the dog' can be a one-word sentence. Taking these facts into consideration, it is conceivable Tanaka's analysis is compatible with pause-type postposing but not with non-pause type postposing. Although postposed elements of the pause type may be base-generated in the postposed position (Seraku 2015) or belong to a different clause (Tanaka 2001), postposed elements of the non-pause type may be displaced from their in-situ positions toward their postverbal positions in a single clause.

(32)	kaet-te	ki-ta-yo	inu-dake-wa.
	return-LK	come-PAST-FP	dog-only-TOP

‘Only the dog came back to us.’

(Nakagawa, Asao, and Nagaya 2008: 6)

Next, let us compare non-pause type postposing with scrambling from a view point of argument positions. As shown in (33), postposing can be applied to various kinds of constituents. Postposing is applied to a *GA*-marked constituent in (33a), *WA*-marked constituent in (33b), and *O*-marked constituents in (33c). They are all grammatically correct.

(33) a. Post-predicative *GA*

ikko-mo nakat-ta-no hondana-ga.

1.thing-even exist.NEG-PAST-FP bookcase-NOM

‘There was not a single bookcase.’

(Shimojo 2005: 213)

c. Post-predicative *WA*

kiteta-ne ano-ko-wa.

was.coming-FP that-girl-TOP

‘That girl came.’

(Shimojo 2005: 210)

b. Post-predicative *O*

tsuini ate-ta-zo ooana-o.

finally hit-PAST-FP jackpot

‘Finally, I hit the jackpot.’

(Takami 1995: 228)

Unlike postposing, scrambling cannot be used for the sentence-initial constituent because it is a leftward movement and there is no place to move it. In order to move the sentence-initial constituent due to a pragmatic reason, the native Japanese speaker cannot rely on scrambling and needs to select postposing. It should be noted that the sentence-initial position is normally occupied by the subject in Japanese because its basic word order is SOV. Thus, scrambling generally disagrees with the subject. In the same vein, Saito (1985) proposes that subjects cannot be scrambled at all. First, a numeral quantifier cannot qualify a NP when another NP intervenes between them. Second, a numeral quantifier can be related to the NP through the trace, as exemplified by (34). In (34c), *John* intervenes between the direct object *sake* and the quantifier *sanbon* ‘three bottles’. However, (34c) is a completely acceptable sentence. Note that the direct object is

scrambled toward the sentence-initial position and leaves its trace at the in-situ position.

Thus, *sanbon* is adjacent to the trace of sake, resulting in an acceptable sentence (34c).

- (34) a. John-ga sanbon-no sake-o motte-ki-ta.
 John-NOM 3.bottle-GEN sake-ACC with-come-PAST
 ‘John came with three bottles of sake.’
- b. John-ga sake-o sanbon motte-ki-ta.
 John-NOM sake-ACC 3.bottle with-come-PAST
 ‘John came with three bottles of sake.’
- c. sake_i-o John-ga sanbon *t_i* motte-ki-ta.
 sake-ACC John-NOM 3.bottle with-come-PAST
 ‘John came with three bottles of sake.’

(Saito 1985: 212)

Considering the above observation into consideration, let us have a close look at (35).

There is no problem about (35b) because the floating quantifier *sannin* ‘three people’ is adjacent to its host NP *gakusei* ‘student’. On the other hand, in (35c), if the subject *gakusei* were scrambled to the sentence-initial position as in (35d), this would result in a

However, (35c) is a completely unacceptable sentence. This fact indicates that scrambling is not permitted for the subject.

- (adapted from Saito 1985: 211)

Furthermore, subject scrambling across a clause boundary can lead to unacceptable sentences, as shown in (36). Both (35c) and (36b) are unacceptable due to syntactic reasons. However, Saito's observations at least partly support the view that scrambling is not compatible with subjects in general.

- (36) a. John-ga [s sono okashi-ga oishii-to] omotteiru (koto)
 John-NOM that candy-NOM tasty-COMP think-PROG fact
 'John thinks that that candy is tasty.'
- b. * sono okashi-ga_i John-ga [s t_i oishii-to] omotteiru (koto)
 that candy-NOM John-NOM tasty-COMP think-PROG fact
 'John thinks that that candy is tasty.'

In Shimojo's spoken Japanese data, there were postposed referents that were marked by the nominative case marker *GA* or the topic marker *WA*, but the post predicative *O* was not observed. This fact can be explained in the following way. First, scrambling has priority over postposing because the former is not as costly as the latter. This is why *O*-marked objects are scrambled, not postposed. Second, scrambling cannot be applied for the sentence-initial referents. With regard to sentence-initial constituents,

postposing is employed instead of scrambling. Generally speaking, sentence-initial referents are subjects because Japanese is an SOV language. It should be noted that subjects are normally marked by the nominative case marker *GA* or the topic marker *WA*. Thus, postposed referents in spoken Japanese data included *GA*-marked or *WA*-marked examples. Taken together, there is a complementary distribution between scrambling and postposing about the in-situ positions of moved referents. This logic is summarized in (37).

(37) Complementary Distribution between Scrambling and Postposing

- a. With regard to non-sentence-initial constituents, scrambling is preferable to postposing.
- b. With regard to sentence-initial constituents, postposing is selected because scrambling cannot be applied for them.

4.4.5. General Property of Word Order Changes

In this section, let us incorporate topicalization into my account for the sake of a more descriptively adequate analysis. It should be noted that not only scrambling and postposing but also topicalization tend to have an intermediate RD. It should be noticed

that scrambling, topicalization, and postposing are all categorized into word order permutations. Hence, it is possible that intermediate RD values correlate with word order changes as a whole in Japanese. This proposal can be supported by the following *reductio ad absurdum*. First, it has been observed in Japanese that highly accessible constituents are expressed by zero pronouns, which are phonetically unrealized arguments of the verb. In (38b), for instance, the direct object of *mita* ‘saw’ is a zero pronoun (indicated by Ø) because it refers to the movie called *Shichinin no samurai* ‘the Seven Samurai’ but has no phonetic form. Note that the zero pronoun has its antecedent in the immediately preceding sentence (38a).

- (38) a. *kimi-wa kinō terebi-de Shichinin no Samurai-o mi-ta-no?*
 you-TOP yesterday television-on The Seven Samurai-ACC see-PAST-Q
 ‘Did you watch the Seven Samurai on television yesterday?’
- b. *un, boku-wa Ø mi-ta-yo.*
 yes, I-TOP (it) see-PAST-PTCL
 ‘Yes, I watched it.’

According to Hinds (1978, 1982), zero pronouns are chosen as the unmarked form of

topic continuity. In fact, Kuno (1978: 8) observed that the Japanese language prefers to drop constituents except for the main verbs when they are recoverable from the discourse context. For example, in (39b), all constituents except for the verb *aruku* ‘walk’ are omitted because they are once mentioned in (39a) and easily recoverable from the preceding context.

- (39) a. *kimī-wa kinō sanji-goro Hanako-to*
 you-TOP yesterday three.o’clock-about Hanako-with
 Kanda-o *aruitei-ta-ka?*
 Kanda-o walk-PAST-Q
 ‘Did you walk in Kanda at three o’clock with Hanako?’
- b. *un, Ø Ø aruitei-ta.*
 yes (I) (with Hanako) walk-PAST
 ‘Yes, (I) walked (in Kanda at Three o’clock with Hanako).’

(Kuno 1978: 9)

From a view point of the Givónian approach, Hinds (1983) observed that the RD of zero pronouns is about 1 on average. In other words, zero pronouns have their

antecedents in the immediately preceding sentence in general. Moreover, word order changes cannot be applied to phonetically null constituents. Therefore, word order changes conflict with highly accessible arguments, which are usually realized as zero pronouns.

Second, when the direct object is new information, there is no motivation for scrambling or topicalization. Cinque (1993) proposed that the main stress of the sentence is on its most embedded constituent. Normally, the deepest position in a sentence is the direct object in SOV. It should be noted that strongly stressed constituents are normally focused and thus new information. Generally speaking, the direct object in SOV is considered to be new information. Kuno (1978: 60) supports this idea by asserting that the immediately pre-verbal position is the default position for new information or important information. In SOV, the direct object is already placed in the informationally desirable position. There is no need to move the direct object towards the sentence initial position when it is new information. With regard to postposing, Takami (1995:228) stated that postposed constituents are not important information. Important information by and large corresponds to new information (Takami and Kuno 2006:188). Thus, postposing also contradicts new information. Taken together, I conclude that scrambling, topicalization, and postposing are all inconsistent with both highly accessible information

and new information. Thus, word order changes are considered to be applied for intermediately accessible information. This may be the reason why they have an intermediate RD.

In sum, word order changes are expected to correlate with intermediately accessible information. When the speaker plans to use a word order change before he or she makes the utterance, he or she picks up an intermediately accessible referent as a candidate for the displacement. In consequence, displaced constituents tend to be given information in Japanese. Yet, one may claim that this tendency does not hold of postposing. This is because pause type postposing is considered to be compatible with new information (Nakagawa, Asao, and Nagaya 2008). However, as discussed in section 4.4.4, pause type postposing may not include a movement. Seraku (2015) supports the view that postposed elements of pause type are base-generated in the post-verbal position. If pause type postposing is not normally related to the movement operation, we can still maintain that word order changes are relevant to intermediately accessible information.

4.5. Summary

This chapter has investigated the interactions between word order changes and particles in terms of discourse functions, using a quantitative approach. The findings from the

quantitative analyses delineate the functional properties of scrambling and topicalization. To begin with, it has been demonstrated that the direct objects in OSV and *WA*-marked referents are inclined to be given information. However, changing word orders from SOV to OSV does not affect the cataphoric topicality. Cataphoric topicality depends largely on particles; *WA*-marked referents are more likely to be taken over to the succeeding sentences than *GA*-marked referents, which are in turn referred to in the following sentences more frequently than *O*-marked referents. Consequently, the discourse functions of scrambling and topicalization can be accounted for by the interactions between word order changes and particles. With regard to $O_{ACC}SV$, the direct objects are apt to be given information because the direct objects are anaphorically salient in OSV word orders. Moreover, the nominative or topicalized subjects are referred to again more frequently in the following discourses than the accusative objects because *GA*-marked or *WA*-marked referents are cataphorically more salient than *O*-marked referents. With regard to $O_{TOP}S_{NOM}V$, the direct objects are also inclined to be given information because $O_{TOP}S_{NOM}V$ is an OSV word order. In addition, the topicalized objects are more likely to be mentioned again in the following sentences because *WA*-marked constituents are cataphorically more salient than *GA*-marked constituents. Thus, I conclude that scrambling is related to ‘topic shift’ and topicalization is pertinent to ‘continuing topic’.

The discourse functions of scrambling and topicalization are summarized in (40).

(40) Discourse Properties of Scrambling and Topicalization

- a. $O_{ACC}SV$ anticipates ‘topic shift’ from the referent of the scrambled object to that of the subject. Therefore, $O_{ACC}SV$ is selected when the speaker/writer intends to start a new discourse and continues talking about the referent of the subject after $O_{ACC}SV$ appear.
- b. $O_{TOP}SV$ predicts ‘continuing topic’ as the referent of the subject. $O_{ACC}SV$ is chosen when the speaker/writer intends to talk about the same referent, which is expressed as the object in $O_{TOP}SV$.

On the basis of Shimojo (2005) and the corpus analysis of word orders in this chapter, I propose that there is a complementary distribution between scrambling and postposing about their targets. To begin with, Shimojo (2005: 203) found that *O*-marked objects were not postposed at all although it is grammatical to postpose direct objects. This result can be explained in the following way. First, scrambling may not be as costly as postposing as a movement operation. Second, scrambling follows given-new ordering while postposing violates it. Anyway, scrambling is expected to be preferable to

postposing. Third, scrambling can be applied to non-sentence initial constituents. In consequence, it seems that scrambling is preferable to postposing with regard to non-sentence-initial constituents. On the other hand, with regard to sentence-initial constituents, postposing is selected instead of scrambling because sentence-initial elements cannot be scrambled at all.

Next, it has been revealed that there is a common property shared by scrambling, postposing, and topicalization. They are all applied to intermediately accessible information. Therefore, I suggest that word order changes in Japanese correlates with intermediately accessible referents. The differences between scrambling, postposing, and topicalization depend on other pragmatic factors or syntactic factors. For example, topicalization has a contrastive meaning while scrambling does not (Ishii 2001; Yamashita 2002). If the speaker would like to use an OSV word order without creating a contrastive reading, scrambling should be employed.

Since we have focussed on information structure of word order changes, let us move on to the factors other than information structure. Specifically, the next chapter discusses the usages of scrambling and topicalization in terms of heaviness and animacy, taking processing cost into consideration.

Chapter 5

Functional Analysis of Word Orders in terms of Heaviness and Animacy

5.1. Overview

Based on the method described in chapter 3 (see section. 3.4 and 3.5), the present chapter provides a functional analysis of scrambling and topicalization in terms of heaviness and animacy. This chapter is structured as follows. Section 5.2 overviews previous studies regarding the influences of heaviness and animacy on word orders. Specifically, section 5.2.1 provides an empirical and theoretical background about heaviness and word order. Section 5.2.2 lays out empirical foundations about the relationship between animacy and word order. Section 5.3 offers a corpus analysis of SOV and OSV word orders in terms of heaviness and animacy. Based on the results of the corpus analysis explained in section 5.3, section 5.4.1 draws conclusions about the relationship between heaviness and word order change and posits prospects for future studies. Specifically, I propose that both scrambling and topicalization interrelate with the ‘relative heaviness’ between related elements. It is shown in section 5.4.2 that the effects of animacy are too weak to be observed in the corpus. However, there is a strong interrelation between animacy and

grammatical function assignments. In other words, subjects correlate with animate nouns and objects interrelate with inanimate nouns. Based on this fact, I propose that animacy has a direct link with grammatical function assignments but not with the choice of word orders. Section 5.4.3 discusses the relationships among word orders, givenness, heaviness, and animacy. On the basis of the corpus analyses performed in chapter 4 and 5, I shall propose that word order changes are affected by givenness and heaviness, but not by animacy. Moreover, several shortcomings of corpus data are pointed out, which leads to the conclusion that an alternative approach such as psycholinguistic experiments are needed in order to explain the usages of word order changes with precision. Section 5.5 summarizes the discussion and provides a tentative conclusion concerning the use of scrambling and topicalization in terms of givenness, heaviness, and animacy.

5.2. Word Order, Heaviness, and Animacy

In chapter 4, it was revealed that information structure has a great influence on word order changes in Japanese. The present chapter reconsiders the usages of scrambling and topicalization in terms of two important factors other than information structure: heaviness and animacy. Hawkins (1990, 1992, 1994) insists that heaviness is a determining factor in word order, and the others are just epiphenomenal factors.

According to his theory, the effects of animacy and information structure derive from the correlation of heaviness with animacy and information structure. However, heaviness is not the only factor that influences word order. The choice of word order is, rather, determined by multiple factors (Arnold et al. 2000; Bresnan et al. 2007; Gries 2003; Heidinger 2013; Imamura 2014, 2015a; Kizach and Balling 2013; Rosenbach 2005; Siewierska 1993; Wasow and Arnold 2003). Indeed, it has been demonstrated that heaviness, information structure, and animacy affect the choice of word order independently (Arnold et al. 2000; Heidinger 2013; Imamura 2014, 2015a; Kizach and Balling 2013; Rosenbach 2005; Siewierska 1993). These studies clearly indicate that heaviness, information structure, and animacy are independent factors, neither of them being an epiphenomenon of the other factor. Therefore, it is necessary to take each factor into consideration in order to deepen our understanding of the role of word order changes in Japanese. To this end, this chapter explores the usages of scrambling and topicalization in terms of heaviness and animacy.

5.2.1. Heaviness

It has been reported in many studies that word order changes are influenced by heaviness (Arnold et al. 2000; Heidinger 2013; Imamura 2014, 2015a; Kizach and Balling 2013;

Rosenbach 2005; Seoane 2009; Siewierska 1993; Stallings and MacDonald 2011; Wasow 2002). In English, there is a preference for short constituents to come before long ones (Hawkins 1994; Rosenbach 2005; Seoane 2009; Wasow 2002). For example, Arnold et al (2000) confirmed in their corpus analysis that the longer element tends to follow the lighter one in the two constructions shown in (1) and (2). Put another way, shifted orders shown in (1b) and (2b) become more frequent when the direct object (the wine in (1) and a bowl in (2)) is longer than the other constituent (the table in (1) and Terry in (2)). Indeed, as shown in (3b), if a light NP, *a song*, were moved toward the end of a sentence, the sentence would be unacceptable. In contrast, as shown in (3c), if a heavy NP, *a song that was written by a famous guitar player from Texas*, was shifted after the PP, *with friends*, the sentence would be acceptable. The word order changes in English are influenced by ‘short-before-long’ preference. The same tendency has been observed in Heidinger (2013) for Spanish, Kizach and Balling (2013) for Danish, and Siewierska (1993) for Polish.

(1) Heavy NP Shift

- a. The waiter brought the wine we had ordered to the table.
- b. The waiter brought to the table the wine we had ordered.

(2) Dative Alternation

a. Chris gave a bowl of Mom's traditional cranberry sauce to Terry.

b. Chris gave Terry a bowl of Mom's traditional cranberry sauce.

(Arnold et al. 2000: 28)

(3) a. Bill sang a song with friends.

b. *Bill sang with friends a song.

c. Bill sang with friends a song that was written by a famous guitar player from Texas.

(Yamashita & Chang 2001: B46)

In contrast, it has been demonstrated in the corpus studies of Japanese that the longer constituent tends to precede the shorter one (Dryer 1980; Howkins 1994; Imamura 2014, 2015a; Kondo and Yamashita 2011; Saeki 1960; Suzuki 2000; Yamashita 2002). Moreover, Yamashita and Chang (2001) revealed by using a sentence production experiment that heaviness affects the choice between the scrambled word order and the canonical word order. More specifically, native Japanese speakers were more likely to shift the long constituent than the short one. Yamashita (2002) corroborate this analysis by citing examples such as (4). In (4), the subordinate clause is shifted toward the sentence-initial position because it is much heavier than the subject *watashi* 'I'. Note that the subordinate clause includes 38 morae whereas the subject contains only 4 morae.

These studies are in line with the view that word order changes in Japanese are influenced by ‘long-before-short’ preference.

(4)	demo,	<i>sonotsudo</i>	<i>juken-toiu</i>	<i>hādorū-o</i>	<i>norikoe-te</i>
	but	each.time	entrance.exam-called	hurdle-ACC	overcome-and
	<i>iku hō-ga</i>	<i>minoriaru</i>	<i>jinsēi-ni</i>	<i>naru-to</i>	
	go-direction-NOM	fulfilling	life-DAT	become-COMP	
	watashi-wa	t	omou-no.		
	I-TOP	trace	think-FP		

‘I think life becomes more fulfilling if one overcomes a hurdle of an entrance exam each time [one enters school].’

(Yamashita 2002: 624)

Hawkins (1994) provides a unified explanation for these apparently contradictory preferences (short-before-long vs. long-before-short preference). According to his theory, cross-linguistic linearization patterns can be accounted for in terms of a preference for the most efficient word order. To put it another way, both ‘short-before-long’ and ‘long-before-short’ preferences are the by-product of reducing processing cost. He even

maintains that heaviness has more predictive power as a determinant of word orders than any other factors such as information structure¹. If there are two or more possible word orders, other things being equal, there is a strong tendency to choose the order with the least complexity in order to facilitate the processing. Regarding the relationship between complexity and processing cost, it is a well-established finding that a complex structure incurs higher processing costs than a simple structure does (Frazier and Fodor 1978; Frazier 1987; Gibson 1998; Grodner and Gibson 2005; Imamura, Sato, and Koizumi 2014, 2016; Koizumi and Imamura 2016; Pritchett and Whitman 1995). Among others, Grodner and Gibson (2005) maintain that a limited amount of resources in working memory is the main cause of difficulty relevant to complex structures. In order to illustrate their analysis, let us take a closer look at (5). Numerous studies have revealed that an object relative clause (OR) like (5b) requires higher processing cost than a subject relative clause (SR) like (5a) does (e.g., Ford 1983; King and Just 1991; Staub 2010). Grodner and Gibson (2005) claim that this difference derives from the memory cost of *who*. In (5a), the parser can integrate *who* with *sent* without consuming much cognitive processing resources

¹ To be precise, Hawkins (1994: 77) states that ‘the human parser prefers linear orders that maximize the IC-to-non IC ratios of constituent recognition domains’. This principle means that preferable word orders allow the quickest recognition of immediate constituents of syntactic groups. In contrast to the drastic point of view proposed in Hawkins (1994), in a more recent work, he takes not only ‘formal’ properties but also ‘semantic’ properties into account (Hawkins 2004).

because *who* is next to *sent*. Hence, the working memory cost is low. On the other hand, in (5b), the parser must keep *the photographer* in its working memory until it encounters *sent* in order to link *who* with *sent*. This process requires a great amount of resources in working memory. Therefore, a correlation exists between the syntactic complexity and processing costs.

- (5) a. SR: The reporter who sent the photographer to the editor hoped for a story.
b. OR: The reporter who the photographer sent to the editor hoped for a story.

(Grodner and Gibson 2005:266)

In the same way, in Japanese, the parser needs to store the subject in its working memory for a long time until it comes across the verb if the direct object is very long. In (6a), for example, the parser must keep the subject, *kare* ‘he’, until it finds the predicate, *wasureteiru* ‘has forgotten’. Since *kare* is far away from its theta role assigner *wasureteiru*, this long-distance integration requires more resources in working memory (Gibson 1998; Pickering and Barry 1991). This operation engenders greater processing costs. In (6b), on the other hand, the parser can assign a thematic role to *kare* easily because *kare* is next to *wasureteiru*. It must be noticed that (6a) is a canonical sentence (SOV) whereas (6b) is a

scrambled sentence (OSV). However, the processing cost of *kare* is much lower in (6b) than in (6a) due to the difference in the distance between *kare* and *wasureteiru*. By scrambling the heavy object forward, the processing cost of the subject is reduced in (6b). In some cases, scrambling is considered to minimize the processing costs of heavy constituents, although it includes an extra syntactic operation compared to its canonical counterpart.

- (6) a. *kare-wa* [*watashi-ga oboeteiru hanashi-o*] *sukkari*
 he-TOP I-NOM remember story-ACC completely
wasureteiru-kamoshirenai.
 has.forgotten-maybe
 ‘He may have forgotten completely the story that I remember.’
- b. [*watashi-ga oboeteiru hanashi-o*] *kare-wa t* *sukkari*
 I-NOM remember story-ACC he-TOP trace completely
wasureteiru-kamoshirenai.
 has.forgotten-maybe
 ‘He may have forgotten completely the story that I remember.’

(adapted from Yamashita 2002: 604)

The question, however, arises about the relationship between syntactic complexity and heaviness; does syntactic complexity affect heaviness? It has been observed that there is an interrelation between syntactic complexity and length because complex constituents tend to be long, and vice versa. Therefore, there is still some dispute as to whether or not syntactic complexity is an independent factor (Wasow 2002; Wasow and Arnold 2003). Although shifted constituents tend to be long in Japanese, can syntactic complexity itself be a cause of word order changes? If syntactic complexity is a mere epiphenomenon of length and has no effects on heaviness, there will be no difference between scrambling and topicalization in terms of heaviness. This is because there is no need to distinguish scrambling from topicalization in terms of processing cost even though topicalization is syntactically more complex than scrambling. Recall that topicalization includes not only the TP-domain but also the CP-domain whereas scrambling contains only TP-domain. When the direct object is much longer than the subject, both scrambling or topicalization can be selected in order to reduce the processing cost by following ‘long-before-short’ preference. This preference will not give priority to one of the two options. In contrast, if syntactic complexity contributes to the concept of heaviness as an independent factor, processing cost of scrambling will be totally different from that of topicalization. This is

because topicalization is syntactically more complex than scrambling. Thus, short objects may be moved toward the sentence-initial position in topicalization. If an element is short but syntactically heavy, it may be preferably shifted. Next, I am going to give a detailed explanation about why syntactically influenced heaviness may have different predictions about scrambling and topicalization.

In syntax, there is a matter of controversy about the structure of $O_{ACC}S_{NOM}V$. Saito (2003) presumes that both the subject and the object are generated in VP-internal position and move to VP-external position, as in (7a). On the other hand, Miyagawa (2001) supposes that the direct object is moved to the TP-Spec position whereas the subject stays in VP-internal position, as shown in (7b).

(7) $O_{ACC}S_{NOM}V$

a. $[TP O_j S_i [VP t_i t_j V]]$

b. $[TP O_i [VP t_i' S t_i V]]$

In order to assess the validity of both hypotheses, Koizumi and Tamaoka (2010) performed a sentence comprehension experiment. Their experiment depended on the following two assumptions shown in (8). As for the first assumption (8a), there is no

dispute about its validity because it is standard in psycholinguistics (Imamura, Sato, and Koizumi 2014, 2016; Koizumi and Imamura 2016; Mazuka, Itoh, and Kondo 2002; Miyamoto and Takahashi 2002; Tamaoka et al. 2005).

(8) a. Assumption 1

(Other things being equal) sentences involving an instance of scrambling are more difficult to process than their counterparts without an instance of scrambling.

b. Assumption 2

The canonical positions for so-called VP adverbs such as manner and resultative adverbs are within the VP. Therefore, when VP adverbs occur outside the VP, they have undergone scrambling.

(Koizumi and Tamaoka 2010: 664)

In the experiment, it has been generally assumed that human parser processes canonical word orders faster than derived word orders. Taking the second assumption (8b) into consideration, the reaction times increase when a VP-adverb is placed outside of its VP-internal position due to scrambling.

The two competing hypotheses shown in (7a) and (7b) make different predictions

for the processing of OSV sentences with VP adverbs such as (9a), (9b) and (9c). If (7a) is on the right track, the reaction times for A(dverb)OSV and OASV will be longer than those of OSAV because VP-adverbs in AOSV and OASV are considered to be outside of their VP-internal positions. On the other hand, if (7b) is right, the reaction times for AOSV will be longer than for OASV and OSAV because only in AOSV is the VP-adverb located outside of VP. The results of Koizumi and Tamaoka's experiment support (7b) in that AOSV was processed slower than OASV and OSAV². Therefore, I suppose that the structure of O_{ACC}S_{NOM}V is (7b). The key point here is that the accusative object in O_{ACC}S_{NOM}V is placed in TP-Spec position.

(9) a. AOSV

yukkuri	sinbun-o	Taroo-ga	yon-da.
slowly	newspaper-ACC	Taro-NOM	read-PAST

‘Taro read a newspaper slowly.’

b. OASV

shinbun-o	yukkuri	Taroo-ga	yon-da.
newspaper-ACC	slowly	Taro-NOM	read-PAST

² However, there was no significant difference in the processing times between OASV and OSAV (Koizumi and Tamaoka 2010: 673).

c. *OSAV*

shinbun-o	Taroo-ga	yukkuri	yon-da.
newspaper-ACC	Taro-NOM	slowly	read-PAST

(Koizumi and Tamaoka 2010: 669)

With regard to the structure of topicalization, Kuroda (1987) asserts that $O_{TOP}S_{NOM}V$ is derived by moving the direct object toward the sentence-initial position. The related question is exactly where the *WA*-marked object is located in $O_{TOP}S_{NOM}V$. In order to address this question, let us focus on the place of sentence-initial *WA* in the canonical word order sentences. It is a standard analysis that the topic marker *WA* occupies a position higher than TP-spec in the basic word order (Kuno 1973a; Shibatani 1990; Tateishi 1994). Specifically, Shibatani (1990) presents his syntactic analysis, being founded on the hypothesis that *WA*-marked nouns are external to the S (=TP) and are dominated by S'. In (10), the *WA*-marked NP, *zō* 'elephant', precedes the *GA*-marked NP, *hana* 'nose'. Since *hana* is considered to be placed in TP-Spec, *zō* is located at a position higher than TP-Spec.

(10) [s' zō-wa [s hana-ga nagai.]

elephant-TOP nose-NOM long

‘An elephant’s nose is long.’

(Shibatani 1990: 274)

Conforming to the presupposition that *WA*-marked referents are higher than TP-Spec, I presuppose that sentence-initial *WA* belongs to CP-domain³. This presupposition leads to the view that $S_{TOP}O_{ACC}V$ is syntactically more complex than $S_{NOM}O_{ACC}V$. This is because the *GA*-marked subject in $S_{NOM}O_{ACC}V$ is placed in TP-Spec position (Miyagawa 1989; Kishimoto 2001) whereas the *WA*-marked subject in $S_{TOP}O_{ACC}V$ is placed in CP-domain. In the same way, $O_{TOP}S_{NOM}V$ is considered to be more complex than that of $O_{ACC}S_{NOM}V$. The *WA*-marked object in $O_{TOP}S_{NOM}V$ is placed at CP domain whereas the *O*-marked object in $O_{ACC}S_{NOM}V$ is situated at TP-Spec position. Given this presupposition, the *WA*-marked object in $O_{TOP}S_{NOM}V$ may not be as long as the *O*-marked object in $O_{ACC}S_{NOM}V$. This is because *WA*-marked referents may be heavy enough to cause a movement due to its syntactic complexity even if they are not long. On the other hand, it is conceivable that *O*-marked referents in $O_{ACC}S_{NOM}V$ need to be sufficiently long because they are

³ It is unclear exactly which position the *WA*-marked element syntactically occupies. I will leave this issue aside since the crucial point here is merely that *WA* is syntactically more complex than *GA*. So, I tentatively conclude that *WA* resides somewhere in CP-domain.

syntactically lighter than *WA*-marked referents.

The extensive discussion so far has assumed that it is the relative weight of relevant elements that correlate with word order changes cross-linguistically, as shown in Arnold et al. (2000), Imamura (2014, 2015a), and Hawkins (1994, 2000). However, it is also possible that absolute weight of a constituent determines the choice of word orders. If it is on the right track, OSV will be selected when the direct object is absolutely heavy and it does not matter whether the subject is heavy or light. Even if the object is lighter than the subject but heavier than usual, it may be shifted.

To summarize, it is well-known across many languages that heaviness influences the choice of word orders. Yet, it is not clear whether syntactic complexity exerts its effect directly on heaviness or not. If there is an influence of syntactic complexity on heaviness, it is conceivable that syntactically heavy but short referents are shifted. This hypothesis predicts that *WA*-marked referents are heavier than *GA*- or *O*-marked ones even if there is no difference in their linear lengths. More specifically, topicalization may be selected even when the *WA*-marked object is not long. The next question is whether word order changes are related to the concept of relative heaviness or that of absolute heaviness. The present chapter will resolve these issues by assessing the lengths of nouns in SOV and OSV in terms of morae.

5.2.2. Animacy

Many studies have convincingly shown that word orders are influenced by animacy (Bock, Loebell, and Morey 1992; Branigan, Pickering, and Tanaka 2008; Kahraman 2013; Kempen and Harbusch 2004; McDonald, Bock, and Kelly 1993; Rosenbach 2005; Tanaka et al. 2011; Thompson 1990). More specifically, there seems to be a general preference for animate referents to precede inanimate referents. In English, for example, Rosenbach (2005) empirically found that animacy directly affects the choice of the *s*-genitive versus *of*-genitive⁴. As indicated in (11), ‘*s*-genitive (*the king’s palace*) and the *of*-genitive (*the palace of the king*) provide two alternative ways of arranging possessor and possessum in linear order, thus giving word-order variation’ (Rosenbach 2005: 614). However, the choice between the *s*-genitive and *of*-genitive is not random at all in that the animate element tends to come before the inanimate one. To put it more concretely, animate possessors agree well with *s*-genitive whereas inanimate possessors preferably

⁴ Unlike English, Japanese has only one adnominal possessive. Hence, both animate and inanimate possessors are realized at the early position, as shown in (i) and (ii). This signifies that animacy does not work here.

- | | | |
|------|-------------------------|------|
| (i) | John-no | hon |
| | John-GEN | book |
| | ‘John’s book’ | |
| (ii) | ie-no | yane |
| | house-GEN | roof |
| | ‘the roof of the house’ | |

(Rosenbach 2005: 635)

select *of*-genitive. For example, *Ken's book* is preferable to *the book of Ken* because the possessor, *Ken*, is animate.

(11) a. s-genitive

POSSESSOR	POSS's	POSSESSUM(HEAD)
the king	's	palace

b. *of*-genitive

POSSESSUM(HEAD)	of	POSSESSOR
the palace	of	the king

(Rosenbach 2005: 614)

In Japanese, Tanaka et al. (2011) investigated the effects of animacy on the choice between SOV and OSV, by using a sentence recall task. Participants were asked to remember the sentence presented in audiotape in eight blocks, each containing eight sentences. Just after each block, they were prompted for oral recalling using the preambles such as *minatode* 'in the harbour' in (12). To put it simply, participants were required to recall orally the sentences they tried to remember as accurately as possible. Tanaka et al.'s experiment demonstrated that participants tended to recall OSV as SOV more often when

the effect was to move animate noun to the first position than when it was to place the inanimate noun in the first position. Taking (12) as an example, participants were more likely to recall (12d) as SOV than (12c) as SOV. It is important to note that participants tended to avoid changing SOV into OSV, even if this operation is preferable in terms of animacy. In other words, animacy encouraged the participants to use SOV instead of OSV, but not vice versa. Therefore, participant avoided changing (12b) as OSV. Anyway, animacy seems to influence word orders directly in Japanese.

(12) a. Animate-first, SOV

minatode,	ryōshi-ga	bōto-o	hakon-da.
harbour-LOC	fisherman-NOM	boat-ACC	carry-PAST

‘In the harbour, the fisherman carried the boat.’

b. Inanimate-first, SOV

minatode,	bōto-ga	ryōshi-o	hakon-da.
harbour-LOC	boat-NOM	fisherman-ACC	carry-PAST

‘In the harbour, the boat carried the fisherman.’

c. Animate-first, OSV

minatode,	ryōshi-o	bōto-ga	hakon-da.
-----------	----------	---------	-----------

harbour-LOC fisherman-ACC boat-NOM carry-PAST

‘In the harbour, the fisherman, the boat carried.’

d. Inanimate-first, OSV

minatode, bōto-o ryōshi-ga hakon-da.

harbour-LOC boat-ACC fisherman-NOM carry-PAST

‘In the harbour, the boat, the fisherman carried.’

(Tanaka et al. 2011: 322)

On the other hand, some studies report that the effects of animacy work on word orders indirectly. In Turkish, Kahraman (2013) revealed that animacy influences the word order preferences indirectly, on the basis of the sentence production experiments. When the dative noun has the meaning of locative, [NOM-ACC-DAT] takes priority over [NOM-DAT-ACC]. On the other hand, when the dative noun has the meaning of possessor, [NOM-DAT-ACC] is preferable to [NOM-ACC-DAT]. For example, it is natural to interpret the dative noun as locative in (13a) and as possessive in (13b). The important thing here is that when the dative noun is animate, it has a possessor interpretation, and when the dative nouns is inanimate, it has a locative interpretation. Therefore, animacy correlates with the thematic role of the dative noun in Turkish. Moreover, an interrelation

exists between the thematic roles and the word order preferences. These correspondences lead to the relationship such that animacy is linked to the word order preferences in the ditransitive construction. In other words, animacy is considered to influence the word order preferences indirectly only via the thematic role assignment. This view predicts that the animacy would cease to be relevant to word orders if thematic roles were dissociated from word order preferences, because there would be no direct link between animacy and word order preferences.

- (13) a. Ali Veli-yi ev-e götür-dü.
 Ali-NOM Veli-ACC house-DAT bring-PAST
 ‘Ali took Veli home.’
- b. Ali Veli-ye ev-I göster-di.
 Ali-NOM Veli-DAT house-ACC show-PAST
 ‘Ali showed Veli the house.’

(Kahraman 2013: 175)

Based on a corpus analysis, Seoane (2009) found that animacy cannot explain the usage of *by*-passives in English, whose example and corresponding active sentence are

shown in (14)⁵.

(14) a. My boss has hired John as her new assistant.

b. John has been hired by my boss as her new assistant.

(Seoane 2009: 365)

In other words, animacy could not give an account of the word order preference between the subject and the by-phrase. In fact, only 18.6 % of by-passives followed the animately preferable combination between the subject and the by-phrase; by-passives with the human subject and the inanimate by-phrase did not occur frequently. Promoting a human subject is not so common in by-passives. On the contrary, 32.4% of the examples included the inanimate subject and the animate by-phrase, which is an undesirable choice in terms of animacy because the inanimate referent precedes the animate one. They are considered

⁵ Seoane (2009) called by-passives long passives because they are longer than passives without by-phrases, as shown in (i). Thus, she named (i) as short passive and (ii) as long passive. However, in the present article, I make it a rule to call (ii) as by-passive because this expression is clearer than long passive in the sense that 'long' is an ambiguous and abstract concept whereas 'by' is concrete and has a linguistic reality. Moreover, it is strange to talk about the lengths of long passives because they are called 'long'. Anyway, it is said that '*What? in a names that which we call a Rose, By any other word would smell as sweet*' in *The Tragedie of Romeo and Juliet* by Shakespeare. It does not matter whether (ii) is termed long passive or by-passive.

(i) a. The fish was eaten yesterday.
b. The fish was eaten by a cat yesterday.

to sacrifice animacy for other purposes. Instead of animacy, by-passives are strongly influenced by discourse status and relative lengths of subject and by-phrase; by-passives are ordered so that the short subject precedes the long by-phrase, or the given or more definite subject goes before the new or less definite by-phrase. Other examples are unrelated to animacy in that there was no difference between the subject and the by-phrase in their animacy (49%). Furthermore, majority of by-passives contained inanimate subjects (65%). All of these results support the view that the relative animacy of the subject and the by-phrase is not a conditioning factor in by-passives. There was no direct correlation between animacy and word order in by-passives. However, numerous studies have reported that the preference for active voice over passive voice can be reversed or weakened when the subject is animate (Bock et al. 1992; Dahl and Fraurud 1996; Ferreira 1994; Foley 1994; McDonald et al. 1993). This signifies that animacy correlates with grammatical functions, as proposed by Dahl (2008). In order to explain the two contradicting results, Seoane (2009:377) makes the following postulations: ‘The syntactic function of subject tends, in typical cases, to have the semantic role of agent, since language is iconic and consistent with the perceived directionality of events, which tend to start with an agent doing something. The semantic role of agent crucially involves a human referent, since only human referents can show intentionality, control,

responsibility, consciousness. These two correspondences, subject with agent, and agent with human referents, form a transitive implicational relationship such that the syntactic function of subject is intimately linked to a high degree of animacy (human referent)'. This stipulation signifies that there is a spurious correlation between animacy and subjecthood due to the correlation between agentivity and subjecthood. According to Bock (1987) and Bock and Warren (1985), 1) the subject is assigned to the lexical item that is accessed first, 2) conceptually accessible referents are approached more quickly than conceptually inaccessible ones, and 3) animate referents are conceptually accessible in general. Taken together, animate entities tend to be subjects due to their accessibility. This hypothesis implies that there may be an indirect link between animacy and word order because subjects tend to be located at the first position.

In a nutshell, there are three possibilities about the relationship between animacy and word order. The first possibility is that animacy influences word order decisions directly. Under this hypothesis, the animate element is considered to come before the inanimate one frequently. The second possibility is that animacy affects word orders indirectly through the grammatical function assignment or the theta role assignment. The third possibility is that animacy does not have an impact on word orders. Based on the corpus analysis, the present chapter evaluates the validity of each possibility.

5.3. Corpus Analysis of SOV and OSV in terms of Heaviness and Animacy

5.3.1. Basic Purposes

This aim of this analysis is to assesses the effects of heaviness and animacy on word orders in Japanese on the basis of corpus data. This analysis is designed to answer three main questions. The first question is whether word order changes correlate with the ‘absolute heaviness’ of the shifted referent or the ‘relative heaviness’ between the shifted referent and the non-shifted referent. The second question is whether syntactic complexity contributes to heaviness. The third question is whether the distribution of word orders is influenced by animacy. In order to answer these questions, a series of corpus analyses are performed.

5.3.2. Method

5.3.2.1. Corpus Data

BCCWJ is utilized in order to assemble relevant examples (see 3.1.to details).

5.3.2.2. Materials

The same conditions are used as in chapter 4. However, $S_{NOM}O_{TOP}V$ is excluded from the analysis because no actual examples were observed (see section 4.3.3). Thus, there are five conditions exemplified in (15).

- (15) a. $S_{NOM}O_{ACC}V$
b. $S_{TOP}O_{ACC}V$
c. $O_{ACC}S_{NOM}V$
d. $O_{TOP}S_{NOM}V$
e. $O_{ACC}S_{TOP}V$

5.3.2.3. Procedures

This analysis reused the same examples selected for the analysis conducted in chapter 4. With regard to the taxonomy of heaviness and animacy, the present analysis followed the criteria shown in section 3.4 and 3.5. It was conducted in the following three steps: First, the morae of both the subject and the object in each condition were measured. Second, both the subject and the object were categorized into animate or inanimate. Third, a series of t-tests were conducted for heaviness and chi-square tests were performed for animacy.

5.3.3. Results

Table 5.1 summarizes the results of the analysis in terms of morae, showing the average value and the standard deviation for each condition.

Table 5.1 Morae for each sentence type

Sentence	Grammatical	Morae	
Types	Functions	M	SD
$S_{NOM}O_{ACC}V$	S	10.68	10.92
	O	10.33	10.82
$S_{TOP}O_{ACC}V$	S	8.38	5.88
	O	11.35	8.97
$O_{TOP}S_{NOM}V$	S	7.67	4.29
	O	10.03	5.67
$O_{ACC}S_{NOM}V$	S	8.73	7.59
	O	18.68	14.23
$O_{ACC}S_{TOP}V$	S	5.50	2.50
	O	22.25	15.25

A series of t-tests were performed for the average values of morae. Within each construction, there was a significant difference between the subject and the object in $S_{TOP}O_{ACC}V$ ($t(198)=2.77$, $p<.01$), $O_{ACC}S_{NOM}V$ ($t(198)=6.17$, $p<.01$), $O_{TOP}S_{NOM}V$ ($t(198)=3.32$, $p<.01$), and $O_{ACC}S_{TOP}V$ ($t(198)=10.84$, $p<.01$), but not in $S_{NOM}O_{ACC}V$ ($t(198)=0.23$, $p=.82$). In other words, the object was significantly longer than the subject except for $S_{NOM}O_{ACC}V$.

With regard to the lengths of the subjects, $O_{ACC}S_{TOP}V$ was significantly shorter than $O_{TOP}S_{NOM}V$ ($t(198)=4.37$, $p<.01$), but there was no significant difference among $O_{TOP}S_{NOM}V$, $S_{TOP}O_{ACC}V$, and $O_{ACC}S_{NOM}V$. Moreover, $S_{NOM}O_{ACC}V$ was significantly longer than $O_{TOP}S_{NOM}V$ ($t(198)=2.56$, $p<.05$). However, there was no significant difference among $S_{TOP}O_{ACC}V$, $O_{ACC}S_{NOM}V$, and $S_{NOM}O_{ACC}V$.

Speaking of the lengths of the objects, $O_{ACC}S_{NOM}V$ was significantly longer than $S_{TOP}O_{ACC}V$ ($t(198)=4.36$, $p<.01$), but there was no significant difference among $S_{TOP}O_{ACC}V$, $S_{NOM}O_{ACC}V$, and $O_{TOP}S_{NOM}V$. Furthermore, the difference between $O_{ACC}S_{NOM}V$ and $O_{ACC}S_{TOP}V$ was only marginal ($t(198)=1.71$, $p<.10$).

With regard to the lengths of the nouns in the first position, there were no significant differences among $S_{NOM}O_{ACC}V$, $S_{TOP}O_{ACC}V$, and $O_{TOP}S_{NOM}V$. In addition, there was a marginal difference between $O_{ACC}S_{NOM}V$ and $O_{ACC}S_{TOP}V$ ($t(198)=1.71$, $p<.10$). However,

$O_{ACC}S_{NOM}V$ was significantly longer than $S_{NOM}O_{ACC}V$ ($t(198)=4.46, p<.01$). Furthermore, $O_{TOP}S_{NOM}V$ was significantly longer than $S_{TOP}O_{ACC}V$ ($t(198)=2.02, p<.05$).

As for the lengths of the nouns in the second position, there were no significant differences among $O_{TOP}S_{NOM}V$, $S_{NOM}O_{ACC}V$, and $S_{TOP}O_{ACC}V$. Moreover, the difference between $O_{TOP}S_{NOM}V$ and $O_{ACC}S_{NOM}V$ was not significant. On the other hand, $S_{TOP}O_{ACC}V$ was significantly longer than $O_{ACC}S_{NOM}V$ ($t(198)=2.23, p<.05$). Moreover, $S_{NOM}O_{ACC}V$ was significantly longer than $O_{TOP}S_{NOM}V$ ($t(198)=2.28, p<.05$), which in turn is significantly longer than $O_{ACC}S_{TOP}V$ ($t(198)=4.37, p<.01$).

Putting the direct object and the subject together, there were no significant differences among $S_{NOM}O_{ACC}V$, $S_{TOP}O_{ACC}V$, and $O_{TOP}S_{NOM}V$. In addition, there was no difference between $O_{ACC}S_{NOM}V$ and $O_{ACC}S_{TOP}V$ ($t(198)=0.14, p=.89$). However, $S_{NOM}O_{ACC}V$ was significantly shorter than $O_{ACC}S_{NOM}V$ ($t(198)=2.60, p<.01$). Taken together, $O_{ACC}S_{NOM}V$ and $O_{ACC}S_{TOP}V$ were significantly longer than $S_{NOM}O_{ACC}V$, $S_{TOP}O_{ACC}V$, and $O_{TOP}S_{NOM}V$.

Table 5.2 Tokens distribution of the subject and the object in terms of animacy

Sentence	Grammatical	Number	
		Animate	Inanimate
Types	Functions		

$S_{\text{NOM}}O_{\text{ACC}}V$	S	83	17
	O	9	91
$S_{\text{TOP}}O_{\text{ACC}}V$	S	90	10
	O	7	93
$O_{\text{ACC}}S_{\text{NOM}}V$	S	84	16
	O	10	90
$O_{\text{TOP}}S_{\text{NOM}}V$	S	91	9
	O	10	90
$O_{\text{ACC}}S_{\text{TOP}}V$	S	92	8
	O	7	93

Table 5.2 is the summary of the distribution of the nouns in terms of animacy. A series of chi-square tests were carried out to see if there were significant differences among them. Overall, several tendencies were observed across sentence types. First, the frequency of the animate noun was significantly higher than that of the inanimate noun in the subject of $S_{\text{NOM}}O_{\text{ACC}}V$ ($\chi^2(1) = 43.56, p < .01$), $S_{\text{TOP}}O_{\text{ACC}}V$ ($\chi^2(1) = 64.04, p < .01$), $O_{\text{TOP}}S_{\text{NOM}}V$ ($\chi^2(1) = 67.40, p < .01$), $O_{\text{ACC}}S_{\text{NOM}}V$ ($\chi^2(1) = 46.24, p < .01$), and $O_{\text{ACC}}S_{\text{TOP}}V$ ($\chi^2(1) = 70.56, p < .01$). In other words, subjects were more likely to be animate nouns than

inanimate nouns in every condition. Second, the frequency of the inanimate noun was significantly higher than that of the animate noun in the object of $S_{NOM}O_{ACC}V$ ($\chi^2(1) = 67.40, p < .01$), $S_{TOP}O_{ACC}V$ ($\chi^2(1) = 73.96, p < .01$), $O_{TOP}S_{NOM}V$ ($\chi^2(1) = 64.04, p < .01$), $O_{ACC}S_{NOM}V$ ($\chi^2(1) = 64.04, p < .01$), and $O_{ACC}S_{TOP}V$ ($\chi^2(1) = 73.96, p < .01$). This result signifies that objects were realized as inanimate nouns more frequently than as animate nouns. Third, the frequency of the animate subjects was significantly higher than that of the animate objects in $S_{NOM}O_{ACC}V$ ($\chi^2(1) = 59.52, p < .01$), $S_{TOP}O_{ACC}V$ ($\chi^2(1) = 71.02, p < .01$), $O_{TOP}S_{NOM}V$ ($\chi^2(1) = 64.93, p < .01$), $O_{ACC}S_{NOM}V$ ($\chi^2(1) = 58.25, p < .01$), and $O_{ACC}S_{TOP}V$ ($\chi^2(1) = 72.98, p < .01$). To put it other way, the inanimate objects occurred more frequently than the inanimate subjects in every condition. Fourth, a chi-square test did not reach statistical significance in the subject across sentence types ($\chi^2(4) = 6.63, p = .16$). In other words, subjects showed the same tendency, irrespective of the sentence types. Fifth, a chi-square test was not significant in the object across sentence types ($\chi^2(4) = 1.17, p = .88$). This means that the object shows the same tendency across sentence types overall.

5.4. Discussion

5.4.1. Word Order and Heaviness

The goal of the analysis is to probe the relationship between heaviness and word orders in Japanese. Let us start our discussion with the question of whether topicalization ($O_{TOP}S_{NOM}V$) and scrambling ($O_{ACC}S_{NOM/TOP}V$) are affected by the ‘absolute heaviness’ of the direct object or the ‘relative heaviness’ between the subject and the object. Overall, we observe a general tendency that shifted objects are longer than subjects within the OSV word orders. However, shifted objects in topicalization tend to be as short as objects in the SOV word orders ($S_{NOM}O_{ACC}V$ and $S_{TOP}O_{ACC}V$). This result signifies that ‘absolute heaviness’ of the direct object does not matter for the usage of topicalization. In contrast, ‘relative heaviness’ can provide a unified account of OSV word orders because the direct object tends to be shorter than the subject in both scrambling and topicalization. Therefore, I conclude that word order changes correlate with ‘relative heaviness’ in Japanese: shifted referents tend to be heavier than non-shifted referents in OSV.

Let us focus on the total lengths of the subject plus the object in each construction. First, it was revealed that $O_{ACC}S_{NOM}$ and $O_{ACC}S_{TOP}$ were significantly longer than $S_{NOM}O_{ACC}V$, $S_{TOP}O_{ACC}V$, and $O_{TOP}S_{NOM}V$. In other words, scrambled sentences were much longer than other conditions. This signifies that processing scrambled sentences requires a greater amount of resources in working memory than other constructions. This result is consistent with the previous studies in the sense that scrambling incurs high

processing costs (Chujo, 1983; Erdocia et al. 2009; Frazier and Flores d' Arcais 1989; Imamura, Sato, and Koizumi 2014, 2016; Koizumi and Imamura 2016; Koizumi and Tamaoka, 2010; Rösler et al. 1998; Sekerina 2003; Tamaoka, Kanduboda, and Sakai 2011; Tamaoka et al. 2005; Weyerts et al. 2002). Second, the object of $O_{ACC}S_{TOP}$ was longer than that of $O_{ACC}S_{NOM}$ whereas the subject of $O_{ACC}S_{TOP}$ was shorter than that of $O_{ACC}S_{NOM}$. This result indicates that the shortness of one argument (the subject or the object) offsets the extra lengths of the other argument in scrambled word orders, resulting in no difference in the total length between $O_{ACC}S_{NOM}$ and $O_{ACC}S_{TOP}$. This fact can be explained by supposing that the total lengths of scrambling are limited by the size of working memory.

The next question is whether syntactic complexity contributes to heaviness or not. Recall that the structure of topicalization is more complex than that of scrambling. However, if syntactic complexity has no influence on heaviness, other things being equal, there will be no difference in their weight between the *WA*-marked object in topicalization and the *O*-marked object in scrambling. On this account, the direct objects will be as long in topicalization as in scrambling because the linear order is the only factor that affects 'long-before-short' preference. In contrast, if syntactic complexity has an impact on heaviness, *WA*-marked nouns in topicalization are considered to be heavier than *O*-

marked nouns in scrambling even if there is no difference in the lengths. Under this account, *WA*-marked elements may meet the ‘long-before-short’ requirement even if they are short because they are syntactically heavy. Therefore, this account predicts that *WA*-marked referents in topicalization are shorter than *O*-marked nouns in scrambling. With regard to the validity of these accounts, the results of the corpus analysis support the view that syntactic complexity is a part of heaviness. This is because direct objects were much shorter in topicalization than in scrambling. Therefore, I conclude that syntactic complexity has direct effects on heaviness.

Yet, it is conceivable that *WA*-marked nouns in topicalization are short because shorter expressions correlate with topical referents. In fact, Yamashita (2002) points out that anaphoric expressions such as *sore* ‘it’ are related to shortness. In the same vein, Seoane (2009) states that given information is likely to be short. In addition, Hawkins (2009) claims that pronouns are short in general because it is common to use minimalized forms for frequent words. For example, a long word *situation comedy* can be reduced to *sitcom* due to their high frequency. This rule also holds of Japanese. For instance, *Zeruda-no densetsu* ‘The Legend of Zelda’ is normally abbreviated as *Zeruden*⁶ among gamers. These studies suggest that there is a correlation between shortness and topicality.

⁶ Japanese prefer four morae abbreviations.

Furthermore, Givón (1988: 249) proposed ‘the code-quantity principle: the less predictable/accessible a referent is, the more phonological material will be used to code it’. To put it other way, the more predictable/accessible a referent is, the less phonological material will be used to code it. This principle predicts that pronouns are short due to their predictability/accessibility. Taken together, it is conceivable that *WA*-marked referents are short in the present corpus data because there is a correlation between shortness and topicality. Hence, this explanation anticipates that *WA*-marked nouns are shorter than *GA*- or *O*-marked nouns in general because *WA*-marked nouns are topical whereas *GA*- or *O*-marked nouns are not topical (Hinds 1983; Hinds and Hinds 1979; Imamura, Helgason, and Koizumi 2014; Shimojo 2005). However, this speculation is not completely corroborated by my corpus data. Indeed, although *WA*-marked subjects were shorter than *O*-marked objects within *S_{TOP}O_{ACC}V*, there was no significant difference in the length between the *WA*-marked subjects in *S_{TOP}O_{ACC}V* and the *GA*-marked subjects in *S_{NOM}O_{ACC}V*. This fact contradicts the prediction because *WA*-marked nouns were not shorter than *GA*-marked nouns. Therefore, the present findings cast doubt on the validity of the view that *WA*-marked nouns were short due to the correlation between topicality and shortness.

An alternative possibility is that scrambled objects tend to be long because they are

‘brand-new anchored’ NPs in many cases (Suzuki 2000). Brand-new anchored NPs are newly introduced NPs that are linked to some other discourse entity via an NP included in the previous discourse. Let us have a look at (16) in order to explain this concept at length.

- (16) [Context: *soshite kono gēmu-no torikku-wa Pieeru Burujyuu-no*
and this game-GEN trick-TOP Pierre Brujeau-GEN
yū tōri,] *gēmu-no rūru-o daitasū-no haisha-ga*
say as game-GEN rule-ACC large.majority-GEN defeated-NOM
sasae-teiru toyū koto da.
support-PROG COMP NMR COP
‘And the trick of this game is, as Pierre Brujeau says, that the large majority
of defeated people are supporting the rule of the game.’

(adapted from Suzuki 2000:104)

Here, the head noun *rūru* ‘rule’ of the direct object *gēmu no rūru* ‘rule of the game’ itself does not have an antecedent and thus is brand-new information. However, it is modified by *gēmu* ‘game’, which has been explicitly referred to as *kono gēmu* ‘this game’ in the

context. Thus, the head noun *rūru* ‘rule’ of the direct object *gēmu no rūru* ‘rule of the game’ is anchored because it is linked with the context by means of *gēmu* ‘game’. In brand-new anchored NPs, the head of the NP is brand-new information but the NP as a whole contains a discourse-old referent, making the brand-new anchored NP relevant to the preceding discourse. Considering the fact that scrambled objects in OSV are usually anchored, they tend to be longer than *WA*-marked objects in OSV because of the existence of anchoring expressions. Unlike scrambling, the *WA*-marked object in topicalization does not require an anchoring expression because the head itself is likely to be given information. Note that the main function of anchoring is to link the brand-new element with the preceding discourse and thus an anchoring expression does not work when its head is not brand-new information.

To summarize, the findings above indicate that word order changes correlate with the ‘relative heaviness’ between the direct object and the subject. In particular, the direct object was significantly longer than the subject in OSV. This result supports the view that word order changes are associated with additional processing cost. Moreover, the lengths of scrambling were constant between $O_{ACC}S_{NOM}$ and $O_{ACC}S_{TOP}$. This implies that the total length of scrambling may be restricted by the limitation of a capacity for working memory. With regard to topicalization, not only length but also syntactic complexity seems to have

an impact on heaviness. However, it is possible that other factors are related to this phenomenon. Further studies are needed in order to disentangle this issue.

5.4.2. Word Order and Animacy

The main finding from the corpus analysis is that animacy did not influence the choice of word orders in Japanese. Rather, it has been revealed that animacy correlates with just grammatical functions: subjects are almost always animate nouns whereas objects are inanimate nouns in most cases. These facts seemingly contradict Tanaka et al. (2011)'s claim that animacy has an impact on word orders directly. What is the source of this difference? In order to solve this problem, let us review the results of their experiment first. Based on a sentence recall task, they found that animacy affects word orders being independent of grammatical functions. More specifically, participants recalled OSV sentences as SOV sentences more often when this resulted in the animate nouns appearing first than when this resulted in the inanimate nouns appearing first. In other words, OSV was transformed into SOV frequently so that the animate entity precedes the inanimate one, but not vice versa. SOV was constantly recalled as SOV regardless of animacy. These facts can be accounted for by assuming the competition between the demerit of scrambling and the merit of animate-inanimate order. First, scrambling should be avoided

because it is a structurally complex option, as in (17a). Second, it is preferable to place animate entities before inanimate ones, as in (17b) (Bock et al. 1992; McDonald et al. 1993; Thompson 1990).

- (17) a. Avoid scrambling if possible due to its processing cost
- b. Place animate entities at the first position

Let us consider the competition between (17a) and (17b) in simple transitive sentences (SOV and OSV). If an animate direct object is scrambled forward, it will violate (17a) but follow (17b). This operation will engender an $O_{\text{ANI(MATE)}}S_{\text{IN(ANIMATE)}}V$ sentence. In contrast, if an animate direct object stays in its in-situ position, it will obey (17a) but violate (17b). This option will give rise to $S_{\text{IN}}O_{\text{ANI}}V$ sentences. According to Tanaka et al, $S_{\text{IN}}O_{\text{ANI}}V$ was preferable to $O_{\text{ANI}}S_{\text{IN}}V$ because $O_{\text{ANI}}S_{\text{IN}}V$ was changed into $S_{\text{IN}}O_{\text{ANI}}V$ frequently but $S_{\text{IN}}O_{\text{ANI}}V$ was constantly recalled as just $S_{\text{IN}}O_{\text{ANI}}V$. Taking into account the fact that the optimal structure is computed as a structure that violates the least highly ranked constraints (Prince and Smolensky 1993), (17a) seems to be ranked higher than (17b). Thus, the penalty for selecting scrambling cannot be erased by the positive effects of animacy. In consequence, $S_{\text{IN}}O_{\text{ANI}}V$ was not permutated into $O_{\text{ANI}}S_{\text{IN}}V$ frequently. This

proposal signifies that the effect of animacy is much weaker than that of scrambling. This weakness is the key to understanding the results of the present corpus analysis. In the experiment performed by Tanaka et al, other factors were controlled in the sense that only simple nouns were presented, as shown in (12) and presented again as (18). It has been proposed that when one factor is less constraining, the other factor becomes stronger if these two factors are found to influence a particular option (Arnold et al. 2000; MacDonald 1996). Applying this proposal to Tanaka's experiment, animacy must have had stronger effects on the choice of word order because other factors were controlled and less constraining. It should be noted that there are no modifiers in (18) and both *ryōshi* 'fisherman' and *bōto* 'boat' are simple nouns. Heaviness was strictly controlled in the sense that all the NPs used for the experiment were light. In the same vein, there was no difference between the subject and the object in terms of discourse status. Both the subject and the object may be regarded as new information in the sense that discourse contexts were not given immediately before the task, or they may be regarded as given information in that the same NPs were presented once at the beginning of a sentence recall task. Anyway, the subject was as old or new as the object in the experiment. Moreover, *ryōshi* is a typical human noun while *bōto* is a representative of a common inanimate noun. Thus, there is a large gap between *ryōshi* and *bōto* in terms of animacy. In the animacy hierarchy

shown in (19), *ryōshi* is situated in the highest position whereas *boat* resides in the lowest position.

(18) a. Animate-first, SOV

minatode,	ryōshi-ga	bōto-o	hakon-da.
harbour-LOC	fisherman-NOM	boat-ACC	carry-PAST

‘In the harbour, the fisherman carried the boat.’

b. Inanimate-first, SOV

minatode,	bōto-ga	ryōshi-o	hakon-da.
harbour-LOC	boat-NOM	fisherman-ACC	carry-PAST

‘In the harbour, the boat carried the fisherman.’

c. Animate-first, OSV

minatode,	ryōshi-o	bōto-ga	hakon-da.
harbour-LOC	fisherman-ACC	boat-NOM	carry-PAST

‘In the harbour, the fisherman, the boat carried.’

d. Inanimate-first, OSV

minatode,	bōto-o	ryōshi-ga	hakon-da.
harbour-LOC	boat-ACC	fisherman-NOM	carry-PAST

‘In the harbour, the boat, the fisherman carried.’

(Tanaka et al. 2011: 322)

(19) Animate Hierarchy

human N > animal N > collective N > temporal N >

locative N > common inanimate N

(Rosenbach 2008: 153)

In contrast, actual examples can be influenced by multiple factors such as information structure and heaviness. In (20a), for example, the subject *Kara* is a name of a man while the direct object refers to an ashtray in the preceding discourse. Thus, SOV is a preferable order in terms of animacy because this order results in $S_{ANI}O_{INV}$, where the animate noun precedes the inanimate noun. However, OSV is selected despite the fact that this order gives rise to $O_{ANI}S_{INV}$, where the inanimate object precedes the animate subject. The reason why OSV is chosen in (20) may be that the direct object is older than the subject. Note that the direct object is realized as an anaphoric expression, *sore* ‘it’. It is possible that OSV is chosen so that given information comes before new information. In the same fashion, OSV is utilized in (20b) because the direct object, *sono hōseki* ‘that

gem’, is older than the subject, *watashi to musuko* ‘I and my son’. It should be noted that *sono hōseki* has its antecedent in the immediately preceding discourse. These facts clearly indicate that the effects of animacy are erased by given-new ordering in (20).

(20) a. sore-o Kara-san-ga motte...

it-ACC Kara-Mr.-NOM have

‘Mr. Kara has it (= an ashtray) ...’

b. sono-hōseki-o watashi-to-musuko-ga teniire-ru-tameni...

that-gem-ACC I-and-son-NOM get-NONPAST-PURP

‘in order for my son and I get that jewel...’

(BCCWJ)

Furthermore, there are cases where no clear-cut animacy difference between arguments was observed. For instance, in (21), both the subject, *Yuasa*, and the direct object, *the Crown Prince*, are equal in animacy. Both of them are animate nouns because they are human nouns. There is no difference between them in terms of animacy. Regardless, OSV is made use of in (21) due to the ‘long-before-short’ preference. This example signifies that animacy does not work effectively in the corpus in some cases.

- (21) yōroppa-hōmon-kara kikoku-shi-ta kōtaishi-o
- Europe-visit-from return.to.one's.country-do-PAST Crown.Prince-ACC
- Yuasa-chōkan-ga demukae-ta.
- Yuasa-the.Grand.Steward-NOM welcome-PAST
- ‘The Grand Steward of the Imperial Household Agency, Yuasa, welcomed the
Crown Prince, who returned to Japan from a visit to Europe.’
- (BCCWJ)

Moreover, in (22), the animacy difference between arguments is not clear unlike the experimental conditions. The direct object, *kokushi* ‘governor’, is clearly an animate noun but the subject, *Yamato chōtei* ‘Yamato Imperial Court’, is very ambiguous in terms of animacy because it is a collective noun. Note that collective nouns fall somewhere between human and inanimate, as shown in (19). In this study, collective nouns are regarded as animate nouns, but the difference between a human noun and a collective noun is predicted to be smaller than that between a human noun and a common inanimate noun. This fact suggests that animacy has weaker effects on actual examples than on created examples used for Tanaka et al. Note that the scrambled object is very heavy

compared with the subject in (22). OSV is considered to be selected due to the ‘long-before-short’ preference, showing that animacy does not influence the choice between SOV and OSV.

- (22) Sanin-no itsutsu-no kuni-no kokushi-o
 Sanin-GEN 5-GEN province-GEN governor-ACC
 Yamato-chōtei-ga shōshūsu-ru.
 Yamato-Imperial.Court-NOM summon-NONPAST

‘The Yamato Imperial Court summons the five governors of Sanin Province⁷.’

(BCCWJ)

Taken together, animacy may be too weak to influence the choice of word orders in actual examples. Rather, animacy shows high correlation with grammatical functions. Recall that subjects were apt to be animate while objects were liable to be inanimate in the corpus; SOV was $S_{ANI}O_{INV}$ and OSV was $O_{IN}S_{ANI}V$ in almost all examples. This result suggests that animacy has direct effects on grammatical function assignments but

⁷ Since Japanese nouns do not mark number, the interpretation of *Itsutsu-no kuni-no kokushi* is obscure. It can mean both *five governors* and *a governor who is in charge of five provinces*. However, the interpretation is determined on the basis of the succeeding contexts.

not on word orders, as proposed by Bock (1987) and Bock and Warren (1985). However, Tanaka et al. (2011) observed that animacy influences the choice of word orders directly in a sentence recall task. Therefore, it is reasonable to conclude that the effect of animacy on word orders is much weaker in the corpus than in the experiment. Yet, both in the experiment and the corpus, animacy is not associated with the usage of OSV in Japanese. As exemplified by Tanaka et al, OSV was not selected for meeting the requirement of animacy even under the experimental condition. In the corpus, animacy has no influence on either SOV or OSV. Instead of animacy, givenness and heaviness are considered to work together in order to determine the choice of word orders in the corpus.

5.4.3. Reconsideration of the Usage of OSV in Japanese

The corpus analyses have revealed that word orders are affected by heaviness but not by animacy. This result indicates that animacy is not an epiphenomenon of heaviness because animacy does not correlate with heaviness. In the same way, givenness has an impact on the choice of word orders unlike animacy. Thus, it is reasonable to assume that givenness is independent of animacy because there is no correlation between givenness and animacy. Moreover, it has been demonstrated that both givenness and heaviness work on the choice of word orders independently (Imamura 2014, 2015a). Taken together, it is reasonable to

suppose that givenness, heaviness, and animacy independently affect grammatical operations. However, animacy is unrelated to the usages of scrambling and topicalization. Even if animacy had a direct impact on word orders as observed in the experiment by Tanaka et al (2011), its effect would be very limited in the corpus. More specifically, if the effects of givenness and heaviness were neutralized, animacy would work on word orders because the effects of one factor will be strengthened if the effects of other factors are weakened (Arnold et al. 2000; MacDonald 1996). Therefore, with regard to the usage of scrambling and topicalization, givenness and heaviness are considered to be the primary factors whereas animacy seems to be the secondary factor. In other words, givenness of the direct object or the relative heaviness between the related elements influence the choice between SOV and OSV word orders directly, whereas animacy is a less crucial factor, although all of them are effective in the experiments (Imamura, Sato, and Koizumi 2014, 2016; Koizumi and Imamura 2016; Tanaka et al. 2011; Yamashita and Chang 2001).

Next, let us consider the influence of information structure, heaviness, and animacy on the choice between SOV and OSV in Japanese in terms of the corpus analyses and experiments. First, let us focus on the effects of information structure on scrambling and topicalization. Based on the corpus analysis, it has been revealed that scrambling predicts

‘topic shift’ from the referent of the scrambled object to that of the subject whereas topicalization anticipates ‘continuing topic’ as the referent of the subject. This signifies that givenness is a crucial factor in determining word orders. In contrast, Imamura, Sato, and Koizumi (2014, 2016) demonstrated by using sentence comprehension experiments that givenness has positive effects on scrambling but not on topicalization. More specifically, unlike scrambling, the processing cost of topicalization was not alleviated by givenness. This fact can be explained by garden path effect. The parser cannot decide the grammatical function of the first NP (NP_{TOP}) in topicalization ($O_{TOP}S_{NOM}V$) until it encounters the second NP (NP_{NOM}) because the NP_{TOP} can be subject and object. ‘In such a locally ambiguous situation, there is an overall bias toward temporality interpreting the first NP as the subject. However, the grammatical function of the first NP is not the subject but the object. Consequently, the parser needs to revise its interpretation of the first NP from the subject to the object when it encounters the second NP’ (Imamura, Sato, and Koizumi 2016: 10). The revision of the interpretation seems to have given rise to the high processing cost of topicalization. Because of the processing mechanism, the effects of givenness on topicalization were erased, resulting in no correlation between topicalization and givenness in the sentence comprehension experiment. This fact clearly indicates that the usages of scrambling and topicalization cannot be measured only by experiments.

Therefore, other methods such as corpus analyses are needed in order to overcome the shortcomings of the experiments.

Second, heaviness seems to affect the choice of word orders both in the corpus analysis and the experiments in the same way (Hawkins 1994; Imamura 2014, 2015a; Kondo and Yamashita 2011; Suzuki 2000; Yamashita 2002; Yamashita and Chang 2001). The overall picture that emerges from the comparison of the corpus and experimental studies is that the scrambled element tends to be longer than the non-scrambled one because of ‘long-before-short’ preference in Japanese. With regard to heaviness, psycholinguistic studies and corpus studies cooperate with each other in order to shed light on the relationship between heaviness and word orders in terms of processing cost.

Third, there is a discrepancy between the findings of Tanaka et al. (2011) and the present corpus analysis in terms of animacy. In the sentence production experiment conducted by Tanaka et al., it was shown that word orders were directly influenced by animacy. More specifically, $O_{IN}S_{ANI}V$ sentences tended to be recalled as $S_{ANI}O_{IN}V$ so that the animate noun preceded the inanimate noun, but not vice versa. This result signifies that animacy has a direct impact on the choice between SOV and OSV in psycholinguistic experiments. My corpus data fail to corroborate this view, since in the corpus animacy does not bear on the choice of word orders. These contradicting facts suggest that it is

dangerous to jump to the conclusion only based on a particular method. It is necessary to confirm the conclusion obtained from one method by using another method. In this study, the discrepancy between the corpus and the experiment is explained by supposing that animacy has weaker effects on word orders compared with givenness or heaviness. Therefore, animacy is considered to work only when the effects of other factors are neutralized. However, this is a tentative conclusion. Further studies will be needed to determine whether or not this is the case.

In sum, word order changes are affected by givenness and heaviness, but not by animacy in the corpus. However, it has been demonstrated that word orders are influenced by all of the three factors in the experiment (Imamura, Sato, and Koizumi 2014, 2016; Koizumi and Imamura 2016; Tanaka et al. 2011; Yamashita and Chang 2001). These facts imply that the effect of each factor can be both stronger and weaker depending on the situation. In order to investigate the interactions among givenness, heaviness, animacy, and word order change with precision, it seems plausible to take both the corpus and the experiment into consideration. In fact, performing the experiment itself is not sufficient to evaluate the effects of each factor on word order changes. One of the advantages of corpus data is that it is more naturalistic in better representing language ‘as it is used’ in comparison with artificial settings in experiments. However, corpus analysis is not a

perfect tool. The main criticism of corpus data is that it is heterogeneous, meaning that many factors simultaneously influence the crucial grammatical phenomenon under investigation. Sometimes we cannot judge which factor plays an important role because one factor can correlate with another factor. When assessing the relative importance of each factor, psycholinguistic experiments will provide a better understanding of the effects of each factor because one factor can be separated from others by using artificial examples. Based on naturalistic and experimental evidence, we can draw a reasonable conclusion about the usages of scrambling and topicalization.

5.5. Summary

This chapter has examined the interactions among word order, heaviness, and animacy. Consequently, it has been revealed that word order changes are influenced by heaviness, but not by animacy. Taking into account the fact that givenness works on the choice between SOV and OSV (Imamura 2014, 2015a; Imamura, Sato, and Koizumi 2016; Ishii 2001; Koizumi and Imamura 2016; Kuno 1973; Suzuki 2000), word order change is considered to be an amalgam of operations driven by multiple factors. In particular, givenness and heaviness, but not animacy, seem to be determining factors in word order changes. However, this analysis cannot rule out the possibility that animacy has a weak

effect on the choice of word orders. In some cases where givenness and heaviness are neutralized, animacy may have an impact on word orders. In addition, as proposed by previous studies (Bock 1987; Bock and Warren 1985; Branigan et al. 2008; Dahl 2008; Tanaka et al. 2011), animacy may have a strong influence on the grammatical function assignments because animate entities are conceptually more accessible than inanimate ones. If this is a valid assumption, passives will be influenced by animacy greatly because the voice change is related to grammatical function assignments. Indeed, many studies have observed that animacy is a crucial factor for passives (Bock et al. 1992; Dahl and Fraurud 1996; Ferreira 1994; Foley 1994; McDonald et al. 1993). Does it hold of two by-passives (*ni*-passive and *niyotte*-passive) in Japanese? If animacy has an impact on two by-passives, what distinguishes one option from the other? In chapter 7, the interrelationship between animacy and by-passives will be investigated. Before that, I am going to examine the relationship between information structure and by-passives in the next chapter.

Chapter 6

Functional Analysis of Passives in terms of Information Structure

6.1. Overview

This chapter is devoted to the explanation of the distinction between the *ni*-passive and the *niyotte*-passive in terms of the Givónian approach, building on the method described in Section 3.3. This chapter will proceed in the following way. Section 6.2 gives an outline of the by-passives in Japanese, paying attention to the difference between the *ni*-passive and the *niyotte*-passive. Section 6.3 summarizes the semantic, functional, or cognitive factors that affect the choice between the *ni*-passive and the *niyotte*-passive. In particular, thematic roles, verb types and transitivity, subjectivity and empathy, and temporality are taken into consideration in the sections 6.3.1, 6.3.2, 6.3.3 and 6.3.4. Section 6.4 focusses on the relationship between information structure and two by-passives in Japanese. Section 6.5 provides the corpus analysis of the *ni*-passive and the *niyotte*-passive under the framework of the Givónian approach. Section 6.6 deals with the functional similarities and dissimilarities between the two by-passives on the basis of the empirical findings. With regard to the similarities, it has been revealed that both the *ni*-passive and the

niyotte-passive are chosen in order to maintain the topic continuity by promoting the topical logical object to the grammatical subject. With regard to the dissimilarities, passive subjects showed higher TP values in the *ni*-passive than in the *niyotte*-passive. Based on this fact, I propose that the *ni*-passive is pertinent to global topic whereas the *niyotte*-passive is relevant to local topic. Section 6.7 presents the summary of the discussion.

6.2. Some Basic Facts about *NI*- and *Niyotte*- Passives

There are two types of by-passives in Japanese. One is called *ni*-passive and the other is termed *niyotte*-passive. This is because a by-phrase is realized as a *ni*-phrase in *ni*-passives and as a *niyotte*-phrase in *niyotte*-passives, as shown in (1a) and (1b) respectively. From a view point of typology, both *ni*- and *niyotte*- passives are marked options in the sense that by-phrases are explicitly realized (Shibatani 1985; Imamura, Helgason, and Koizumi 2013). Therefore, they require specific discourse contexts in order to be used appropriately due to their markedness (Aissen 1992; Comrie 1988; Imamura, Sato, and Koizumi 2014, 2016; Koizumi and Imamura 2016; Kuno 1987, 1995; Koizumi et al. 2014).

(1) a. *Ni*-passive

sensei-ga gakusei-ni hihans-are-ta.

teacher-NOM student-by criticize-PASS-PAST

‘The teacher was criticized by his student.’

b. *Niyotte*-passive

sensei-ga gakusei-niyotte hihans-are-ta.

teacher-NOM student-by criticize-PASS-PAST

‘The teacher was criticized by his student.’

(adapted from Hoshi 1999: 196)

With regard to the markedness, Givón (2001: 38) states that ‘the very same structure may be marked in one context and unmarked in another’. In English, for example, the sentence (2a) is very common in natural communication whereas (2b) and (2c) are normal in academic writing. In daily conversation, active sentences are unmarked. In academic discourse, passives are unmarked. In a similar way, by-passives can be unmarked and active sentences can be marked in a certain context. For instance, the by-passive sentence (3a) is more acceptable than its active counterpart (3b). Most native Japanese speakers feel that some specific contexts are needed in order to interpret (3b)

appropriately. This example clearly indicates that by-passives can be more unmarked than active sentences in some contexts. The first question arises: what kinds of context, then, is needed in order to construe by-passives as unmarked in Japanese? In order to deal with this issue, the present chapter explores appropriate contexts for by-passives in Japanese.

- (2) a. She wrote the book last year.
 b. The book was written last year.
 c. One writes books (all the time).

(Givón 2001: 39)

- (3) a. Hanako-wa umi-ni nom-are-teshimat-ta.
 Hanako-TOP sea-by swallow-PASS-COMPL-PAST
 ‘Hanako was swallowed up by the sea.’
- b. ? umi-ga Hanako-o nomikon-da.
 sea-NOM Hanako-ACC swallow-PAST
 ‘The swallowed up Hanako.’
- c. machi-wa fukai kiri-ni tsutsum-are-tei-ta.
 town-TOP thick mist-by envelope-PASS-PROG-PAST
 ‘The town was enveloped in thick mist.’

(Muraki 1991: 15-6)

Let us focus on the properties of two by-phrases in Japanese. In many cases *ni* and *niyotte* can be used interchangeably as in (1), but this is not always the case. For example, in (4), only the *niyotte*-passive is permitted and the *ni*-passive is unacceptable. Note that the only difference between (4a) and (4b) is whether the by-phrase is realized as a *ni*-phrase or a *niyotte*-phrase. The second question arises as to what factor determines the choice between the *ni*-passive and the *niyotte*-passive. In order to solve this problem, previous studies have proposed numerous possibilities about the distributions of *ni*-passives and *niyotte*-passives (Fukuda 2011; Imamura, Helgason, and Koizumi 2013; Iwasaki 2002; Kinsui 1997; Kuno 1986; Kuno and Takami 2004; Kuroda 1979; Masuoka 1982, 1991; Muraki 1991; Oshima 2003; Takami 1995, 2011; Yamaguchi 2001). We will overview each of these proposals first and then move on to the corpus analysis of two by-passives. By doing this, the similarities and dissimilarities between *ni*-passives and *niyotte*-passives will be revealed.

- (4) a.* Hōryūji-wa Shōtoku-taishi-ni tate-rare-ta.
the.temple.of.Hōryū Shōtoku-the.Crown.Prince-by build-PASS-PAST

‘The temple of Hōryū was built by Prince Shōtoku.’

b. Hōryūji-wa	Shōtoku-taishi-niyotte	tate-rare-ta.
the.temple.of.Hōryū	Shōtoku-the.Crown.Prince-by	build-PASS-PAST

‘The temple of Hōryū was built by Prince Shōtoku.’

(Muraki 1991: 17)

6.3. Semantic, Functional, or Cognitive Factors

It has been reported that the choice between *ni* and *niyotte* can be accounted for by some functional concepts. Although numerous studies have provided detailed descriptions of *ni*- and *niyotte*-passives, almost all studies depend on the introspective approach, mainly based on grammatical judgement. In order to overcome the shortcomings of qualitative analyses, the present study makes use of a quantitative analysis based on corpus data. Before presenting the results of my corpus analysis, let us take a general view of semantic, functional, or cognitive factors that affect the choice between *ni* and *niyotte* in Japanese by-passives.

6.3.1. Thematic Roles

Fukuda (2011) proposes that *niyotte* can assign a theta-role to its complement whereas *ni*

cannot assign a theta-role to its complement. In other words, *niyotte* is different from *ni* in the sense that the former is a theta role assigner and the latter is not. More specifically, he claims that *niyotte* can assign CAUSER to its complement as a theta role. This analysis seems reasonable because *niyotte* consists of two parts: a case marker *ni* and the gerundive form of a verb *yoru* ‘depend’ (Teramura 1982: 225)¹. It is not surprising that *niyotte* is a theta role assigner, considering its historical background.

In order to confirm his hypothesis, Fukuda conducted three questionnaires about the acceptability of two by-passives with psychological verbs, intransitive verbs, or agent-oriented adverbs. First, *niyotte*-passives are predicted to be inconsistent with psychological verbs such as *kirau* ‘dislike’ because the complement of *niyotte* is assigned a theta role not only by *niyotte* but also by a psychological verb. This results in a violation of theta criterion: each argument bears one and only one theta-role, and each theta-role is assigned to one and only one argument (Chomsky 1981: 36). In contrast, *ni*-passives are predicted to be compatible with psychological verbs because the complement of *ni* receives only one theta role from a psychological verb. Note that *ni* is not a theta role assigner. Based on the first questionnaire, it has been demonstrated that *niyotte*-passives such as (5b) are less compatible with psychological verbs than *ni*-passives such as (5a).

¹ Kuinsui (1997) states that *niyotte* has two meanings: ‘cause/reason’ and ‘means/way’.

Thus, a *niyotte*-phrase is considered to be a theta-role assigner and a *ni*-phrase is not.

(5) a. *ni*-passive

kotoshi-no	senkyo-no	keikō-toshite-wa	wakai	kōhoshaga
this.year-GEN	election-GEN	trends-as-TOP	young	candidate-NOM
tōhyosha-ni	kiraw-are-ta.			
voter-by	dislike-PASS-PAST			

‘In this year’s election, young candidates were disliked by voters’

b. *niyotte*-passive

kotoshi-no	senkyo-no	keikō-toshite-wa	wakai	kōhoshaga
this.year-GEN	election-GEN	trends-as-TOP	young	candidate-NOM
tōhyosha-niyotte	kiraw-are-ta.			
voter-by	dislike-PASS-PAST			

‘In this year’s election, young candidates were disliked by voters’

(Fukuda 2011: 256)

Second, an intransitive verb is considered to co-occur with a *niyotte*-phrase if they are semantically compatible. This is because the complement of *niyotte* is assigned only

one theta role by *niyotte*. In contrast, an intransitive verb is considered to be incompatible with a *ni*-phrase because there is no theta role assigner for the complement of *ni*. Note that intransitive verbs do not have the ability to assign an ‘extra’ theta role due to their intransitivity. The complement of *ni* is expected to violate the theta criterion because both an intransitive verb and *ni* cannot assign theta-role to it. The second questionnaire was conducted to test if there is a correlation between intransitive verbs and passive types. The results of the analysis showed that intransitive verbs were much more compatible with the *niyotte*-phrase than the *ni*-phrase. In other words, the sentence acceptability of the combination with an intransitive verb and a *niyotte*-phrase such as (6a) and (6c) was much higher than that the sentence acceptability of their counterpart with a *ni*-phrase such as (6b) and (6d). This fact supports the view that *niyotte* is a theta-role assigner and *ni* is not. Moreover, it was revealed that the sentences with a *niyotte*-phrase are much more compatible with an inanimate complement than an animate complement. Thus, the sentences such as (6a) are more acceptable than the sentences such as (6c). This result implies that *niyotte* assigns CAUSER because inanimate complements are more compatible with CAUSER than AGENT. Note that AGENT ‘typically denotes a person who deliberately causes some state of affairs to come about’ (Radford 2009 :441) and thus tends to be animate.

(6) a. *niyotte*-phrase + inanimate complement

bakuhatsujiko-ga kenkyūsha-no fuchūi-niyotte oki-ta.

explosion-NOM researcher-GEN carelessness-by happen-PAST

‘An explosion happened because of a researcher’s carelessness.’

b. *ni*-phrase + inanimate complement

bakuhatsujiko-ga kenkyūsha-no fuchūi-ni oki-ta.

explosion-NOM researcher-GEN carelessness-by happen-PAST

‘An explosion happened because of a researcher’s carelessness.’

c. *niyotte*-phrase + animate complement

ookaji-ga kinjo-no kodomo-niyotte oki-ta².

fire-NOM neighbor-GEN child-by happen-PAST

‘The fire happened because of a child in the neighborhood.’

d. *ni*-phrase + animate complement

ookaji-ga kinjo-no kodomo-ni oki-ta.

fire-NOM neighbor-GEN child-by happen-PAST

‘The fire happened because of a child in the neighborhood.’

² (6d) is unacceptable for native Japanese speakers in many cases. However, it may become better if the *ni*-phrase is construed as locative.

Third, agent-oriented adverbs are predicted to be more compatible with the *ni*-passive with an agentive verb than the *niyotte*-passive with the same agentive verb. It should be noted that a *niyotte*-phrase can assign CAUSER to its complement whereas a *ni*-phrase cannot thematically license its complement. Under this account, a *niyotte*-phrase always receives a CAUSER role. On the other hand, the interpretation of the complement of a *ni*-phrase changes in accordance with the type of passivized verbs. If a passivized verb is an agentive verb, as shown in (7a), the complement of a *ni*-phrase will be AGENT. The third questionnaire demonstrated that the acceptability of a *ni*-passive with an agentive adverb such as (7a) was higher than that of a *niyotte*-passive with an agentive adverb such as (7b). In other words, agentive adverbs are more compatible with *ni*-passives than *niyotte*-passives. This result supports the view that a *niyotte*-phrase is a theta role assigner while a *ni*-phrase is not. However, both *niyotte*-passives and *ni*-passives were not as acceptable as active sentences.

(7) a. *ni*-passive

kotoshi-de intaisuru-yōni beteran-no senshu-ga

this.year-in	retire-COMP	seasoned-GEN	athlete-NOM
shinpaishō-no	tsuma-ni	isshōkenmei	settokus-are-ta.
anxious-GEN	wife-by	earnestly	persuade-PASS-PAST

‘The seasoned athlete was persuaded very hard to retire this year by his anxious wife.’

b. *niyotte*-passive

kotoshi-de	intaisuru-yōni	beteran-no	senshu-ga
this.year-in	retire-COMP	seasoned-GEN	athlete-NOM
shinpaishō-no	tsuma-niyotte	isshōkenmei	settokus-are-ta.
anxious-GEN	wife-by	earnestly	persuade-PASS-PAST

‘The seasoned athlete was persuaded very hard to retire this year by his anxious wife.’

Taken together, the three questionnaires conducted by Fukuda provide empirical support for the view that the *niyotte*-phrase is capable of assigning CAUSE to its complement and that the *ni*-phrase is not a theta role assigner. In the same fashion, Ishizuka (2010: 156) argues that what licenses a *niyotte*-phrase is compatible with an

abstract causative light verb (V_{CAUSE})³. Moreover, Ishizuka (2010: 157-8) observed that a *ni*-phrase is not selective about the theta roles of its complement, as shown in (8), (9), (10), (11), (12), and (13). In other words, the *ni*-phrase exhibits a wider distribution than the *niyotte*-phrase in terms of thematic roles. This fact supports the view that the *niyotte*-passive is more marked than the *ni*-passive (Imamura, Helgason, and Koizumi 2013). In fact, *niyotte*-passives are more marked than *ni*-passives in terms of Comrie (1988:19-21)'s criteria for determining markedness. First, *niyotte*-passives are formally more marked than *ni*-passives in the sense that the former includes more morphemes than the latter; *niyotte* consists of two morphemes *ni* and *yoru* whereas *ni* contains only one morpheme. Second, *ni*-passives are more productive than *niyotte*-passives in the sense that *ni*-phrases are more compatible with many theta roles than *niyotte*-phrases. Indeed, Muraki (1991) observed that *ni*-passives are not selective about both verb types and thematic roles of the participants. Third, the frequency of *niyotte*-passives is lower than that of *ni*-passives (Imamura, Helgason, and Koizumi 2013). To the best of my knowledge, it has never been claimed that *niyotte*-passives are more marked than *ni*-passives in terms of discourse distribution. However, since *niyotte*-passives are more marked than *ni*-

³ In the minimalist program, a verb phrase is supposed to be split into two distinct projections: an outer shell and an inner core. This hypothesis is called VP shell analysis. An outer verb shell is normally realized as a light verb, which has the causative interpretation.

passives in terms of the criteria proposed by Comrie (1988), it is conceivable that *ni*-passives can appear in a wide discourse context while *niyotte*-passives are more restricted in their distribution.

(8) Agent

a. keisatsukan-ga Ken-o tsukamae-ta.

police-NOM Ken-ACC catch-PAST

‘The police caught Ken.’

b. Ken-ga (keisatsukan-ni) tsukamae-rare-ta.

Ken-NOM police-DAT catch-PASS-PAST

‘Ken was caught (by the police).’

(9) Cause

a. kaisha-ga tōsanshi-ta-toiu jijitsu-ga

company-NOM bankrupt-PAST-COMP fact-NOM

Ken-o uchinomeshi-ta.

Ken-ACC damage-PAST

‘The fact that his company went bankrupt damaged Ken.’

b. Ken-ga kaisha-ga tōsanshi-ta-toiu

Ken-NOM company-NOM bankrupt-PAST-COMP

jijitsu-ni uchinomes-are-ta.

fact-DAT damage-PASS-PAST

‘Ken was damaged by the fact that his company went bankrupt.’

c. taifū-ga ie-o fukitobashi-ta.

typhoon-NOM house-ACC blow-PAST

‘The typhoon blew the house away.’

d. ie-ga taifū-ni fukitobas-are-ta.

house-NOM typhoon-DAT blow-PASS-PAST

‘The house was blown away by the typhoon.’

(10) Causer

a. John-ga Naomi-ni Ken-o tsukamae-sase-ta.

John-NOM Naomi-DAT Ken-ACC catch-CAUS-PAST

‘John made Naomi catch Ken.’

b. Naomi-ga John-ni Ken-o tsukamae-sase-rare-ta.

Naomi-NOM John-DAT Ken-ACC catch-CAUS-PASS-PAST

‘Naomi was made to catch Ken by John.’

(11) Experiencer

a. gakusei-tachi-ga sono kyōju-o kowagat-ta.

student-PL-NOM that professor-ACC fear-PAST

‘The students feared that professor.’

b. sono kyōju-ga gakusei-tachi-ni kowaga-rare-ta.

that professor student-PL-DAT fear-PASS-PAST

‘The professor was feared by the students.’

(12) Source

a. Naomi-ga Ken-ni hanataba-o okut-ta

Naomi-NOM Ken-DAT flower-ACC send-PAST

‘Naomi sent ken some a flowers bouquet.’

b. Ken-ga Naomi-ni hanataba-o oku-rare-ta.

Ken-NOM Naomi-DAT flower-ACC send-PASS-PAST

‘Ken was sent a flower bouquet by Naomi.’

(13) Goal

a. Ken-ga inu-o morat-ta.

Ken-NOM dog-ACC receive-PAST

‘Ken received a dog.’

b. sono inu-wa Ken-ni moraw-are-ta.

that dog-TOP Ken-DAT receive-PASS-PAST

‘That dog was received by Ken.’

(Ishizuka 2010: 157-9)

6.3.2. Verb Types and Transitivity

Muraki (1991) argues that *niyotte*-passives are normally selected in order to emphasize their *niyotte*-phrases. In (14), for example, only the *niyotte*-passive is acceptable because the complement of the by-phrase, *rinjin* ‘neighbor’, is emphasized. Because of the correlation between emphatic meaning and the *niyotte*-phrase, creative verbs are more compatible with *niyotte*-passives than *ni*-passives⁴. Note that creative verbs are considered to emphasize the by-phrases. In (15), *kaku* ‘write’ belongs to creative verbs because this activity creates works. Therefore, the *niyotte*-passive sentence (15a) is more acceptable than the *ni*-passive sentence (15b)⁵. There is a preference for some verbs to take *niyotte*-passives.

⁴ Grimshaw and Vikner (1993) found the same tendency in English passives. As exemplified by (ia) and (ib), creative verbs are more compatible with by-passives than with agentless passives. However, the unacceptability can be saved by not only a by-phrase but also by the addition of a time adverbial expression *yesterday*, as in (ic).

(i) a. *This house was built.
b. This house was built by a French architect.
c. The house was built yesterday.

(Grimshaw and Vikner 1993: 143)

⁵ The unacceptability of (15b) partly derives from the continuation of the *ni*-phrases, although there is a difference in the theta role between *rinjin* ‘neighbor’ and *rōka* ‘corridor’. Note that *rinjin* receives an agent role and *rōka* is a locative.

(14) a. *niyotte*-passive

jamana-mono-wa	rinjin-niyotte	rōka-ni	hakobidas-are-ta
obstacle-thing-TOP	neighbor-by	corridor-LOC	carry-PASS-PAST

‘The obstacles were carried into the corridor by a neighbor.’

b. *ni*-passive

* jamana-mono-wa	rinjin-ni	rōka-ni	hakobidas-are-ta
obstacle-thing-TOP	neighbor-by	corridor-LOC	carry-PASS-PAST

‘The obstacles were carried into the corridor by a neighbor.’

(adapted from Muraki 1991: 17)

(15) a. *niyotte*-passive

Genji-monogatari-wa	Murasaki	Shikibu-niyotte	kak-are-ta.
The.tale.of.Genji-TOP	Murasaki	Shikibu-by	write-PASS-PAST

‘The tale of Genji was written by Shikibu Murasaki.’

b. *ni*-passive

* Genji-monogatari-wa	Murasaki	Shikibu-ni	kak-are-ta.
The.tale.of.Genji-TOP	Murasaki	Shikibu-by	write-PASS-PAST

‘The tale of Genji was written by Shikibu Murasaki.’

(adapted from Muraki 1991: 17)

In contrast, Oshima (2003) observed that *niyotte*-passives are incompatible with verbs that denote mental states or contact. For instance, *niyotte*-passives are not allowed in (16) because (16a) contains the mental state verbs *sonkeisuru* ‘respect’ or *aisuru* ‘love’ and (16b) includes a contact verb *sawaru* ‘touch’.

- (16) a. Max-wa Pat-ni/**niyotte* sonkeis-are-teiru/ais-are-teiru.
Max-TOP Pat-by respect-PASS-PROG/love-PASS-PROG
‘Max is respected / loved by Pat.’
- b. Alice-wa Pat-ni/??*niyotte* kami-o sawa-rare-ta.
Alice-TOP Pat-by hair-ACC touch-PASS-PAST
‘Pat touched Alice’s hair on her.’

(Oshima 2003: 258)

Based on Hopper and Thompson (1980), Oshima (2003) proposes that *ni/niyotte* alternation depends on the degree of transitivity of the verb. More specifically, he claims that *niyotte* passives are inconsistent with verbs with low transitivity. It should be noticed

that verbs which denote mental states or contact are verbs with low transitivity. Thus, *niyotte*-passives are unacceptable in (16). On the other hand, both *ni*-passives and *niyotte*-passives are possible in (17) because *hakaisuru* ‘destroy’ and *kaishimeru* ‘buy up’ show high transitivity. It seems that Oshima’s analysis agrees with Muraki’s proposal that *niyotte*-passives emphasize the agent realized as a *niyotte*-phrase. This is because highly transitive verbs require explicit agents. Due to this property, *niyotte*-passives are considered to be compatible with highly transitive verbs.

- (17) a. Batman-ga Joker-ni/*niyotte* machi-o hakais-are-ta
 Batman-NOM Joker-by city-ACC destroy-PASS-PAST
 ‘Joker destroyed the city on Batman.’

b. [Context: Max and Pat are rival investors.]

- Max-wa Pat-ni/*niyotte* orange-o kaishime-rare-ta.
 Max-TOP Pat-by orange-ACC buy.up-PASS-PAST
 ‘Pat bought up oranges on Max.’

(Oshima 2003: 258)

6.3.3. Subjectivity and Empathy

It has been proposed that *ni*-passives are subjective while *niyotte*-passives describe the event from a neutral point of view (Kinsui 1997; Kuno 1986; Kuroda 1979, 1985; Takami 2011). Kuroda (1985:71) even states that *niyotte*-passives have exactly the same meaning as their active counterparts. According to his analysis, the *ni*-passive sentence (18a) describes the event from *John*'s point of view whereas the *niyotte*-passive sentence (18b) expresses the event from a speaker's neutral position.

- (18) a. John-ga Bill-ni tasuke-rare-ta.
 John-NOM Bill-by help-PASS-PAST
 ‘John was helped by Bill.’
- b. John-ga Bill-niyotte tasuke-rare-ta.
 John-NOM Bill-by help-PASS-PAST
 ‘John was helped by Bill.’

(Masuoka 1991: 109)

Furthermore, Kinsui (1997)'s proposal shown in (19) agrees with the view that *niyotte*-passives are more objective than *ni*-passives. Since *niyotte*-passives are stiff and objective expressions, they tend to be more compatible with written Japanese than with

spoken Japanese. For example, (20) sounds strange because a *niyotte*-passive is selected for expressing casual situation. *Niyotte*-passives are considered to be formal expressions.

(19) Stylistic Constraint on the *niyotte*-passive

The content of a *niyotte*-passive sentence must be suitable for the solemn style.

(Kinsui 1997: 764)

- (20) ??uraniwa-no ana-wa John-no kaiinu-niyotte hor-are-ta.
 backyard-GEN hole-TOP John-GEN pet.dog-by dig-PASS-PAST
 ‘The hole in the backyard was dug by John’s pet dog.’

Moreover, Kuno (1986, 1990) insists that empathy can give an account of the functional distinction between *ni*-passives and *niyotte*-passives. ‘Empathy is the speaker’s identification, which may vary in degree, with a person/thing that participates in the event or state that he/she describes in a sentence’ (Kuno 2004: 316). As shown in (21), the speaker can express empathy most efficiently with a human noun which is ranked higher than other referents, and he or she can least or hardly identify with an inanimate noun. In the same vein, the speaker can emphasize with the subject more easily than with other

referents.

- (21) Humanness Empathy Hierarchy: It is more difficult for the speaker to emphasize with a non-human animate object than with a human, and more difficult to emphasize with an inanimate object than with an animate object.

$$E(\text{human}) > E(\text{non-human animate}) > E(\text{inanimate})$$

(Kuno 2004: 316)

- (22) Surface Structure Empathy Hierarchy: It is easier for the speaker to empathize with the referent of the subject than with that of any other NP in the sentence.

$$E(\text{subject}) > E(\text{other NPs})$$

(Kuno 2004: 316)

Kuno (1986) found that *ni*-passives must obey the empathy hierarchies shown in (21) and (22) whereas *niyotte*-passives can violate them, as exemplified by (23). In the *ni*-passive sentence (23a), the subject position is occupied by an inanimate noun *ball* and the complement of the *ni*-phrase is a human noun *Oh*⁶. This situation is not desirable because the subject is ranked lower than the *ni*-phrase in the human empathy hierarchy. The

⁶ *Sadaharu Oh* was a famous Japanese-Taiwanese baseball player in Japan.

ungrammaticality of (23a) is attributed to a conflict between (21) and (22). If the speaker strives to empathize with the subject *ball*, this will result in the violation of (21). If the speaker attempts to empathize with the human noun *Oh*, this will result in the violation of (22). The *ni*-passive sentence (23a) clearly indicates that the empathy hierarchies operate powerfully upon the acceptability of *ni*-passives; *ni*-passives must follow the empathy hierarchies. In contrast, the *niyotte*-passive sentence (23b) is completely acceptable although it violates the empathy hierarchies. It must be noted that the only difference between (23a) and (23b) is how to mark a by-phrase. Thus, it is reasonable to conclude that *niyotte*-passives are not sensitive to empathy in the sense that the empathy perspective is unrelated to the grammaticality of *niyotte*-passives. Recall that *niyotte*-passives describe the event objectively from a speaker's neutral perspective. In addition, the empathy perspective is subjective in the sense that it expresses the speaker's identification with the referents in a sentence. Empathy is associated with speaker's subjective judgement about the event. Taken together, it seems plausible that the empathy perspective does not come into play at all in *niyotte*-passives. On the other hand, the empathy perspective seems to work on *ni*-passives because *ni*-passives describe the event subjectively. In sum, a subjective/objective distinction works in tandem with the empathy perspective in order to determine the acceptability of *ni*- and *niyotte*-passives

(23) a. *ni*-passive

* shiroi bōru-ga Oh-ni uchiage-rare-ta.

white ball-NOM Oh-by fly-PASS-PAST

‘A white ball was flown by the athletic Oh.’

b. *niyotte*-passive

shiroi bōru-ga Oh-niyotte uchiage-rare-ta.

white ball-NOM Oh-by fly-PASS-PAST

‘A white ball was flown by the athletic Oh.’

(Kuno 1986: 79)

6.3.4. Temporality

Yamaguchi (2001) observed that temporality has an influence on the choice between *ni*-passives and *niyotte*-passives. She argues that *ni*-passives agree with verbs that encode an instantaneous event whereas *niyotte* -passives are compatible with verbs that encode a durative event. In (24), the event caused by *kowasu* ‘break’ occurs instantaneously. Thus, the *ni*-passive sentence (24a) is more acceptable than the *niyotte*-passive sentence (24b) because the former is a preferable choice for verbs that denote a punctual event. On the

other hand, (25) expresses a durative event caused by *mageru* ‘bend’. Note that it takes some time to bend an iron bar. Since there is a correlation between *niyotte*-passives and durative events, (25b) is more acceptable than (25a). The difference in acceptability between the *ni*-passive and the *niyotte*-passive can be accounted for by the notion of temporality, as exemplified by (24) and (25).

(24) a. *ni*-passive

kabin-ga	itazurakko-ni	kowas-are-ta.
vase-NOM	mischievous.boy-by	break-PASS-PAST

‘The vase was broken by a mischievous boy.’

b. *niyotte*-passive

? kabin-ga	itazurakko-ni	kowas-are-ta.
vase-NOM	mischievous.boy-by	break-PASS-PAST

‘The vase was broken by a mischievous boy.’

(25) a. *ni*-passive

? tetsubō-ga	oootoko-ni	mage-rare-ta.
iron.bar-NOM	giant.man -by	bend-PASS-PAST

‘An iron bar was bent by a giant man.’

b. *niyotte*-passive

tetsubō-ga	oootoko-niyotte	mage-rare-ta.
iron.bar-NOM	giant.man -by	bend-PASS-PAST

‘An iron bar was bent by a giant man.’

(Yamaguchi 2001: 243)

In the same way, the behavior of the verb *tsubusu* supports the view that temporality works on the choice between the *ni*-passive and the *niyotte*-passive. Note that the verb *tsubusu* has two meanings: *crush* and *mash*. When it is taken as meaning *crush*, the *ni*-passive is a preferable choice. The event occurs instantaneously when something is crushed. Note that *ni*-passives are consistent with instantaneous events. Taken together, the verb *tsubusu* agrees with the *ni*-passive when it means *crush*, as shown in (26a). On the other hand, when the verb *tsubusu* means *mash*, the *niyotte*-passive is a desirable choice. It is obvious that it takes some time to mash something. Recall that *niyotte*-passives are compatible with durative events. Taken together, the verb *tsubusu* goes in hand with the *niyotte*-passive when it means *mash*, as shown in (26b).

(26) a. kēki-ga itazurakko-ni/?niyotte tsubus-are-ta.

cake-NOM mischievous.boy-by crush-PASS-PAST

‘Cakes were crushed by a mischievous boy.’

b. jagaimo-ga okāsan-?ni/niyotte tsubus-are-ta.

potato-NOM mother-by mash-PASS-PAST

‘Potatoes were mashed by the mother.’

Furthermore, ‘the notion of temporarily can be extended to the contrasting behavior of the verb *korosu* ‘kill’ which can allow both *ni* and *niyotte* depending on how the event of killing is conceived by the speaker’ (Yamaguchi 2001: 243). In order to illustrate her analysis, let us have a close look at (27). In (27a), the kidnapper is considered to be not only an initiator but also a finalizer of the event *killing the child*. Since the initiation and finalization fall into the same temporal span, the *ni*-passive is a preferable choice in (27a). In contrast, in (27b), the executor is a finalizer but not an initiator because his duty is to execute the culprit on the basis of the court’s decision. Since the initiation is separated from the finalization in (27b), the *niyotte*-passive is expected to be preferable to the *ni*-passive. Anyway, temporality seems to have an effect on the choice between the *ni*-passive and the *niyotte*-passive.

(27) a. kodomo-ga yūkaihan-ni/?niyotte koros-are-ta.

child-NOM kidnapper-by kill-PASS-PAST

‘The child was killed by the kidnapper.’

b. hannin-ga shikeishikkōnin-?ni/niyotte tsuini koros-are-ta.

criminal-NOM executioner-by finally kill-PASS-PAST

‘The criminal was finally killed by the executioner.’

(Yamaguchi 2001: 244)

6.4. Information Structure and Two By-Passives

In terms of information structure, Masuoka (1982) proposes that *ni*-passives are chosen in order to promote the salient logical object (promotional passive) whereas *niyotte*-passives are selected so as to demote the non-salient logical subject (demotional passive).

Let us focus on the derivation of the *ni*-passive first. The first step is to change the object of an active sentence such as (28a) into the subject in its corresponding passive sentence such as (28b). This process is accompanied by demoting the subject of an active sentence to the *ni*-phrase in its passive equivalent because double subjects are not generally permitted in Japanese. It should be noted that the main motivation of using the *ni*-passive is to foreground the logical object. Through this process, the speaker can express more

explicitly that the logical object is characterized or affected by the event. For example, the subject of the *ni*-passive sentence (29b), *kono ronbun* ‘this article’, is characterized by the event *Chomsky cited this particle several times*. This passive sentence pragmatically means that *this paper* is an important academic article, whereas its corresponding active sentence (29a) does not include such a meaning. In the same vein, the subject of the *ni*-passive sentence (30b), *John*, is psychologically affected by the event *John was laughed at by his friend*. On the other hand, there is no such a pragmatic meaning in its active equivalent (30a)⁷.

- | | | | |
|------|---------------------------|------------|---------------|
| (28) | a. Taro-ga | Hanako-o | nagut-ta. |
| | Taro-NOM | Hanako-ACC | hit-PAST |
| | ‘Taro hit Hanako.’ | | |
| | b. Hanako-ga | Taro-ni | nagu-rare-ta. |
| | Hanako-NOM | Taro-by | hit-PASS-PAST |
| | ‘Hanako was hit by Taro.’ | | |

(Masuoka 1991: 105)

⁷ Note that the active sentence (28a) sounds a bit unnatural because it violates empathy hierarchy. The third person proper NP, *John*, is more empathized than the subject, (his) *yūjin* ‘(his) friend’. This situation is undesirable in terms of the Surface Structure Empathy Hierarchy shown in (22). On the other hand, if *yūjin* ‘friend’ means *my friend*, (28a) will be more acceptable because this interpretation does not violate the empathy constraint (22).

(29) a. Chomsky-wa kono ronbun-o sūkai inyōshi-ta.

Chomsky-TOP this article-ACC several.times cite-PAST

‘Chomsky cited this article several times.’

b. kono ronbun-wa Chomsky-ni sūkai inyōs-are-ta.

this article-TOP Chomsky-by several.times cite-PASS-PAST

‘This article is cited by Chomsky.’

(adapted from Masuoka 1982: 58)

(30) a. ? yūjin-wa John-o bakanishi-ta.

friend-TOP John-ACC laugh.at-PAST

‘His friend laughed at John.’

b. John-wa yūjin-ni bakanis-are-ta.

John-TOP friend-by laugh.at-PASS-PAST

‘John was laughed at by his friend.’

(adapted from Masuoka 1982: 53)

Let us converge on the derivational processes of the *niyotte*-passive below. First,

the subject of an active sentence is demoted to the *niyotte*-phrase of its corresponding passive sentence. Second, the direct object of an active sentence is promoted to the subject of its passive equivalent in order to fill the subject position. With regard to the function of the *niyotte*-phrase, Masuoka points out two possibilities: focus and backgrounding. Let us have a close look at (31). In (31a), *Kūkai* is an essential part of the *niyotte*-passive sentence. Without the existence of *Kūkai*, the *niyotte*-passive sentence would be unacceptable as illustrated by (31b). Therefore, it is conceivable that the *niyotte*-phrase in (31a) is a focus. However, as shown in the contrast between (31c) and (31d), the *niyotte*-phrase can be dropped. This fact suggests that the *niyotte*-phrase may be backgrounded.

- (31) a. sono tera-wa Kūkai-niyotte tate-rare-ta.
 that temple-TOP Kūkai-by build-PASS-PAST
 ‘That temple was built by Kūkai.’
- b. ?? sono tera-wa tate-rare-ta.
 that temple-TOP build-PASS-PAST
 ‘That temple was built.’
- c. tōanyōshi-ga shikenkan-niyotte kuba-rare-ta.

answer.paper-NOM examiner-by distribute-PASS-PAST

‘Answer papers were distributed by the examiner (to the students).’

d. tōanyōshi-ga kuba-rare-ta.

answer.paper-NOM distribute-PASS-PAST

‘Answer papers were distributed (to the students).’

(adapted from Masuoka 1982: 61)

Next, let us consider the discourse function of *ni*-passives and *niyotte*-passives in terms of the Givónian approach. There are three possibilities about their behaviors in terms of RD. First, it is conceivable that both *ni*-passives and *niyotte*-passives are selected when the subject is lower in RD than the by-phrase. This prediction is based on the observation that by-passives in English are normally chosen when the subject is older than the by-phrase (Birner and Ward 1998, 2009; Seoane 2009, 2012). If the same is the case with Japanese, Japanese passives as a whole will be selected when the patient is older than the agent. Cross-linguistically, it has been demonstrated that passivization is made use of in order to maintain the topic continuity by placing a topical patient on the subject position (Aissen 1999; Cooreman 1982, 1987; Givón 1983, 1994; Shibatani 1988; Thompson 1987). Although by-passives are marked options, avoiding non-topical

subjects may be one of the main motivations for using both *ni*-passives and *niyotte*-passives. Second, givenness may be unrelated to both *ni*-passives and *niyotte*-passives at all. This prediction is based on the possibility that avoiding non-topical subjects may not be a strong constraint. It is possible that both *ni*- and *niyotte*-passives are not influenced by givenness but by other factors which are more important than avoiding non-topical subjects. Third, the subject of *niyotte*-passives may be newer than that of *ni*-passives. Recall that *ni*-passives are sensitive to the empathy hierarchies stated in (21) and (22) whereas *niyotte*-passives are not (Kuno 1986, 1990, 2004). Thus, *niyotte*-passives are considered to be more compatible with inanimate subjects than *ni*-passives. In addition, Givón (1994) and Rosenbach (2008) claim that animate nouns are more topical than inanimate nouns. Specifically, Rosenbach (2008:156) states that ‘animates, especially humans, are more likely to be a discourse topic and are therefore also more likely to be definite’. Taken together, subjects may be newer in *niyotte*-passives than in *ni*-passives because *niyotte*-passives are more consistent with inanimate nouns, which are generally less topical than animate ones.

In terms of TP, it has been revealed in Polish and Japanese that TP strongly correlates with subjecthood (see chapter 4 for Japanese, and Siewierska 1993 for Polish). Hence, both *ni*- and *niyotte*-passives are considered to have subjects with high TP values.

However, passive subjects may show higher TP values in *ni*-passives than in *niyotte*-passives. In *ni*-passives, subjects are normally animate nouns, which are considered to be highly topical according to Givón (1994) and Rosenbach (2008). On the other hand, in *niyotte*-passives, subjects are not necessarily animate nouns because there is no empathy constraint in *niyotte*-passives. The difference in animacy between *ni*-passives and *niyotte*-passives may be reflected in their TP values. With regard to the TP values of by-phrases, several possibilities will be pointed out here. Let us focus on *ni*-passives first. *Ni*-phrases may show low TP values because *ni*-passives are promoting passives (Masuoka 1982). The motivation for promoting passives is to promote the topical logical object. The discourse status of the logical subject is not important for promoting passives. Moreover, *ni*-phrases are non-subject arguments, which are considered to have low TP values. This is because subjecthood correlates with TP values. Yet, it is also possible that *ni*-phrases are related to high TP values because by-passives are marked options. A marked construction is permitted only in a specific discourse context (Aissen 1992; Imamura, Sato, and Koizumi 2014, 2016; Kuno 1987, 1995; Koizumi et al. 2014; Koizumi and Imamura 2016). The high TP values of *ni*-phrases may be the reason why *ni*-passives are selected. With regard to the TP values of *niyotte*-phrases, I propose two possibilities, partly building on Masuoka (1982). The first possibility is that the TPs of *niyotte*-phrases

are low. This prediction is founded on the function of backgrounding the agent. Masuoka (1982: 61) states that *niyotte*-passives developed via the translation of Western languages and therefore they are considered to have a specialized function of backgrounding although their agents are explicitly realized as *niyotte*-phrases. Note that backgrounded information is considered to disappear from the following discourse (Shimojo 2005: 18). The second possibility is that the TPs of *niyotte*-phrases are high. This expectation depends on the function of focusing the agent. It should be noted that *niyotte*-phrases are placed in the position immediately preceding the predicate. Recall that an immediately pre-verbal position is the default position for the focus (Kuno 1978: 60). Therefore, it is possible that *niyotte*-phrases express the focus information and tend to be carried over to the following discourse.

Numerous studies have proposed the possibilities about the functional distinction between *ni*-passives and *niyotte*-passives (Fukuda 2011; Imamura, Helgason, and Koizumi 2013; Iwasaki 2002; Kinsui 1997; Kuno 1986; Kuno and Takami 2004; Kuroda 1979; Masuoka 1982, 1991; Muraki 1991; Oshima 2003; Takami 1995, 2001; Yamaguchi 2001). However, almost all studies depend on introspective approaches. To my knowledge, there have been no corpus studies about the functional differences between *ni*-passives and *niyotte*-passives in Japanese to date. Therefore, this study inspects the

functional aspects of *ni*-passives and *niyotte*-passives on the basis of a corpus analysis. In particular, this chapter concentrates on the investigation of the discourse status of *ni*-passives and *niyotte*-passives within the framework of the Givónian approach.

6.5. Corpus Analysis of *Ni*- and *Niyotte*- Passives in terms of Information Structure

6.5.1. Basic Purposes

The aim of this analysis is to explore the functional distinction between *ni*-passives and *niyotte*-passives in terms of the Givónian approach. To this end, the RD and TP values of subjects and by-phrases in both *ni*- and *niyotte* passives are measured.

6.5.2. Method

6.5.2.1. Corpus Data

BCCWJ was made use of in order to extract the relevant data (see Section 3.1 to details).

6.5.2.2. Materials

There are six conditions in this analysis. Two conditions focus on *ni*-passives as shown in (32a, b), two conditions concentrate on *niyotte*-passives as shown in (32c, d), and the

other two conditions are related to active sentences as shown in (32e, f). Active sentences are taken into consideration as a baseline for the discourse status of the logical subject and the logical object.

- (32) a. $S_{\text{NOM}} \text{NP}_{\text{Ni}} \text{V}$
- b. $S_{\text{TOP}} \text{NP}_{\text{Ni}} \text{V}$
- c. $S_{\text{NOM}} \text{NP}_{\text{Niyotte}} \text{V}$
- d. $S_{\text{TOP}} \text{NP}_{\text{Niyotte}} \text{V}$
- e. $S_{\text{NOM}} \text{O}_{\text{ACC}} \text{V}$
- f. $S_{\text{TOP}} \text{O}_{\text{ACC}} \text{V}$

6.5.2.3. Procedures

For each condition as illustrated in (32), 100 examples were randomly collected from BCCWJ via *Chunagon*. In order to collect each example, the linear orders of particles were utilized. With regard to $S_{\text{NOM}}\text{NP}_{\text{Ni}}\text{V}$, the sentences with the nominative case marker *GA* followed by the *ni*-phrase were extracted. In the same fashion, the combinations of the particles between the subject and the by-phrase were utilized in order to collect $S_{\text{TOP}}\text{NP}_{\text{Ni}}\text{V}$, $S_{\text{NOM}}\text{NP}_{\text{Niyotte}}\text{V}$, and $S_{\text{TOP}}\text{NP}_{\text{Niyotte}}\text{V}$. With regard to active sentences, the same

examples utilized in the chapters 4 and 5 were reused.

Note that the *ni*-phrase can be used in a wider context than the *niyotte*-phrase. This signifies that the *ni*-phrase may be applicable to related constructions which include a *rare*-morpheme (see Section. 2.2.5 to the details of the passive related constructions). For example, *rare*-morpheme in (33) stands for the speaker’s politeness toward the subject *kamigami* ‘Gods’. It should be noticed that the *ni*-phrase in (33) is not a by-phrase but a locative case marker. Therefore, it is necessary to exclude the sentences with a non-passive *rare*-morpheme by hand.

- (33) tenjōkai-no kamigami-ga chijō-ni oriteko-rare-ta.
 heaven-GNE Gods-NOM earth-LOC descend-HON-PAST
 ‘Gods in heaven descended to earth.’

(BCCWJ)

6.5.3. Results

Table 6.1 expresses the abridged data on RD and TP collected from BCCWJ, showing the average value and the standard deviation for each condition.

Table 6.1 RD and TP of each sentence type

Sentence	Grammatical	RD		TP	
Types	Functions	M	SD	M	SD
$S_{NOM}NP_{Ni}V$	S	8.28	8.20	2.72	2.16
	by	12.81	7.74	1.25	1.67
$S_{TOP}NP_{Ni}V$	S	4.76	6.21	3.07	2.27
	by	10.21	8.33	1.45	1.87
$S_{NOM}NP_{Niyotte}V$	S	8.58	7.98	2.24	1.99
	by	12.08	8.29	1.52	2.60
$S_{TOP}NP_{Niyotte}V$	S	6.15	6.79	2.17	2.18
	by	11.51	8.45	1.51	1.84
$S_{NOM}O_{ACC}V$	S	7.62	7.98	2.15	2.18
	O	13.14	8.53	1.22	1.93
$S_{TOP}O_{ACC}V$	S	6.31	6.81	3.01	2.25
	O	10.38	8.58	1.24	1.66

A series of t-tests were performed for the average values of RD and TP. With regard to the RD values within by-passives, subjects were significantly lower than by-phrases in $S_{NOM}NP_{Ni}V$ ($t(198)=4.02$, $p<.01$), $S_{TOP}NP_{Ni}V$ ($t(198)=5.24$, $p<.01$), $S_{NOM}NP_{Niyotte}V$

($t(198)=3.04, p<.01$), and $S_{TOPNP_{Niyotte}V}$ ($t(198)=4.94, p<.01$). In other words, the passive subject was older than the by-phrase both within *ni*-passives and *niyotte*-passives. Talking of the TP values within by-passives, subjects were significantly higher than by-phrases in $S_{NOMNP_{Ni}V}$ ($t(198)=5.39, p<.01$), $S_{TOPNP_{Ni}V}$ ($t(198)=5.52, p<.01$), $S_{NOMNP_{Niyotte}V}$ ($t(198)=2.20, p<.05$), and $S_{TOPNP_{Niyotte}V}$ ($t(198)=2.31, p<.05$). Therefore, subjects were more likely to be taken over to the following discourse than by-phrases.

Next, let us take the effects of the voice change into consideration. In the RD values of the logical subjects (by-phrases in passive sentences and subjects in active sentences), by-phrases of $S_{TOPNP_{Ni}V}$ were significantly lower than these of $S_{NOMNP_{Ni}V}$ ($t(198)=2.29, p<.05$). In addition, by-phrases of $S_{TOPNP_{Ni}V}$ were significantly higher in RD values than subjects of $S_{NOMO_{ACC}V}$ ($t(198)=2.24, p<.05$) and $S_{TOPO_{ACC}V}$ ($t(198)=3.62, p<.01$). However, there was no significant differences in the RD values of by-phrases among $S_{NOMNP_{Ni}V}$, $S_{NOMNP_{Niyotte}V}$, and $S_{TOPNP_{Niyotte}V}$. Taken together, by-phrases of passive sentences were generally newer than subjects of active sentences.

Regarding the RD values of the logical objects (subjects in passive sentences and objects in active sentences), subjects $S_{NOMNP_{Ni}V}$ were higher than $S_{TOPNP_{Ni}V}$ ($t(198)=3.42, p<.01$) and $S_{TOPNP_{Niyotte}V}$ ($t(198)=2.00, p<.05$). Furthermore, subjects in $S_{NOMNP_{Ni}V}$ showed lower RD values than objects in $S_{NOMO_{ACC}V}$ ($t(198)=4.11, p<.01$).

Yet, there was no significant difference in the RD values of logical objects among $S_{NOM}NP_{Ni}V$, $S_{NOM}NP_{Niyotte}V$, and $S_{TOP}O_{ACC}V$. With regard to the subjects of $S_{TOP}NP_{Ni}V$, they were lower in RD values than the subjects of $S_{NOM}NP_{Niyotte}V$ ($t(198)=3.78, p<.01$), the objects of $S_{NOM}O_{ACC}V$ ($t(198)=7.94, p<.01$) and $S_{TOP}O_{ACC}V$ ($t(198)=5.31, p<.01$). On the other hand, there was no significant difference in the RD values of the subjects between $S_{TOP}NP_{Ni}V$ and $S_{TOP}NP_{Niyotte}V$ ($t(198)=1.51, p=.13$). Speaking of the subjects of $S_{NOM}NP_{Niyotte}V$, they were higher in RD values than the subjects of $S_{TOP}NP_{Niyotte}V$ ($t(198)=2.32, p<.05$) but lower in RD values than the objects of $S_{NOM}O_{ACC}V$ ($t(198)=3.90, p<.01$). Yet, there was no significant difference in RD values between the subjects of $S_{NOM}NP_{Niyotte}V$ and the objects of $S_{TOP}O_{ACC}V$ ($t(198)=1.54, p=.13$). Lastly, the subjects of $S_{TOP}NP_{Niyotte}V$ showed lower RD values than the objects of $S_{NOM}O_{ACC}V$ ($t(198)=6.41, p<.01$) and $S_{TOP}O_{ACC}V$ ($t(198)=3.87, p<.01$).

In the TP values of the logical subject, there was no significant differences among $S_{NOM}NP_{Ni}V$, $S_{TOP}NP_{Ni}V$, $S_{NOM}NP_{Niyotte}V$, and $S_{TOP}NP_{Niyotte}V$. In other words, by-phrases behaved in a uniform way, irrespective of the passive types. With regard to active sentences, the subjects of $S_{TOP}O_{ACC}V$ showed higher TP values than the by-phrases of $S_{NOM}NP_{Ni}V$ ($t(198)=6.27, p<.01$), $S_{TOP}NP_{Ni}V$ ($t(198)=5.33, p<.01$), $S_{NOM}NP_{Niyotte}V$ ($t(198)=4.33, p<.01$), and $S_{TOP}NP_{Niyotte}V$ ($t(198)=5.15, p<.01$). Furthermore, the subjects

of $S_{NOM}O_{ACC}V$ had higher TP values than the by-phrases of $S_{NOM}NP_{Ni}V$ ($t(198)=3.28, p<.01$), $S_{TOP}NP_{Ni}V$ ($t(198)=2.44, p<.05$), and $S_{TOP}NP_{Niyotte}V$ ($t(198)=2.24, p<.05$). Yet there was no significant difference between the subjects of $S_{NOM}O_{ACC}V$ and the by-phrases of $S_{NOM}NP_{Niyotte}V$ ($t(198)=1.86, p=.07$).

Concerning the TP values of the logical object, $S_{TOP}NP_{Ni}V$ were higher than $S_{NOM}NP_{Niyotte}V$ ($t(198)=2.75, p<.01$), $S_{TOP}NP_{Niyotte}V$ ($t(198)=2.86, p<.01$), $S_{NOM}O_{ACC}V$ ($t(198)=6.22, p<.01$), and $S_{TOP}O_{ACC}V$ ($t(198)=6.52, p<.01$). Yet, there was no significant difference between $S_{NOM}NP_{Ni}V$ and $S_{TOP}NP_{Ni}V$ ($t(198)=1.12, p=.26$). The subjects of $S_{TOP}NP_{Niyotte}V$ showed higher TP values than the objects of $S_{NOM}O_{ACC}V$ ($t(198)=3.26, p<.01$) and $S_{TOP}O_{ACC}V$ ($t(198)=3.39, p<.01$). However, there was no significant difference in the TP values of the logical objects between $S_{NOM}NP_{Ni}V$ and $S_{TOP}NP_{Niyotte}V$ ($t(198)=1.79, p=.07$).

6.6. Discussion

The main objective of this analysis is to study the distinction between *ni*-passives and *niyotte*-passives under the framework of the Givónian approach. The first finding of the present analysis is that passive subjects were more topical than by-phrases both within *ni*-passives and *niyotte*-passives. In terms of RD, passive subjects were normally older than

by-phrases. This result is consistent with the observation that the subject is generally order than by-phrase in the English by-passive (Birner and Ward 1998, 2009; Seoane 2009, 2012). In terms of TP, passive subjects tended to be taken over to the following discourse more often than by-phrases. The correlation of the TP values with subjecthood is in line with the results of chapter 4 and Siewierska (1993). Taken together, when by-passives are selected, subjects are normally more topical than by-phrases. This signifies that even by-passives conform to the typological characteristic of passivization in that topical patients are placed on the subject position, although they are more marked than agentless passives (Comrie 1988; Givón 1979, 1990; Imamura, Helgason, and Koizumi 2013; Keenan 1985; Maratsos 1978; Shibatani 1985; Svaltvik 1966).

Second, there was no significant difference between *ni*-phrases and *niyotte*-phrases both in RD and TP. In other words, there is no difference between *ni*-phrases and *niyotte*-phrases in terms of their discourse status. They behave uniformly in the sense that they are non-topical referents; they are unlikely to have antecedents in the immediately previous discourse and to be referred to in the following discourse. It should be noted that background information tends to disappear from the discourse (Shimojo 2005: 18). Therefore, by-phrases in both *ni*- and *niyotte*-passives are considered to defocus or background the logical subject, as predicted by Shibatani (1985). This result also agrees

with Siewierska (1993)'s finding that non-subject arguments are more likely to disappear from the discourse than subjects. Anyway, the distinction between *ni*-passives and *niyotte*-passives cannot be accounted for by the discourse status of by-phrases. This is because there is no difference between *ni*-phrases and *niyotte*-phrases in terms of their RD and TP values.

Third, passive subjects were more topical than active objects in terms of anaphoric and cataphoric co-referencing. In fact, passive subjects were lower in RD and higher in TP than active objects. On the other hand, both *ni*-phrases and *niyotte*-phrases were less topical than active subjects. Indeed, by-phrases were higher in RD and lower in TP than active subjects. Taken together, passivization is normally selected when the logical object is more topical than the logical subject. This analysis coincides with Shibatani (1985) stating that passivization is chosen in order to defocus the non-topical logical subject and with the previous studies claiming that passivization is selected to maintain the topic continuity by promoting the topical logical object to the grammatical subject because the subject position is a desirable place for topical elements (Aissen 1999; Cooreman 1982, 1987; Givón 1983, 1994; Shibatani 1988; Thompson 1987). However, the finding from the present analysis partly contradicts with Masuoka (1982) in the sense that not only *ni*-passives but also *niyotte*-passives are selected in order to promote the topical logical

object. According to Masuoka's prediction, *niyotte*-passives are demoting passives and thus are unrelated to the promotion of the topical logical object. Yet, the results of the corpus analysis have revealed that *niyotte*-passives are also promoting passives.

Fourth, subjects tended to be taken over to the following discourse more often in *ni*-passives than in *niyotte*-passives. Recall that the choice of the subject in *ni*-passives is restricted by the empathy hierarchy proposed by Kuno (1986, 1990, 2004). Generally speaking, subjects in *ni*-passives prefer animate nouns because they require the subject to be affected (Kuroda 1979). In contrast, there is no such a constraint in *niyotte*-passives. Thus, subjects are normally more animate in *ni*-passives than in *niyotte*-passives. For example, the animate subject *ō* 'king' is compatible with both the *ni*-passive and the *niyotte*-passive as illustrated by (34a) while the inanimate subject *Kyoto* is consistent with the *niyotte*-passive but inconsistent with the *ni*-passive as exemplified by (34b). It should be noted that animate nouns are generally more topical than inanimate nouns (Givón 1994). Taken together, subjects are expected to be more topical in *ni*-passives than in *niyotte*-passives. However, the correlation between animate nouns and subjects in *ni*-passives is not an all-or-nothing phenomenon. Note that pragmatic constraints are not predictive principles but just general tendencies (Jucker and Taavitsainen 2013: 5). Thus, inanimate subjects can be permitted in the *ni*-passive in some cases. In (35), the passive

subject is the inanimate noun *santō-hantō-no fukō* ‘the beauty of the Shandong-peninsula’, but the *ni*-passive sentence (35) is acceptable.

(34) a. *Ni*-passive

numachikara	yomigae-tta	ō-ga
marshy.place	come.to.life-PAST	king-NOM
tenshi-ni/niyotte	mukae-rare-ru.	
angel-by	welcome-PASS-NONPAST	

‘The king who came back to life from a marshy place is welcomed by an angel.’

b. *Niyotte*-passive

Kyoto-ga	Kanmu-tennō-niyotte/*ni	hirak-are-ta.
Kyoto-NOM	Kanmu-emperor-by	found-PASS-PAST

‘Kyoto was founded by the Emperor Kanmu.’

(adapted from BCCWJ)

(35) *Ni*-passive

santō-hantō-no	fukō-ga	Shikotei-ni
Shandong-peninsula-GEN	natural.beauty-NOM	Qin,Shi.Huang-by

mottomo kini-rare...

best like-PASS...

‘The natural beauty of the Shandong peninsula is the Qin Shi Huang’s most
favorite...’

(BCCWJ)

The choice between *ni*-passives and *niyotte*-passives can be partly explained by the fact that passive subjects are apt to be carried over to the following discourse more often in *ni*-passives than in *niyotte*-passives. Let us take a close look at the actual examples from BCCWJ. It should be noted that (36) comprises the *ni*-passive sentence (36b). The referent of the passive subject, *Lucinda*, is highly frequently mentioned throughout the discourse and carries cataphorically high topicality and stays activated. On the other hand, the passive subject *yume* ‘dream’ in (37a) is mentioned only in (36g, l). Moreover, (37l) is outside of the scope of TP calculation because TP counts the number of clauses in the following 10 clauses in which the referent re-occurs. As a result, the TP value of *yume* in (37a) is only 1. It should be noticed that (37a) is a *niyotte*-passive sentence. The referent of the passive subject *yume* is mentioned only once throughout the discourse and thus carries cataphorically low topicality and decays rapidly after being mentioned. The

contrast between (36) and (37) clearly shows that the *ni*-passive is more continuous than the *niyotte*-passive in terms of cataphoric topicality.

(36) *Ni*-passive

a. desuku-no	mukai-no	kawabari-no	isu-ni
desk-GEN	opposite-GEN	leather.bound-GEN	chair-LOC
Ø	suwa-ru-to		
(she)	sit-NONPAST-when		

‘When she sat in the leather-bound chair facing the desk,’

b. Lucinda-wa	hanji-ni	jirojiroto	mi-rare-ta.
Lucinda-TOP	judge-by	audaciously	look.at-PASS-PAST

‘Lucinda was stared at by the judge.’

c. arushu-no	odoroki-o	motte
a.certain.kind.of-GEN	astonishment-ACC	with
kansatsus-are-teiru-yōda		
observe-PASS-PROG-MOD		

‘It was as if she was being observed with a certain kind of astonishment.’

d. kanojo-wa	zōgeiro-no	satenji-no	nō-surību-no	burausu-to
--------------	------------	------------	--------------	------------

she-TOP ivory-GEN satin-GEN less-sleeve-GEN blouse-and

ofu-howaito-no sukāto-o minitsuke-tei-ta.

off-white-GEN skirt-ACC wear-PROG-PAST

‘She was wearing a sleeveless ivory-white satin blouse and an off-white skirt.’

e. kami-wa ushiro-de matome

hair-TOP back-LOC tie

‘Her hair was tied back,’

f. makige-ga kao-o fuchido-tteiru.

curly.locks-NOM face-ACC fringe-PROG

‘curly locks fringing her face.’

g. shinju-no iaringu-ga mimimotode yure,

pearl-GEN earring-NOM close.to.one’s.ear sway

‘Pearl earrings swayed by her ears’

h. kubi-no atari-o suzushigeni mise-tei-ta.

Neck-GEN area-ACC refreshing look-PROG-PAST

‘while her neck area was refreshingly bare.’

i. kanojo-wa itsumoto chigatte keshō-mo shi-tei-ta.

she-TOP usually different make.up-also do-PROG-PAST

‘She was also wearing makeup for a change.’

j. Ø kireina hanayome-ni mieru-yoni shitakat-ta-noda
(she) pretty bride-DAT look-in.order.to want-PAST-COP

‘She wanted to look like a pretty bride.’

k. ano otoko-ga tsuini mi-o katame-ru
that man-NOM finally his.position settle.down-NONPAST
koto-ni shi-ta-towa
thing-DAT do-PAST-PTCL

l. Ø nakanaka shinji-rare-n-ne.

(I) hardly believe-POT-NEG-FP

‘I can hardly believe that that man has finally decided to settle down.’

m. Shapiro-hanji-wa sō iu-to...

Shapiro-judge-TOP so say-and

‘Judge Shapiro said so...’

(BCCWJ)

(37) *Niyotte*-passive

a. yume-wa yatō-no teni-yotte muzannimo

dream-TOP night.burglar-GEN hand-by cruelly

ichiya-de kudak-are-teshimat-ta-nodearu.

one.night-in crash-PASS-COMPL-PAST-COP

‘Her dreams were cruelly crushed in one night by a night burglar.’

b. yadoya-ni oshihaitteki-ta

inn-LOC break.into-PAST

c. yatō-ni kane-o gossori ubaw-are-ta.

Night.burglar-by money-ACC completely rob-PASS-PAST

‘All the money was stolen by a night burglar who had broken into the inn.’

d. teikōshi-ta

fight-PAST

e. otto-wa zoku-ni koros-are-te

husband-TOP robber-by kill-PASS-and

‘Her husband’

f. mikkagoni shin-da.

three.days.later die-PAST

‘Her husband was stabbed fighting the robber and died three days later.’

g. yume-no jitsugen-mokuzennishite kanojo-wa

dream-GEN materialization-just she-TOP

otto-mo seikatsu-mo subete ushina-tteshimat-ta-noda.

husband-also livelihood-also all lose-COMPL-PAST-COP

‘As her dreams were about to materialize before her very eyes, she lost her
husband and her livelihood.’

h. mōmoku-dat-ta

blind-COP-PAST

i. kanojo-wa ikiru-tameni

she-TOP survive-in.order.to

j. goze-to nat-ta

blind.musician-PTCL become-PAST

‘Blind as she was, she became a blind musician to survive.’

k. kono atari-de shutsubotsu-suru

this around-LOC appear-NONPAST

l. Genjō-gumo-wa yume tat-are-ta

Xuanzang-spider-TOP dream cut.off-PASS-PAST

m. otto-no rei-da-toyū-koto-wa

husband-GEN ghost-COP-APP-thing-TOP

n. Ø zanjiteori-mashi-ta.

(she) know-HON-PAST

‘She knew that the Xuanzang spider that appeared around here was the ghost of
her husband who had been cut off from his dreams.’

(BCCWJ)

Recall that passive subjects tend to have their antecedents in the previous sentences more often than their active counterparts. In this sense, there is no difference between the *ni*-passive and the *niyotte*-passive. In addition, passive subjects are more likely to be carried over to the following sentences than active objects. This tendency holds of not only the *ni*-passive but also the *niyotte*-passive. Taken together, we can conclude that both *ni*-passives and *niyotte*-passives are selected when the speaker/writer intends to talk about the same referent realized as the passive subject. Yet, the degree of difference in topic continuity varies, depending on the passive types. The *ni*-passive maintains the highest degree of topic continuity whereas the *niyotte*-passive shows the intermediate degree of topic continuity in terms of cataphoric topicality. Therefore, the subject of the *ni*-passive may be seen as global topic whereas that of *niyotte*-passive may be seen as local topic.

6.7. Summary

This chapter has explored the functional distinction between the *ni*-passive and *niyotte*-passive. The present finding has demonstrated that the two by-passives are considered to be utilized in order to maintain the topic continuity by setting the topical patient in the subject position. In this meaning, there are some similarities between the *ni*-passive and the *niyotte*-passive. First, passive subjects were more topical than by-phrases in terms of the Givónian approach, showing that passivization is selected when the logical object is more topical than the logical subject. Second, both *ni*-phrases and *niyotte*-phrases are less topical than their active counterparts. To put it other way, there was no difference between the *ni*-passive and the *niyotte*-passive in terms of the discourse status of by-phrases. This fact signifies that the discourse status of by-phrases cannot explain the functional difference between the *ni*-passive and the *niyotte*-passive. Third, passive subjects are more topical than their active equivalent both in the *ni*-passive and the *niyotte*-passive. This result also cannot account for the difference in the usage between the *ni*-passive and the *niyotte*-passive. Generally speaking, two by-passives behave in the same way from a view point of information structure. Yet, there is a subtle difference between the *ni*-passive and the *niyotte*-passive in their cataphoric topicalities of passive subjects. To put it more concretely, passive subjects in the *ni*-passive are more likely to be carried over to

the succeeding discourse than these in the *niyotte*-passive.

Although the choice between the *ni*-passive and the *niyotte*-passive can be partly determined by the degree of cataphoric topicality, two by-passives go in the same direction in Japanese in the sense that the passive subjects are continuing topic. This fact suggests that the discourse status of the *ni*-passive is not so different from that of the *niyotte*-passive. Therefore, information structure seems to be unable to account for the functional distinction between the *ni*-passive and the *niyotte*-passive completely. Since information structure has weak effects on the choice between two by-passives, other constraints may take precedence over discourse constraints. Specifically, animacy may have strong effects on the choice between the *ni*-passive and the *niyotte*-passive, as proposed by Kuroda (1979) and Kuno (1986, 1990, 2004). Although there may be a weak correlation between topicality and animacy, it is possible that animacy has an independent effect on the choice between the *ni*-passive and the *niyotte*-passive. In the same way, heaviness may be related to the use of two by-passives, as observed by Seoane (2009) in English. The next chapter is devoted to the investigation of the effects of animacy and heaviness on the usages of two by-passives in Japanese.

Chapter 7

Functional Analysis of Passives in terms of Heaviness and Animacy

7.1. Overview

On the basis of the methodological preliminaries described in Section 3.4 and 3.5, the present chapter presents a functional analysis of the *ni*-passive and the *niyotte*-passive in terms of heaviness and animacy. The order of the remainder of this chapter is as follows. Section 7.2 gives an overview of previous studies related to the effects of heaviness and animacy on two by-passives in Japanese. Section 7.3 provides the corpus analysis of two by-passives. Based on the results of the analysis, section 7.4 deals with the functional distinction between the *ni*-passive and the *niyotte*-passive. Section 7.4.1 concludes that heaviness has no influence on the distinction between the *ni*-passive and the *niyotte*-passive. Section 7.4.2 discusses the interactions between animacy and passive types. Specifically, it has been observed that the *ni*-passive prefers animate subjects and the *niyotte*-passive normally selects inanimate subjects. Furthermore, by-phrases have proven to be defocussed both in the *ni*-passive and the *niyotte*-passive. In Section 7.4.3, I propose that the choice between the *ni*-passive and the *niyotte*-passive is determined by

multiple weak factors. Section 7.5 overviews the usages of the agentless passive and the *kara*-passive and raises several questions for future research. Section 7.6 provides the summary of the discussion.

7.2. Passive, Heaviness, and Animacy

Chapter 6 has attempted to inspect the effects of information structure on the choice between the *ni*-passive and the *niyotte*-passive. Consequently, it has been demonstrated that the subject of the *ni*-passive is cataphorically more topical than that of the *niyotte*-passive. However, the difference between them was subtle, suggesting that there may be other factors that are more important for the distinction between two by-passives than information structure. Therefore, the present chapter concentrates on the relationship between two by-passives and factors other than information structure. Although various factors related to the use of two by-passives are summarized in section 6.3, their criteria are subjective and it is difficult to calculate the strength of their effects on the basis of the corpus analysis. With regard to thematic roles, for example, there is no clear-cut distinction between theme and patient. Unlike made-up examples, there are many ambiguous actual examples in the corpus. Thus, the present study converges on factors that are compatible with the corpus analysis. Since the criteria for measuring heaviness

and animacy were delineated in chapter 3, the present chapter performs the corpus analysis of two by-passives in terms of heaviness and animacy.

7.2.1. Heaviness

With regard to by-passives in English such as (1), Seoane (2009) found that 70% of passive subjects were shorter than by-phrases (324 out of 463 examples). This fact signifies that the choice of the by-passive is influenced by the relative weight of the constituents at least in English. It should be noticed that ‘short-before-long’ order is easier to process than ‘long-before-short’ order in English. However, Seoane also observed that heaviness is closely interrelated with discourse factors. To put it more concretely, Seoane (2009: 373) clearly states that ‘given, definite information tends to be structurally short (consider, for example, anaphoric pronouns), while new information needs modification and specification and therefore tends to be longer’. Hence, with regard to the use of by-passives in English, it is conceivable that heaviness is a mere epiphenomenon of givenness, and vice versa. Yet, numerous studies have demonstrated that heaviness is independent of givenness (Arnold et al. 2000; Heidinger 2013; Imamura 2014, 2015a; Kizach and Balling 2013; Siewierska 1993). Therefore, in this chapter, heaviness is regarded as an independent factor that may have an impact on the choice of by-passives

in Japanese.

(1) John has been hired by my boss as her new assistant.

(Seoane 2009: 365)

Although heaviness seems to work on the choice between the by-passive and the active in English, it is unclear whether or not by-passives are strongly affected by heaviness in Japanese. Thus, it is possible that heaviness has nothing to do with the syntactic choice of by-passives in Japanese. Although the ‘long-before-short’ order is more desirable than ‘short-before-long’ order in terms of processing costs in the Japanese language (Dryer 1980; Howkins 1994; Imamura 2014, 2015a; Kondo and Yamashita 2011; Saeki 1960; Suzuki 2000; Yamashita 2002; Yamashita and Chang 2001), ‘long-before-short’ principle may be too weak to affect the use of by-passives. Furthermore, if the effect of heaviness is limited to only linear orders, it will not have a direct impact on grammatical function assignments. Note that grammatical function assignments can be separated from linear orders in Japanese. Tanaka et al. (2011: 321) states that ‘Japanese has a relatively flexible word order that allows the same grammatical function assignment to be realized in different word orders’. The grammatical function assignment related to

the by-passive can be realized in the canonical sentence (2a) or the scrambled sentence (2b). It is conceivable that by-passives are not influenced by heaviness in Japanese, because passivization is relevant to grammatical function assignments but not to the determination of the linear order.

- (2) a. ryōshi-ga bōto-niyotte hakob-are-ta.
 fisherman-NOM boat-by carry-PASS-PAST
 ‘The fisherman was carried by the boat.’
- b. bōto-niyotte ryōshi-ga hakob-are-ta.
 boat-by fisherman-NOM carry-PASS-PAST
 ‘By the boat, the fisherman was carried.’

(Tanaka et al. 2011: 321)

On the other hand, heaviness may have an influence on the use of by-passives in Japanese. In particular, if heaviness works on the level of grammatical function assignments, passivization will be affected by heaviness. Moreover, heaviness may have effects on the choice of by-passives because there is a subtle difference in length between the *ni*-phrase and the *niyotte*-phrase. Note that *niyotte*-phrases are longer than *ni*-phrases;

the length of *niyotte* is four morae and that of *ni* is only one mora. The choice of by-passives may follow ‘long-before-short’ principle in order to facilitate the processing. However, heaviness may affect the use of by-passives if and only if one constituent is much heavier than the other constituent. It is presumed here that heaviness is related not only to linear orders but also to grammatical function assignments. Since by-passives are marked options (Dixon and Aikhenvald 1997, 2000; Givón 1979, 1990; Haspelmath 1990; Imamura, Helgason, and Koizumi 2013; Keenan 1985; Maratsos 1978; Shibatani 1985; Svaltvik 1966), passivization itself is expected to incur the higher processing cost than its canonical counterpart (Gordon and Chan 1995). Recall that heaviness influences linear orders in order to reduce the processing cost (Hawkins 1994). Under these presuppositions, since changing voice requires high processing cost, heaviness only works when its merit offsets the demerit of changing voice. Thus, heaviness may be at work only when one constituent is extremely heavier than the other one.

In sum, it remains obscure so far whether heaviness has an influence on the use of by-passives in Japanese. To my knowledge, there have been no studies on the relation of heaviness to Japanese by-passives. Is heaviness essential for the usage of by-passives in Japanese? Can heaviness contribute to the distinction between the *ni*-passive and the *niyotte*-passive? The present chapter makes an attempt to address these questions via the

corpus analysis.

7.2.2. Animacy

Theoretically, it has been proposed that animacy has a great influence on the choice between the *ni*-passive and the *niyotte*-passive (Hoshi 1991, 1994, 1999; Inoue 1976; Iwasaki 2002; Kuno 1986, 1990; Kuroda 1979; Muraki 1991; Takami 2011; Yamaguchi 2001). Specifically, Inoue (1976) claims that the *ni*-passive demands the animate subject because it reflects the direct influence of the action performed by the agent of the subject whereas there is no such constraint in the *niyotte*-passive. Therefore, the *niyotte*-passive licenses inanimate subjects easily, while the *ni*-passive is normally inconsistent with inanimate subjects. In (3), for example, the animate subject *Tom* is directly influenced by the action conducted by the agent *John*. Thus, only the *ni*-passive sentence (3a) is acceptable because the subject is the animate noun. In contrast, in (4), the inanimate subject *oshiro* ‘castle’ cannot receive the direct influence of the action performed by *ōsama* ‘king’ because it cannot ‘feel’ such an influence according to Inoue. Thus, only the *niyotte*-passive sentence (4b) is acceptable because the subject is the inanimate noun.

(3) a. *Ni*-passive

Tom-ga John-ni ke-rare-ta.

Tom-NOM John-by kick-PASS-PAST

‘Tom was kicked by John.’

b. *Niyotte*-passive

*Tom-ga John-niyotte ke-rare-ta.

Tom-NOM John-by kick-PASS-PAST

‘Tom was kicked by John.’

(4) a. *Ni*-passive

*oshiro-ga ōsama-ni tate-rare-ta.

castle-NOM king-byTom build-PASS-PAST

‘The castle was built by the king.’

b. *Niyotte*-passive

oshiro-ga ōsama-niyotte tate-rare-ta.

castle-NOM king-byTom build-PASS-PAST

‘The castle was built by the king.’

(Yamaguchi 2001: 229)

Moreover, Kuroda (1979) argues that the *ni*-passive has an external θ -role and

requires that the subject be an affectee whereas the *niyotte*-passive does not assign an external θ -role and there is no θ -requirement for the subject. Let us have a look at Kuroda's example illustrated in (5). In (5), the subject is the abstract referent, *Fermat no teiri* 'Fermat's theorem', which cannot be construed as an affectee, something that is acted upon or influenced. Thus, the passive subject in (5a) violates the selectional restriction imposed by the *ni*-passive. The *ni*-passive sentence (5a) is ruled out because the passive subject must be affected. By contrast, the *niyotte*-passive sentence (5b) is acceptable because there is no selectional restriction imposed on the subject. The *niyotte*-passive does not require an affected subject. Building on Kuroda's proposal, Hoshi (1994) insists that the *ni*-passive assigns experiencer to the subject whereas the *niyotte*-passives does not assign an external θ -role. According to his judgement, the subject *John* in (6a) bears an experiencer role, as illustrated by his translation. On the other hand, the passive subject *John* does not receive an experiencer role in the *niyotte*-passive sentence (6b). In the same fashion, the verb *shinu* 'die' is compatible with the *ni*-passive sentence (7a) but not with the *niyotte*-passive sentence (7b) because it assigns an experiencer role to the subject.

(5) a. *Ni*-passive

*Fermat no teiri-ga John-ni shōmeis-are-ta.

Fermat-GEN theorem-NOM John-by prove-PASS-PAST

‘Fermat’s theorem was proven by John.’

b. *Niyotte*-passive

Fermat no teiri-ga John-niyotte shōmeis-are-ta.

Fermat-GEN theorem-NOM John-by prove-PASS-PAST

‘Fermat’s theorem was proven by John.’

(Kuroda 1979: 330-1)

(6) a. *Ni*-passive

John-ga Mary-ni nagu-rare-ta.

John-NOM Mary-by punch-PASS-PAST

‘John_i was affected by Mary’s punching him_i.’

b. *Niyotte*-passive

John-ga Mary-niyotte nagu-rare-ta.

John-NOM Mary-by punch-PASS-PAST

‘John was punched by Mary.’

(Hoshi 1994: 157-9)

(7) a. *Ni*-passive

John-ga kodomo-ni shin-are-ta.

John-NOM child-by die-PASS-PAST

‘John_i was affected by his_i/someone’s child’s dying.’

b. *Niyotte*-passive

*John-ga kodomo-niyotte shin-are-ta.

John-NOM child-by die-PASS-PAST

(Hoshi 1994: 159-60)

Furthermore, Kuno (1986, 1990) argues that the *ni*-passive is sensitive to empathy while the *niyotte*-passives is not. To put it more concretely, the subject in the *ni*-passive must be something with which the speaker identifies him- or herself. It should be noted that the speaker can express empathy with an animate noun more efficiently than with an inanimate noun. Hence, the passive subject tends to be more animate than the *ni*-phrase in the *ni*-passive. In the same vein, Takami (2011) observed that the *ni*-passive sentence (8a) is unacceptable because the speaker emphasizes with the *ni*-phrase *haha* ‘mother’ more strongly than with the inanimate subject *kono kutsu* ‘this pair of shoes’. This situation is undesirable for the *ni*-passive in the sense that the *ni*-phrase is ranked higher

than the subject in terms of the human empathy hierarchy. In contrast, the inanimate subject *kanbu* ‘affected area’ is permitted in the *niyotte*-passive sentence (8b). When the speaker empathizes with the inanimate subject, he or she describes the event from a speaker’s neutral point of view. In such a situation, the agent is normally marked by a *niyotte*-phrase, not by a *ni*-phrase. Generally speaking, therefore, animate subjects correlate with the *ni*-passive and inanimate subjects are consistent with the *niyotte*-passive.

(8) a. *Ni*-passive

*kono kutsu-wa yoku haha-ni hak-are-tei-ta.

this shoe-TOP frequently mother-by wear-PASS-PROG-PAST

‘This pair of shoes was frequently worn by my mother.’

b. *Niyotte*-passive

kanbu-ga senmoni-niyotte nyūnenni mi-rare-ta.

affected.area-NOM medical.specialist-by elaborately examine-PASS-PAST

‘The affected area was examined elaborately by a medical specialist.’

(Takami 2011: 28-9)

To summarize the above discussion, the usage of two by-passives in Japanese depends to a large degree on animacy. To be more concrete, the *ni*-passive is sensitive to the distinction between animate and inanimate properties of the subject whereas the *niyotte*-passive is not. Generally speaking, animate referents are more consistent with the *ni*-passive than with the *niyotte*-passive while inanimate referents are more compatible with the *niyotte*-passive than with the *ni*-passive. Yet, there are cases where the animacy constraint makes the wrong prediction about the acceptability of the *ni*- and *niyotte*-passives. Let take a look at the example (9). The passive subject is an inanimate noun *kabin* ‘vase’, but it is more compatible with the *niyotte*-passive than with the *ni*-passive. Verbs of change of state can form a *ni*-passive even when the subject is an inanimate referent. Note that *kowasu* ‘break’ belongs to verbs of change of state. Thus, the inanimate subject is allowed in the *ni*-passive in (9).

- (9) *kabin-ga* *John-ni/?niyotte* *kowas-are-ta.*
 vase-NOM John-by break-PASS-PAST
 ‘The vase was broken by John.’

Yamaguchi (2001: 230)

Moreover, Kuno (1983) and Takami (1995, 2011) observed that the inanimate subject can be used for the *ni*-passive when adversative or benefactive meaning is conveyed to the hearer. In (10a), the speaker suffered from the event that *This paper balloon was crushed by Taro*. *Kamifūsen* ‘paper balloon’ may belong to the speaker. Anyway, the sentence (10a) has an adversative meaning and thus be acceptable, although the inanimate subject *kamifūsen* is used for the *ni*-passive. On the other hand, the sentence (10b) has a benefactive meaning because the verb *shōnin* ‘approve’ itself has a positive meaning. This type of verb expresses the benefit of the event resulting from the activity. Although the passive subject is the inanimate noun *genan* ‘original plan’, the *ni*-passive sentence (10b) is accepted because it conveys the benefactive meaning.

(10) a. kono kamifūsen-wa Taro-ni tsubus-are-ta.

this paper.balloon-TOP Taro-by crush-PASS-PAST

‘This paper balloon was crushed by Taro.’

b. genan-wa Yamada-kachō-ni shōnins-are-ta.

original.plan-TOP Yamada-section.head-by approve-PASS-PAST

‘The original plan was approved by Mr. Yamada, who is the head of a section.’

(Takami 1995: 96-7)

Furthermore, Takami (1995, 2011) found that inanimate subjects are permitted in the *ni*-passive when the passive subject is characterized by the *ni*-phrase. In (11a), the passive subject *pen* cannot be characterized by the event *Taro used this pen* because *Taro* is an ordinary person. In contrast, in (11b), the passive subject *pen* is characterized by the event that *Charles Dickens repeatedly used this pen* because *Charles Dickens* is a famous British novelist. *This pen* becomes famous by the fact that *Charles Dicken* used it again and again. Thus, the passives *pen* in (11b) is considered to be characterized by the rest of the sentence. The contrast between (11a) and (11b) indicates that inanimate subjects are accepted when the passive subject is characterized by the *ni*-phrase in the *ni*-passive.

(11) a. * kono-pen-wa Taro-ni shiyōs-are-ta.

 this-pen-TOP Taro-by use-PASS-PAST

 ‘This was used by Taro.’

b. kono-pen-wa igirisu-no-bungō Charles Dickens-ni

 this-pen-TOP England-GEN-a.great.novelist Charles Dickens-by

 nandomo shiyōs-are-ta.

 again.and.again use-PASS-PAST

‘This pen was used again and again by Charles Dickens, a great novelist in England.’

(Takami 1995: 99)

Although animacy contributes to the distinction between the *ni*-passive and the *niyotte*-passive, there are many crucial counter examples, as illustrated in (9), (10), and (11). This fact signifies that animacy constraint is not an absolute factor, showing that multiple factors should be taken into consideration in order to account for the difference between the *ni*-passive and the *niyotte*-passive. The related question is how strongly animacy constraint influences the choice between two by-passives. In order to address this question, the present corpus analysis calculates the strength of animacy constraint on the basis of the frequency.

7.3. Corpus Analysis of *Ni*- and *Niyotte*- Passives in Heaviness and Animacy

7.3.1. Basic Purposes

My objective in the present corpus analysis is to calculate the effects of heaviness and animacy on the choice between the *ni*-passive and the *niyotte*-passive. There are three

questions related to this analysis. The first question is whether heaviness can be a major determinant of by-passives in Japanese. If heaviness affects the choice of two by-passives, the second question will arise: does heaviness have an influence on the the *ni/niyotte* distinction? The third question is how strongly animacy affects the choice of the by-passives.

7.3.2. Method

7.3.2.1. Corpus Data

BCCWJ is used so as to collect related examples (see 3.1.to details).

7.3.2.2. Materials

The materials comprise the same condition utilized in chapter 6, as shown in (12). Note that the active conditions (12 e, f) are added to the analysis as a baseline.

(12) a. $S_{\text{NOM}}NP_{\text{Ni}}V$

b. $S_{\text{TOP}}NP_{\text{Ni}}V$

c. $S_{\text{NOM}}NP_{\text{Niyotte}}V$

d. $S_{\text{TOP}}NP_{\text{Niyotte}}V$

e. $S_{NOM}O_{ACC}V$

f. $S_{TOP}O_{ACC}V$

7.3.2.3. Procedures

In the present analysis, the same examples utilized in chapter 6 was reused. Regarding the measurement of heaviness and animacy, this analysis conformed to the criteria exemplified in section 3.4 and 3.5. There were three steps in the present corpus analysis. Firstly, the morae of the passive subjects and the by-phrases (*ni*-phrase or *niyotte*-phrase) were calculated for passive conditions (12a, b, c, and d). For the active conditions (12e, f), the data utilized in chapter 5 were reused. Secondly, both the passive subjects and the by-phrases were classified into animate or inanimate. Thirdly, a series of t-tests were performed for heaviness and Chi-square tests were conducted for calculating the strength of animacy.

7.3.3. Results

Table 7.1 is the summary of the results in terms of heaviness, showing the average value and the standard deviation of morae for each condition.

Table 7.1 Morae for each sentence type

Sentence	Grammatical	Morae	
Types	Functions	M	SD
$S_{NOM}NP_{Ni}V$	S	10.39	8.23
	by	7.49	4.28
$S_{TOP}NP_{Ni}V$	S	8.37	6.87
	by	8.71	5.28
$S_{NOM}NP_{Niyotte}V$	S	14.69	11.01
	by	12.91	6.23
$S_{TOP}NP_{Niyotte}V$	S	11.86	9.78
	by	15.25	7.09
$S_{NOM}O_{ACC}V$	S	10.68	10.92
	O	10.33	10.82
$S_{TOP}O_{ACC}V$	S	8.38	5.88
	O	11.35	8.97

A series of t-tests were conducted for the average values of morae. With regard to the morae within by-passives, passive subjects were significantly longer than by-phrases in $S_{NOM}NP_{Ni}V$ ($t(198)=3.13, p<.01$) and passive subjects were significantly shorter than

by-phrases in $S_{\text{TOPNP}_{\text{Niyotte}}}\text{V}$ ($t(198)=2.81, p<.01$), but there was no significant difference between passive subjects and by-phrases in $S_{\text{TOPNP}_{\text{Ni}}}\text{V}$ and $S_{\text{NOMNP}_{\text{Niyotte}}}\text{V}$.

Regarding the morae of the logical objects, $S_{\text{NOMNP}_{\text{Niyotte}}}\text{V}$ was significantly longer than $S_{\text{NOMNP}_{\text{Ni}}}\text{V}$ ($t(198)=3.13, p<.01$), $S_{\text{NOMO}_{\text{ACC}}}\text{V}$ ($t(198)=2.82, p<.01$), and $S_{\text{TOPO}_{\text{ACC}}}\text{V}$ ($t(198)=2.35, p<.05$), but there was no significant difference among $S_{\text{NOMNP}_{\text{Ni}}}\text{V}$, $S_{\text{TOPNP}_{\text{Niyotte}}}\text{V}$, $S_{\text{NOMO}_{\text{ACC}}}\text{V}$, and $S_{\text{TOPO}_{\text{ACC}}}\text{V}$. In addition, there were marginal differences between $S_{\text{NOMNP}_{\text{Ni}}}\text{V}$ and $S_{\text{TOPNP}_{\text{Ni}}}\text{V}$ ($t(198)=1.88, p=.06$) and between $S_{\text{NOMNP}_{\text{Niyotte}}}\text{V}$ and $S_{\text{TOPNP}_{\text{Niyotte}}}\text{V}$ ($t(198)=1.92, p<.06$). Furthermore, $S_{\text{TOPNP}_{\text{Ni}}}\text{V}$ were significantly shorter than $S_{\text{NOMNP}_{\text{Niyotte}}}\text{V}$ ($t(198)=4.87, p<.01$) and $S_{\text{TOPNP}_{\text{Niyotte}}}\text{V}$ ($t(198)=2.92, p<.01$). However, there was no significant difference among $S_{\text{TOPNP}_{\text{Ni}}}\text{V}$, $S_{\text{NOMO}_{\text{ACC}}}\text{V}$, and $S_{\text{TOPO}_{\text{ACC}}}\text{V}$.

Concerning the morae of the logical subjects, $S_{\text{NOMNP}_{\text{Ni}}}\text{V}$ was significantly shorter than $S_{\text{NOMNP}_{\text{Niyotte}}}\text{V}$ ($t(198)=7.19, p<.01$), $S_{\text{TOPNP}_{\text{Niyotte}}}\text{V}$ ($t(198)=9.40, p<.01$), and $S_{\text{NOMO}_{\text{ACC}}}\text{V}$ ($t(198)=2.72, p<.01$). However, there was no significant difference among $S_{\text{NOMNP}_{\text{Ni}}}\text{V}$, $S_{\text{NOMO}_{\text{ACC}}}\text{V}$, and $S_{\text{TOPO}_{\text{ACC}}}\text{V}$. Furthermore, $S_{\text{TOPNP}_{\text{Ni}}}\text{V}$ was significantly shorter than $S_{\text{NOMNP}_{\text{Niyotte}}}\text{V}$ ($t(198)=5.16, p<.01$) and $S_{\text{TOPNP}_{\text{Niyotte}}}\text{V}$ ($t(198)=7.42, p<.01$). Moreover, $S_{\text{NOMNP}_{\text{Niyotte}}}\text{V}$ was significantly shorter than $S_{\text{TOPNP}_{\text{Niyotte}}}\text{V}$ ($t(198)=2.49, p<.05$) but significantly longer than $S_{\text{TOPO}_{\text{ACC}}}\text{V}$ ($t(198)=5.30, p<.01$). The difference

$S_{NOMNP_{Niyotte}V}$ and $S_{NOMO_{ACC}V}$ was only marginally significant ($t(198)=1.78, p<.08$).

Finally, $S_{TOPNP_{Niyotte}V}$ was significantly longer than $S_{NOMO_{ACC}V}$ ($t(198)=3.51, p<.01$)

and $S_{TOPO_{ACC}V}$ ($t(198)=7.48, p<.01$).

Table 7.2 Tokens distribution of the NPs in terms of animacy

Sentence	Grammatical	Number	
Types	Functions	Animate	Inanimate
$S_{NOMNP_{Ni}V}$	S	64	36
	by	63	37
$S_{TOPNP_{Ni}V}$	S	66	34
	by	65	35
$S_{NOMNP_{Niyotte}V}$	S	19	81
	by	49	51
$S_{TOPNP_{Niyotte}V}$	S	9	91
	by	36	64
$S_{NOMO_{ACC}V}$	S	83	17
	O	9	91
$S_{TOPO_{ACC}V}$	S	90	10

The proportion of animate and inanimate nouns in by-passive sentences and active sentences is shown in Table 7.2. A series of chi-square statistical tests were performed on the distribution. Within by-passives, the frequency of animate nouns was significantly higher than that of inanimate nouns in the subject of $S_{\text{NOMNP}_{\text{Ni}}\text{V}}$ ($\chi^2(1)=7.84, p<.01$) and $S_{\text{TOPNP}_{\text{Ni}}\text{V}}$ ($\chi^2(1)=10.24, p<.01$) and in the by-phrase of $S_{\text{NOMNP}_{\text{Ni}}\text{V}}$ ($\chi^2(1)=6.76, p<.01$) and $S_{\text{TOPNP}_{\text{Ni}}\text{V}}$ ($\chi^2(1)=9.00, p<.01$). In contrast, the frequency of inanimate nouns was significantly higher than that of animate nouns in the subject of $S_{\text{NOMNP}_{\text{Niyotte}}\text{V}}$ ($\chi^2(1)=38.44, p<.01$) and $S_{\text{TOPNP}_{\text{Niyotte}}\text{V}}$ ($\chi^2(1)=67.40, p<.01$) and in the by-phrase of $S_{\text{TOPNP}_{\text{Niyotte}}\text{V}}$ ($\chi^2(1)=7.84, p<.01$). However, animate nouns occurred as frequently as inanimate nouns in the by-phrase of $S_{\text{NOMNP}_{\text{Niyotte}}\text{V}}$ ($\chi^2(1)=0.04, p=.84$). In terms of the frequency of animate nouns, by-phrases were higher than subjects in $S_{\text{NOMNP}_{\text{Niyotte}}\text{V}}$ ($\chi^2(1)=13.23, p<.01$) and $S_{\text{TOPNP}_{\text{Niyotte}}\text{V}}$ ($\chi^2(1)=16.20, p<.01$) but there was no significant difference between the subject and the by-phrase in $S_{\text{NOMNP}_{\text{Ni}}\text{V}}$ ($\chi^2(1)=0.01, p<.93$) and $S_{\text{TOPNP}_{\text{Ni}}\text{V}}$ ($\chi^2(1)=0.01, p<.93$). In terms of the frequency of inanimate nouns, subjects were higher than by-phrases in $S_{\text{NOMNP}_{\text{Niyotte}}\text{V}}$ ($\chi^2(1)=6.82, p<.01$) and $S_{\text{TOPNP}_{\text{Niyotte}}\text{V}}$ ($\chi^2(1)=4.70, p<.05$), but there was no significant difference between the

subject and the by-phrase in $S_{\text{NOMNP}_{\text{Ni}}\text{V}}$ ($\chi^2(1)=0.01, p<.91$) and $S_{\text{TOPNP}_{\text{Ni}}\text{V}}$ ($\chi^2(1)=0.01, p<.90$).

Next, a chi-square test reached statistical significance on the distribution of the logical object ($\chi^2(5)=193.20, p<.01$). Therefore, a residual analysis was conducted. Consequently, it was demonstrated that the observed frequency of the animate nouns was significantly higher than the expected frequency in $S_{\text{NOMNP}_{\text{Ni}}\text{V}}$ ($r=8.45, p<.01$) and $S_{\text{TOPNP}_{\text{Ni}}\text{V}}$ ($r=8.93, p<.01$). In addition, the observed frequency of the animate nouns was lower than expected frequency in $S_{\text{NOMNP}_{\text{Niyotte}}\text{V}}$ ($r=-2.41, p<.05$), $S_{\text{TOPNP}_{\text{Niyotte}}\text{V}}$ ($r=-4.83, p<.01$), $S_{\text{NOM O}_{\text{ACC}}\text{V}}$ ($r=-4.83, p<.01$), and $S_{\text{TOP O}_{\text{ACC}}\text{V}}$ ($r=-5.31, p<.01$). Furthermore, the inanimate noun occurred less frequently than the expected frequency in $S_{\text{NOMNP}_{\text{Ni}}\text{V}}$ ($r=-8.45, p<.01$) and $S_{\text{TOPNP}_{\text{Ni}}\text{V}}$ ($r=-8.93, p<.01$). Moreover, the inanimate noun occurred more frequently than the expected frequency in $S_{\text{NOMNP}_{\text{Niyotte}}\text{V}}$ ($r=2.41, p<.05$), $S_{\text{TOPNP}_{\text{Niyotte}}\text{V}}$ ($r=4.83, p<.01$), $S_{\text{NOM O}_{\text{ACC}}\text{V}}$ ($r=4.83, p<.01$), and $S_{\text{TOP O}_{\text{ACC}}\text{V}}$ ($r=5.31, p<.01$).

For the logical subject, a residual analysis was also performed because the results of the chi-square test came out statistically significant ($\chi^2(5)=89.22, p<.01$). The observed frequency of animate nouns was significantly lower than the expected frequency in $S_{\text{NOMNP}_{\text{Niyotte}}\text{V}}$ ($r=-3.51, p<.01$) and $S_{\text{TOPNP}_{\text{Niyotte}}\text{V}}$ ($r=-6.48, p<.01$). In contrast, the

observed frequency of animate nouns was significantly higher than the expected frequency in $S_{\text{NOM}} O_{\text{ACC}} V$ ($r=4.27, p<.01$) and $S_{\text{TOP}} O_{\text{ACC}} V$ ($r=5.87, p<.01$). However, there was no significant difference in the number of animate nouns or inanimate nouns between the observed frequency and the expected frequency in $S_{\text{NOM}} NP_{\text{Ni}} V$ and $S_{\text{TOP}} NP_{\text{Ni}} V$.

7.4. Discussion

7.4.1. Passivization and Heaviness

In Japanese, there is a preference for long constituents to come before short ones (Dryer 1980; Hawkins 1994; Imamura 2014, 2015a; Kondo and Yamashita 2011; Saeki 1960; Suzuki 2000; Yamashita 2002; Yamashita and Chang 2001). According to Hawkins (1994), the ‘long-before-short’ order is selected in order to reduce the processing costs. Therefore, if heaviness has an influence on passivization, passive subjects are considered to be generally heavier than by-phrases in Japanese. However, the results of the present corpus analysis have revealed that passive subjects are not heavier than by-phrases as a whole. To begin with, the passive subject was significantly shorter than the *niyotte*-phrase in $S_{\text{TOP}} NP_{\text{Niyotte}} V$, which shows that the short constituent tends to come before the long one. This fact clearly contradicts the ‘long-before-short’ principle. Besides, there was no

difference in the length between the passive subject and the by-phrase in $S_{TOP}NP_{Ni}V$ and $S_{NOM}NP_{Niyotte}V$. Only $S_{NOM}NP_{Ni}V$ follows the ‘long-before-short’ principle. Taken together, the ‘long-before-short’ principle cannot give a unified account of the two by-passives.

In addition, heaviness seems not to contribute to the distinction between the *ni*-passive and the *niyotte*-passive. There is no general tendency that can distinguish the *ni*-passive from the *niyotte*-passive in terms of heaviness. First, there was no common properties between $S_{NOM}NP_{Ni}V$ and $S_{TOP}NP_{Ni}V$ in terms of morae; the passive subject was significantly longer than the *ni*-phrase in $S_{NOM}NP_{Ni}V$ whereas there was no significant difference between the subject and the *ni*-phrase in $S_{TOP}NP_{Ni}V$. In the same vein, there was no similarities between $S_{NOM}NP_{Niyotte}V$ and $S_{TOP}NP_{Niyotte}V$ in terms of morae; the passive subject was as long as the *niyotte*-phrase in $S_{NOM}NP_{Niyotte}V$, while the passive subject was significantly shorter than the *niyotte*-phrase in $S_{TOP}NP_{Niyotte}V$. Taken together, every by-passive construction behaved differently from each other. Although by-phrases were longer in the *niyotte*-passive than in the *ni*-passive, this result must have derived from the difference in the lengths between *ni* and *niyotte* themselves. Therefore, I conclude that heaviness does not have a direct impact on the choice of by-passives.

The question arises here about why heaviness has no influence on the use of by-

passives. It has been demonstrated that passives are syntactically marked constructions across languages (Greenberg 1966; Trask 1979). In typology, Keenan (1985: 247) points out that ‘some languages have no passives’. Furthermore, passivization requires higher processing costs than its canonical equivalent (Gordon and Chan 1995). Taken together, passivization is a costly operation because it is a marked option. Recall that the ‘long-before-short’ order is selected in order to facilitate the processing. Considering these facts, changing voice due to the heaviness is not an efficient choice because passivization itself is a highly costly option.

7.4.2. Passivization and Animacy

Based on grammatical judgements, it has been observed that the *ni*-passive normally takes an animate subject whereas the *niyotte*-passive favors an inanimate subject (Hoshi 1991, 1994, 1999; Inoue 1976; Iwasaki 2002; Kuno 1986, 1990; Kuroda 1979; Muraki 1991; Takami 2011; Yamaguchi 2001). However, it is possible that introspective approaches do not reflect the real property of by-passives because they use only made-up examples. In addition, they cannot measure the strength of the interrelation between animacy and passive types with precision. The grammatical judgements include only qualitative data, not quantitative data, and thus do not take the frequency into consideration. This

shortcoming has been overcome in the present study by using the corpus analysis and the degree of animacy effects was captured with precision. First, animate subjects occurred more frequently in the *ni*-passive than in the *niyotte*-passive. Second, the frequency of inanimate subjects was higher in the *niyotte*-passive than in the *ni*-passive. These results support the claim that the *ni*-passive prefers animate subjects and the *niyotte*-passive favors inanimate subjects. However, it has been demonstrated that the animacy constraint is not an absolute factor because there were many counter examples in my data. For example, the *ni*-passive sentence (13a) licenses the inanimate subject *kono uta* ‘this song’, although inanimate subjects are generally incompatible with *ni*-passive sentences. According to Takami (2011:30), when the *ni*-phrase is generic and has no perspective, the *ni*-passive permits an inanimate subject. Since the *ni*-phrase does not have its perspective in such a situation, the *ni*-passive does not violate the empathy hierarchy, which requires the subject to be more empathetic than non-subjects. In (13a), the *ni*-phrase *minshū* ‘people’ is a generic noun. Thus, the sentence (13a) does not transgress the empathy hierarchy and is hence acceptable. In the same fashion, the *niyotte*-passive sentence (13b) takes the animate noun *mentā* ‘mentor’ as its subject, although the *niyotte*-passives is considered to be more consistent with inanimate nouns than with animate nouns. The animacy constraints are frequency preferences in the usage of by-passives, not predictive

principles.

(13) a. *Ni*-passive

kono uta-ga minshū-ni oboe-rare-ta.

this song-NOM people-by remember-PASS-PAST

‘This song was remembered by people.’

b. *Niyotte*-passive

mentā-ga genrōin-niyotte shimekoros-are-ta.

mentor-NOM senate-by strangle-PASS-PAST

‘The mentor was strangled by the senator.’

(BCCWJ)

With regard to the animacy of the logical objects (subjects in by-passive sentences and objects in active sentences), it has been demonstrated that the *ni*-passive is more animate than the *niyotte*-passive and its active counterpart. Note that the number of animate logical subjects in the *ni*-passive sentences $S_{NOM}NP_{Ni}V$ and $S_{TOP}NP_{Ni}V$ (130 out of 200 examples) was higher than in the *niyotte*-passive sentences $S_{NOM}NP_{Niyotte}V$ and $S_{TOP}NP_{Niyotte}V$ (28 out of 200 examples) and the active sentences $S_{NOM}O_{ACC}V$ and

STOP_{TOP}O_{ACC}V (16 out of 200 examples). This result also supports the view that the animacy constraint is not an absolute factor that determines the choice between the *ni*-passive and the *niyotte*-passive completely. Rather, there seems to be a one-way restriction from the *niyotte*-passive to inanimate referents. More concretely, if the *niyotte*-passive is selected, the passive subject tends to be an inanimate referent (172 out of 200 examples). However, the inanimate subject does not guarantee that it belongs to the *niyotte*-passive. It can be the subject of the *ni*-passive. These relationships are weak implicational universals, which means that if a language has property X, then it also has property Y, but not vice versa. Considering *niyotte*-passives and inanimate referents from a view point of implicational universals, the *niyotte*-passive is compared to property X and inanimate referents correspond to property Y. In contrast, it seems that the *ni*-passive is freer than the *niyotte*-passive in terms of animacy. In fact, the *ni*-passive subject included 130 animate referents and 70 inanimate referents, while the *niyotte*-passive subject contained 172 animate referents and only 28 inanimate referents. This contrast can partly explain the distinction between the *ni*-passive and the *niyotte*-passive.

Having a look at two by-passives from a view point of animacy, animate subjects almost always belong to the *ni*-passive (130 out of 158 examples). In other words, if an animate referent is chosen as the passive subject, it tends to be realized as the *ni*-passive,

not as the *niyotte*-passive. This relationship is also a weak implicational universal in the sense that there is a one-way restriction from animate subjects to *ni*-passives. By contrast, inanimate referents can be realized as passive subjects both in the *ni*-passive and the *niyotte*-passive relatively freely. Indeed, 70 examples (28.9%) are realized as the *ni*-passive and 172 examples (71.1%) are realized as the *niyotte*-passive. Taking the fact that inanimate subjects are more compatible with the *niyotte*-passive, the *ni*-passive seems to be made use of due to pragmatic reasons. The *ni*-passive sentence (14a), for example, is preferable to the *niyotte*-passive sentence (14b) because of the following reasons. To begin with, the main verb *appaku* ‘press’ is transitive but the logical subject *onaka* ‘belly’ is not a typical agent. Thus, passivization is chosen in order to weaken the transitive meaning. However, the *niyote*-passive is not allowed when the verb is one with low transitivity (Oshima 2003). In consequence, the *ni*-passive is selected although the passive subject is inanimate.

(14) a. *Ni*-passive

i-ga	onaka-ni	appakus-are-teiru.
stomach-NOM	belly-by	press-PASS-PROG

‘I have a pressing feeling in my stomach.’

b. *Niyotte*-passive

?i-ga onaka-niyotte appakus-are-teiru.

stomach-NOM belly-by press-PASS-PROG

‘I have a pressing feeling in my stomach.’

(adapted from BCCWJ)

For the animacy of the logical subjects (by-phrases in by-passive sentences and subjects in active sentences), it has been demonstrated that the *ni*-passive is more consistent with animate referents than the *niyotte*-passive but less compatible with animate referents than its active equivalent. Indeed, the frequency of animate logical subjects in the *ni*-passive sentences $S_{\text{NOM}}NP_{\text{Ni}}V$ and $S_{\text{TOP}}NP_{\text{Ni}}V$ was higher in the *niyotte*-passive sentences $S_{\text{NOM}}NP_{\text{Niyotte}}V$ and $S_{\text{TOP}}NP_{\text{Niyotte}}V$ but lower than in the active sentences $S_{\text{NOM}}O_{\text{ACC}}V$ and $S_{\text{TOP}}O_{\text{ACC}}V$. With regard to the *niyotte*-passive, the gap in animacy was smaller in the by-phrase than in the passive subject. For example, there was no significant difference in frequency between animate nouns and inanimate nouns in $S_{\text{NOM}}NP_{\text{Niyotte}}V$. There seem to be no strong preferences for the choice of animate or inanimate nouns in by-phrases of *niyotte*-passives. Unlike passive subjects, by-phrases are not restricted by animacy in the *niyotte*-passive; with regard to the choice between

animate nouns and inanimate nouns, the difference in frequency was at chance level in the *niyotte*-passive.

Let us focus on the effects of the voice change from active to passive. First, the *ni*-passive is usually chosen when the passive subject is more animate than the active object and the *ni*-phrase is less animate than the active subject. In other words, the logical object in the *ni*-passive becomes more animate through the passivization. By contrast, the logical subject becomes less animate via the change of the voice from active to the passive. Second, the *niyotte*-passive is normally selected when the passive subject is as inanimate as the active object and the *niyotte*-phrase is less animate than the active subject. Surprisingly, the voice change from the active to the *niyotte*-passive does not influence the animacy of the logical subject; passive subjects in the *niyotte*-passive were as inanimate as direct objects in active sentences. It seems that both the direct object in the active sentence and the passive subject in the *niyotte*-passive sentence favor inanimate referents. On the other hand, the logical subject becomes less animate by using the *niyotte*-passive. Focusing on the similarities between the *ni*-passive and the *niyotte*-passive, by-phrases were less animate than their canonical counterparts. This result coincides with the outcome of the corpus analysis shown in chapter 6. In chapter 6, it was revealed that by-phrases were less topical than subjects in active sentences. Taking these

facts into consideration, by-passives usually ‘defocus’ the logical subject because by-phrases are less topical and animate than active subjects.

From a view point of markedness, the *ni*-passive seems to be more unmarked than the *niyotte*-passive. The first reason is that ‘animate-before-inanimate’ order holds of the *ni*-passive in general but is not normally applied for the *niyotte*-passive. Note that there is a preference for animate constituents to come before inanimate ones (Bock et al. 1992; McDonald et al. 1993; Thompson 1990; Tanaka et al. 2011). The *niyotte*-passive generally disobeys ‘animate-before-inanimate’ order because inanimate subjects tend to come first. Taken together, the *ni*-passive is more preferable to the *niyotte*-passive in terms of the order between animate entities and inanimate ones. The second reason depends on the empathy hierarchies proposed by Kuno (1986, 1990, 2004). According to Kuno (2004: 316), ‘it is more difficult for the speaker to emphasize with a non-human animate object than with a human, and more difficult to emphasize with an inanimate object than with an animate object’ and ‘it is easier for the speaker to empathize with the referent of the subject than with that of any other NP in the sentence’. Therefore, it is easier to empathize with animate subjects than with inanimate subjects. In addition, Takami (2011: 30) maintains that the *niyotte*-passive expresses an objective situation from the view point of the inanimate subject. On the other hand, the *ni*-passive normally describes the event from

the view point of the animate subject according to Takami (1995: 92). Since it is easier to empathize with animate subjects than with inanimate subjects, the *ni*-passive is expected to be more natural than the *niyotte*-passive in terms of empathy. The third reason is based on the historical development of the two by-passives. Building on Matsushita (1930), Mitsuya (1908), and Yamada (1908), Kinsui (1997:762) proposed that ‘the *ni*-passive is the passive indigenous to Japanese and the *niyotte*-passive arose through the influence of foreign translation’. To be concrete, the *niyotte*-passive is considered to come into existence through the word-for-word translation of *door*-passives in Dutch. Because of the above mentioned three reasons, the *niyotte*-passive is considered to be more marked than the *ni*-passive, as proposed by Imamura, Helgason, and Koizumi (2013). It has been observed that unmarked constructions can be used appropriately in wider contexts than marked ones (Aissen 1992; Comrie 1988; Imamura, Sato, and Koizumi 2014, 2016; Kuno 1987, 1995; Koizumi and Imamura 2016; Koizumi et al. 2014). The usage of the *niyotte*-passive is considered to be more severely restricted than that of the *ni*-passive because of its markedness. For example, Kinsui (1997: 764) claims that ‘the content of a *niyotte*-passive sentence must be suitable for the solemn style’. There seems to be a stylistic constraint on the use of the *niyotte*-passive. The functional constraints other than animacy will be explored in future works.

7.4.3. Reconsideration of the Usage of By-passives in Japanese

The corpus analyses performed in chapter 6 and 7 have researched the effects of information structure, heaviness, and animacy on the use of two by-passives in Japanese.

First, it has been demonstrated that two by-passives are not influenced by heaviness. This result suggests that heaviness affects only linear orders and has no influence on grammatical function assignments. Anyway, heaviness has no observable impacts on the usage of by-passives. Second, the present corpus analysis reflects the connection between passive types and animacy. The correlation between the *niyotte*-passive and inanimate subjects has proven to be strong. Indeed, 172 out of 200 examples comprise inanimate subjects. In contrast, the results of the present analysis have revealed that there is a relatively weak correlation between the *ni*-passive and the animate subject, although the previous studies claim that there is a strong connection between them (Hoshi 1991, 1994, 1999; Inoue 1976; Iwasaki 2002; Kuno 1986, 1990; Kuroda 1979; Muraki 1991; Takami 2011; Yamaguchi 2001). More concretely, 70 out of 200 examples have inanimate subjects in the *ni*-passive. This tendency can be partly explained by Takami (2011:30)'s observation that inanimate subjects can be used in the *ni*-passive when they are generic and unrelated to perspective constraints. In addition, Kuno (1983) and Takami (1995, 2011) observed that the *ni*-passive can take an inanimate subject when the passive

sentence has an adversative or benefactive meaning or the passive subject is characterized by the rest of the sentence. In other words, inanimate subjects are licensed in the *ni*-passive when the sentence itself has a special meaning. Moreover, it has been demonstrated that both the *ni*-passive and the *niyotte*-passive normally defocus the logical subject, which usually receives an agent role. They go in the same direction in terms of the animate status of the by-phrases. To be more concrete, by-phrases are generally more inanimate than their active subjects. Although the difference between the *ni*-passive and the *niyotte*-passive is not so clear, opposed to the prediction made by previous studies, animacy can partly explain the use of two by-passives. Third, it has been revealed that information structure has an influence on the choice between the *ni*-passive and the *niyotte*-passive. To put it more concretely, passive subjects are cataphorically more continuous in the *ni*-passive than in the *niyotte*-passive. However, this difference is not so large. Moreover, there is no distinction between the *ni*-passive and the *niyotte*-passive in terms of the anaphoric topicality.

To summarize the above discussion, animacy and information structure have a direct influence on the choice between the *ni*-passive and the *niyotte*-passive, but the effects of each factor are not so strong. In fact, the difference between the *ni*-passive and the *niyotte*-passive is subtle in terms of information structure and the choice between the

ni-passive and the *niyotte*-passive cannot be predicted by animacy when the passive subject is an inanimate noun. Each factor is not decisive for choosing the by-passive. Thus, animacy or information structure alone seem to be unable to predict the encoding type with precision. Therefore, there may not be any unique factor that is crucially important for accounting for the distinction between the *ni*-passive and the *niyotte*-passive. It is conceivable that the choice of two by-passives is determined by a bunch of weak factors such as subjectivity and empathy. In other words, the speaker may select the *ni*-passive or the *niyotte*-passive based on the sum of the effects of each factor. Let us illustrate this proposal by looking at (15). The *ni*-passive sentence (15) is taken as having an adversative meaning. It has been proposed that the inanimate subject in the *ni*-passive is permitted when it has an adversative meaning (Takami 1995, 2011). Additionally, the passive subject *mame* ‘bean’ is anaphorically and cataphorically topical in the sense that its RD is low and its TP is high. Thus, the *ni*-passive is considered to be chosen due to two factors: information structure and adversative meaning.

- (15) *mame-ga yachō-ni tabe-rare-teshimau-koto-ga*
 bean-NOM wild.bird-by eat-PASS-COMPL-NMZ-NOM often
yoku aru.

be-NOMPAST

‘There are often cases where beans are eaten by wild birds.’

(BCCWJ)

In the same vein, the *ni*-passive sentence (16) is considered to be selected because of the following two factors. First, the passive subject *zugin* ‘hood’ is characterized by the fact that many people wore hoods in China and Japan in those days. This fact provides a special characterization of *zugin*. This is because *zugin* is distinguished from other products in that it was very popular among many people. It should be noticed that the *ni*-passive expresses more explicitly that the logical object is characterized by the event (Masuoka 1982; Takami 1995, 2011). Furthermore, the passive subject *zugin* is anaphorically topical in that it was referred to in the immediately preceding discourse. However, it is not cataphorically topical because it disappears from the discourse after (16). In this sense, the *ni*-passive is not a desirable choice because the TP value of the passive subject is very low. Although the *ni*-passive is not the best choice in terms of cataphoric topicality, it is selected due to the characterization requirement and anaphoric topicality.

- (16) shina-de-mo nihon-de-mo zukin-ga
 China-LOC-also Japan-LOC-also hood-NOM
 shominkaikyū-ni motii-rare-ta.
 populace-by use-PASS-PAST

‘Both in China and Japan, hoods were used by the populace.’

Yet, there are cases where the choice of the passive voice is strongly affected by only one factor. For example, the interpretation of subject-oriented adverb *wazato* ‘deliberately’ has a great influence on the choice between the *ni*-passive (17a) and its active counterpart (17b). It should be noticed that the meaning of the *ni*-passive sentence (17a) is different from that of its active counterpart (17b), as illustrated in their English translations. Since *wazato* is a subject-oriented adverb, the *ni*-passive sentence (17a) means that swallows were being watched because of their intentions. On the other hand, the active sentence (17b) is taken as meaning *people watched swallows on purpose*. The difference between (17a) and (17b) is that the event expressed by (17a) arose because of the swallow’s will whereas the event described by (17b) occurred due to the people’s will. Since there is a difference between (17a) and (17b) in propositional meaning, information structure is expected not to work here. If and only if several constructions convey the

same message, speakers are able to select the way information is transmitted to the hearer via the choice of the construction. In other words, information structure has effects on the choice of the passive and the active only when voice change does not influence the propositional meaning of the sentence. In consequence, passivization is an obligatory operation in (17). With regard to the choice between the *ni*-passive and the *niyotte*-passive, animacy seems to work because the passive subject is the animate noun *tsubame* ‘swallow’. It should be noticed that the *niyotte*-passive disfavours animate subjects. The examples (15), (16), and (17) illustrate that the choice among the active, the *ni*-passive, and the *niyotte*-passive is influenced by multiple factors.

- (17) a. *tsubame-wa wazato hito-ni mi-rare-teiru-nda-yo.*
 swallow-TOP deliberately people-by watch-PASS-PROG-COP-FP
 ‘Swallows are being deliberately watched by people.’
- b. *hito-wa wazato tsubame-o mi-teiru-nda-yo.*
 people-TOP deliberately swallow-ACC watch-PROG-COP-FP
 ‘People are deliberately watching swallows.’

(adapted from BCCWJ)

It should be noted that discourse constraints are not absolute but violable pragmatic constraints for the choice between the active and the passive, unlike the interpretation of the subject-oriented adverb *wazato*. Selecting passives due to discourse constraints are just frequenstic preferences whereas some constraints obligatorily require the passive, showing that discourse constraints are weak constraints at least for by-passives. However, discourse effects are ubiquitous in the sense that many examples are affected. In contrast, the interpretation of subject-oriented adverbs has strong effects on some examples but its effects are limited in the sense that not so many examples are influenced. Only examples with a subject-oriented adverb are affected by its effect. There is no such a restriction for discourse effects and thus are universal, but their effects are expected to be weaker than some constraints as exemplified in (17). As a general tendency, some specific but strong constraints may have precedence over discourse constraints with regard to the choice between the active and the passive. Further studies are needed in order to assess the relative strength of each factor. More concretely, I propose that a fruitful avenue of future research is to survey the effects of each factor on the basis of a quantitative approach, such as corpus and experiment. By doing this, the strength of each factor will be measured accurately.

7.5. Other Types of Passives

Although the present study has focussed on the *ni/niyotte* distinction, there are two more options which express the same propositional meaning conveyed by SOV: agentless passives and *kara*-passives, as shown in (18b) and (18c), respectively. Note that the referent of the subject *kyōju* ‘professor’ in the active sentence (18a) is omitted in the agentless passive sentence (18b) and realized as a *kara*-phrase in the *kara*-passive sentence (18c). The following two sections overview the grammatical and functional properties of agentless and *kara*-passives.

- (18) a. *kyōju-wa* *Taro-o* *shikat-ta.*
 professor-TOP Taro-ACC scold-PAST
 ‘The professor scolded Taro.’
- b. *Taro-wa* $\emptyset$ *shika-rare-ta.*
 Taro-TOP (by.professor) scold-PASS-PAST
 ‘Taro was scolded (by the professor).’
- c. *Taro-wa* *kyōju-kara* *shika-rare-ta.*
 Taro-TOP professor-from scold-PASS-PAST
 ‘Taro was scolded by the professor.’

7.5.1. Agentless Passives

It has been reported cross-linguistically that agentless passives are more common than by-passives even in languages allowing agentive passives (Givón 1979, 1990; Keenan 1985; Maratsos 1978; Shibatani 1985, 1990; Svaltvik 1966). It should be noted that agentless passives can convey the same meaning as their active equivalents if their interpretations are clear from the discourse context. Thus, the active sentence (19a), the by-passive sentence (19b), and the agentless passive sentence (19c) can carry the same propositional meaning. This fact signifies that information structure works here because the differences among (19a), (19b), (19c) are not what is said about the world but the way it is packaged (Chafe 1976; Lambrecht 1996; Vallduví and Engdahl 1996).

- | | | | |
|------|----------------------------|----------|------------|
| (19) | a. Taro-ga | Jiro-o | oshi-ta. |
| | Taro-NOM | Jiro-ACC | push-PAST |
| | ‘Taro pushed Jiro.’ | | |
| | b. Jiro-ga | Taro-ni | os-are-ta. |
| | Jiro-NOM | Taro-by | push-PAST |
| | ‘Jiro was pushed by Taro.’ | | |
| | c. Jiro-ga | Ø | os-are-ta. |

Jiro-NOM (by.him) push-PAST

‘Jiro was killed (by him).’

What kind of discourse contexts, then, are needed in order to use agentless passives? One possibility is that agents are omitted when they are anaphorically and cataphorically salient. This is because zero expressions are the default option for expressing the continuation of the same referent at a certain point of discourse in Japanese (Hinds 1978, 1982, 1983; Imamura and Koizumi 2012; Kameyama 1985; Kuno 1978, 1983; Nariyama 2000; Shimojo 2005, 2006; Walker, Iida, and Cote 1994). In particular, Walker, Iida, and Cote (1994) and Imamura and Koizumi (2012) have observed in centering theory that the zero object is normally anaphorically and cataphorically more salient than the subject. Moreover, with regard to agentless passives in English, Arrese (1997) found that the unexpressed by-phrases showed higher TP and lower RD values than the expressed subjects. This result also supports the view that non-subject zero pronouns can be anaphorically and cataphorically more salient than expressed subjects.

An alternative possibility is that unexpressed agents are anaphorically and cataphorically nonsalient. This prediction is based on Shibatani (1985, 1990)’s claim that the primary pragmatic function of passivization is to defocus the agent. Shibatani (1985:

839) even states that ‘in passives, non-encoded agents may not be known at all’.

Furthermore, Yamamoto (1984) observed that agentless passives are typically chosen in journalistic writing when phonetically null agents are unclear, unknown, or indefinite.

Thus, agentless passives are expected to be selected when the agent is unknown or irrelevant. For example, Muraki (1991) observed that the agentless passive sentences (20a) and (20b) are natural because unknown agents are omitted.

- (20) a. shinshiryō-no kōkai-ga mat-are-teiru.
new.document-GEN release-NOM await-PASS-PROG

‘The release of the new documents has been awaited.’

- b. konpyūtā-o tsukaikonase-ru hito-ga
computer-ACC handle-POSS person-NOM

motome-rare-teiru.

need-PASS-PROG

‘The person who can handle computers is needed.’

(Muraki 1991: 10)

Likewise, Yamaguchi (2001) points out that a certain number of verbs permit

agentless passives only. In (21a), for instance, the acceptability of the passive decreases when a *ni-* or *niyotte*-phrase is present. By contrast, the agentless passive sentence (21b) is completely grammatical. The example (21) clearly indicates that there are occasions when agentless agents are chosen because explicit agents are unsuitable.

(21) a. *bōru-ga John-*ni/?niyotte nage-rare-ta.*
 ball-NOM John-by throw-PASS-PAST
 ‘The ball was thrown by John.’

b. *bōru-ga nage-rare-ta.*
 ball-NOM throw-PASS-PAST
 ‘The ball was thrown.’

(Yamaguchi 2001: 231)

Furthermore, Siewierska (1993) observed in Polish that subjecthood strongly correlates with cataphoric saliency. The same tendency was observed in chapter 4 with regard to SOV and OSV order sentences in Japanese. These results suggest that non-subject elements should not be cataphorically salient, which leads to the prediction that unexpressed agents in agentless passives are not cataphorically salient because they are

For the validity of the two possibilities about the discourse status of unexpressed agents in agentless passives, I leave further investigation on this topic for the future. If unexpressed agents are salient, we can conclude that zeros are generally salient regardless of their grammatical functions. If unexpressed agents are nonsalient, this result will lead to the conclusion that the zero object is special in that they are salient despite its grammatical function. In other words, the zero object is expected to be an exception to the correlation between subjecthood and cataphoric saliency. However, these two contradicting possibilities may be unified by supposing that there are two types of agentless passives like postposing. To put it more concretely, Tanaka (2002) proposes that agentless passives should be classified on the basis of the obligatory/optional distinction of demoted subjects realized as by-phrases. According to his proposal, the demoted subject of (22a) is optional whereas the demoted subject of (22b) is obligatory. There are three reasons to support this analysis.

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b. John-ga yabuisha-ni shinsatsus-are-ta. [Obligatory]

John-NOM charlatan-by examine-PASS-PAST

‘John was examined by the charlatan.’

(Tanaka 2002: 111)

Firstly, if (22a) is passivized, the omitted by-phrase does not have any specific reference, resulting in the meaning that *John was killed by someone*. On the other hand, ‘the missing demoted subject cannot receive such a reading, but rather must be taken to be co-referential with some appropriate NP in the preceding discourse’ (Tanaka 2002: 111-2). In consequence, (22b) is expected to be inappropriate or at least incomplete at the beginning of the discourse. The difference (23a) and (23b) is that the former is considered to have an indefinite agent whereas the latter is relevant to the specific agent.

(23) a. John-ga satsugais-are-ta.

John-NOM kill-PASS-PAST

‘John was killed (by someone).’

b. John-ga sinsatsus-are-ta.

John-NOM examine-PASS-PAST

‘John was examined (by him/her/them/etc.)’

(Tanaka 2002: 111)

Secondly, the obligatory demoted subject can be relativized while the optionally demoted subject cannot be relativized, as shown in (24). Tanaka (2002) claims that (24b) is more acceptable than (24a), although Inoue (1976) insists that demoted subjects cannot be relativized. Indeed, Tanaka (2002:112) states that ‘some speakers do not accept either sentence’ in (24). For example, both (24a) and (24b) are unacceptable according to my judgement. However, relativization of demoted subjects can be grammatical, as shown in (25). Thus, relativization of demoted subjects is considered to be a grammatically possible option.

- | | | | | |
|------|------|--------------------------------------|-------------------|-----------|
| (24) | a. * | John-ga | satsugais-are-ta | gōtō |
| | | John-NOM | kill-PASS-PAST | robber |
| | | ‘the robber John was killed by’ | | |
| | b. ? | John-ga | shinsatsus-are-ta | yabuisha |
| | | John-NOM | examine-PASS-PAST | charlatan |
| | | ‘the charlatan John was examined by’ | | |

(Tanaka 2002: 112)

(25) a. Mary-ga kudok-are-ta otoko

Mary-NOM seduce-PASS-PAST man

‘the man who Mary was seduced by’

b. musume-ga misome-rare-ta wakamono

daughter-NOM fall.in.love.at.first.sight-PASS-PAST young.man

‘(Lit.) the young man who my daughter was fallen in love with at the first sight’

c. Bill-ga sodate-rare-ta rōfūfu

Bill-NOM raise-PASS-PAST old.man.and.wife

‘the old man wife who Bill was brought up by’

(Tanaka 2002: 112)

Thirdly, ‘the obligatorily demoted subject can be the subject of a secondary predicate like *hadaka-de* ‘nude’ or *fudangi-de* ‘in everyday clothes’, while the optional demoted subject cannot’ (Tanaka 2002: 113). In (26a), the subject of the secondary predicate *hadaka-de* must be *John* because the optional demoted subject *gōtō* cannot be the candidate. In contrast, in (26b), both *John* and *isha* ‘doctor’ can be the subject of the

secondary predicate *fudangi-de* because it has the obligatorily demoted subject *isha*.

(26) a. John-ga gōtō-ni hadaka-de satsugais-are-ta.

John-NOM robber-by nude-with kill-PASS-PAST

‘When John was naked, he was killed by the robber.’

b. John-ga isha-ni fudangi-de shinsatsus-are-ta.

John-NOM doctor-by in.everyday.clothes-with examine-PASS-PAST

‘When John wore everyday clothes, he was examined by the doctor.’

‘John was examined by the doctor, who wore everyday clothes.’

(adapted from Tanaka 2002: 113)

Taken together, Tanaka (2002) provides the syntactic and semantic evidence about the obligatory/optional distinction of demoted subjects. If his analysis is on the right track, it is conceivable that the optionally demoted subjects such as (23a) are pertinent to anaphoric nonsaliency whereas the obligatorily demoted subjects such as (23b) are germane to anaphoric saliency. This is because the optionally demoted subjects are expected to be unknown, unclear, or indefinite whereas the obligatory demoted subjects are considered to be recovered from the discourse contexts. There may be a pragmatic

distinction between the obligatorily unexpressed agents and the optionally unexpressed agents in agentless passives. No prediction is made on the relationship between cataphoric saliency and the obligatorily demoted subjects. The obligatorily demoted subjects may be cataphorically salient because they are zeros like zero objects, but they may be cataphorically nonsalient because they are non-subjects. With regard to the optionally demoted subjects, they are expected to be cataphorically nonsalient because they are defocussed in terms of Shibatani (1985)'s criterion.

In addition to discourse contexts, factors other than information structure are expected to be highly germane to the use of agentless passives. First, the grammaticality of passives is affected by the 'typicality of the relation between the agent and the activity with which she or he is involved' and 'certain sets of verbs can form a grammatical passive only when a particular agent is chosen in relation to the event decoded by the base verb' (Yamaguchi 2001: 247). In (27), *sweeping in the school ground* is more compatible with *janitor* than *Alain Delon*. The reason why the janitor is more acceptable than Alain Delon is that 'we generally understand that it is one of his routine tasks to sweep the school ground, whereas a well-known French actor, Alein Delon, cannot be such a representative because his daily routine has no bearing on the sweeping of the school ground, unless, of course, a specific context is provided in ground' (Yamaguchi 2001:

248). In other words, it is a typical event that the janitor sweeps the school ground and that is why the janitor is a desirable agent in (27a). In the same way, we generally assume that it is a cleaner's daily task to straighten up a room and thus *tidying up the room* is more consistent with *cleaner* than *mother* due to the typicality of the event *a room was straightened up by a cleaner*. Hence, (28a) is more natural than (28b).

- | | | | | |
|------|---|---------------------|-----------------|-------------------|
| (27) | a. kōtei-ga | kanrinin-no | ojiisan-niyotte | hak-are-ta. |
| | school.ground-NOM | janitor-GEN | old.man-by | sweep-PASS-PAST |
| | ‘The school ground was swept by the janitor.’ | | | |
| | b. ??kōtei-ga | Alain Delon-niyotte | | hak-are-ta. |
| | school.ground-NOM | Alain Delon-by | | sweep-PASS-PAST |
| | ‘The school was swept by Alain Delon.’ | | | |
| (28) | a. hoteru-no | heya-ga | sōjifu-no | |
| | hoetel-GEN | room-NOM | cleaning-GEN | |
| | obasan-niyotte | katazuke-rare-ta. | | |
| | middle-aged.woman-by | tidy.up-PASS-PAST | | |
| | ‘The hotel room was tidied up by the female cleaner.’ | | | |
| | b. ??hoteru-no | heya-ga | okaasan-niyotte | katazuke-rare-ta. |

hoetel-GEN room-NOM mother-by tidy.up-PASS-PAST

‘The hotel room was tidied up by my mother.’

(Yamaguchi 2001: 248)

Second, the choice between agentless passives and by-passives is influenced by the notion of prominence ‘which refers to the property of an entity that stands out in such a way that it grabs a speaker’s attention. That is, we mean by this notion speaker’s mental emphasis laid on an entity that is otherwise treated as something that is not noticed or seen very clearly’ (Yamaguchi 2001: 248)¹. Consider (29). In (29), *coffee* cannot be regarded as an object in isolation because the drinking coffee is a unified activity (Teramura 1982: 243). This suggests that ‘*coffee* is ‘integrated’ into the action carried out by the agent and the whole activity of drinking a cup of coffee is conceived of as an event with a single participant’ on which the prominence is sorely placed (Yamaguchi 2001: 249). Thus, *coffee* itself is not a conspicuous object and the example (29a) is unacceptable. On the other hand, the passive sentence (29b) is acceptable because ‘the coffee is no longer construed as an integrated object, but because of the presence of the adverbial

¹ ‘Prominence’ is called ‘saliency’ by Yamaguchi (2001), but the same name is construed as having a different meaning in Shimojō (2005) and thus the term ‘saliency’ is avoided in this article.

John-by drink-PASS-PAST

‘Coffee was drunk by John in front of an audience.’

Third, the selection of the agentless passive over the by-passive is influenced by dependency, which ‘refers to the relation that signals who/what is dependent on or has control over who/what in realization of a given event designated by the base verb’ (Yamaguchi 2001: 244). Specifically, it will be shown that explicit agents are irrelevant when the passive sentence expresses the independent or self-contained activity. In (30a), the agent *kodomo* ‘child’ cannot control the movement of the homing pigeon, although the agent initiated the event by throwing the pigeon. In (30b), the bamboo leaf boat floats in the river. In (30c), the event of boiling the water is not controlled by *okaasan* ‘mother’, although she is related to the initiation of the event such as putting a kettle with water on the cooker.

- (30) a. denshobato-ga (?kodomo-niyotte) tobas-are-ta.
 homing.pigeon-NOM child-by release-PASS-PAST
 ‘A homing pigeon was released.’
- b. sasabune-ga (?kodomo-niyotte) nagas-are-ta.

bamboo.leaf.boat-NOM child-by flow-PASS-PAST

‘A bamboo leaf boat was allowed to float away.’

c. oyu-ga (? okaasan-niyotte) wakas-are-ta.

hot.water-NOM mother-by boil-PASS-PAST

‘The hot water was boiled.’

(Yamaguchi 2001: 245)

Fourth, stative events are considered to be more compatible with the passive than the active (Muraki 1991: 7). The main difference between the active sentence (31a) and the passive sentence (31b) is the voice and both sentences describe the event viewed from *mikan* ‘satsuma orange’. Although the passive (31b) is morphologically more marked than the active (31a), the former is pragmatically more unmarked than the latter. In Japanese, the passive is an unmarked choice for expressing stative events.

(31) a. mikan-wa bitamin C-o fukun-deiru.

satsuma.orange-TOP vitamin C-ACC include-PROG

‘Satsuma oranges include vitamin C.’

b. mikan-ni-wa bitamin C-ga fukum-are-teiru.

satsuma.orange-LOC-TOP vitamin C-NOM include-PASS-PROG

‘Vitamin C is included in satsuma oranges.’

(Muraki 1991: 7)

Moreover, there are cases where the passive does not have the active equivalent. For example, both (32a) and (32b) do not have their active counterparts. The passive is the only possible choice in (32). This fact supports the view that the passive can be more unmarked than the active in a certain situation.

(32) a. kono shiro-wa hori-ni kakom-are-teiru.

this castle-TOP moat-by surround-PASS-PROG

‘This castle is surrounded by a moat.’

b. kono chihō-wa shigen-ni megum-are-teiru.

this region-TOP resource-in blessed.with-PASS-PROG

‘This region is blessed with (natural) resources.’

(Muraki 1991: 8)

Fifth, the passive licenses VP adverbs easily whereas its active equivalent does not

(Muraki 1991: 9). For example, the VP adverb *bulldozer-de* ‘with a bulldozer’ can modify the main verb easily in the passive sentence (33a) but not in the active sentence (33b). It seems that the passive (33a) is selected in order to allow the VP adverb to modify the verb because its active counterpart (33b) sounds awkward. This difference is expected to have an influence on the choice between the passive and the active.

- (33) a. furui kaoku-ga bulldozer-de kowas-are-ta.
 old house-NOM bulldozer-with break-PASS-PAST
 ‘The old house was pulled down with a bulldozer.’
- b. ? furui kaoku-ga bulldozer-de koware-ta.
 old house-NOM bulldozer-with break-PAST
 ‘The old house fell apart with a bulldozer.’

(Muraki 2001: 9)

In sum, the choice of agentive passives may be determined not only by discourse contexts but also by factors other than information structure. This proposal implies that there are some pragmatic motivations related to agentless passives. Pragmatic aspects of agentless passives need further investigation. Specifically, the pragmatic distinction

between agentless passives and by-passives should be explored.

7.5.2. *Kara*-Passives

Teramura (1982) observed that verbs of emotion permit either a *ni*-phrase or a *kara*-phrase, as shown in (34) and (35). ‘Such verbs include *aisuru* ‘love’, *nikumu* ‘hate’, *konomu* ‘like’, *kirau* ‘dislike’, *osoreru* ‘fear’, *oshimu* ‘miss’, *sonkei-suru* ‘respect/admire’, *keibetsu-suru* ‘despise’, and *ayashimu* ‘get suspicious’ (Tsujimura 2013: 266). The passive sentences (34b) and (35b) allow for either a *ni*-phrase or a *kara*-phrase because their predicates *sonkei-suru* ‘respect/admire’ and *keibetsu-suru* ‘despise’ are verbs of emotion.

(34) a. Active sentence

gakusei-ga Tanaka-sensei-o sonkeishi-teiru.

student-NOM Tanaka-N.SU-ACC respect-PROG

‘Students respect Prof. Tanaka.’

b. Passive sentence

Tanaka-sensei-ga gakusei-ni/kara sonkeis-are-teiru.

Tanaka-N.SU-NOM students-by/from respect-PASS-PROG

‘Prof. Tanaka is respected by his students.’

(Tsujimura 2013: 266)

(35) a. Active sentence

kokumin-ga daitōryō-o keibetsushi-ta.

citizens-NOM president-ACC despise-PAST

‘The citizens despised the president.’

b. Passive sentence

daitōryō-ga kokumin-ni/kara keibetsus-are-ta.

president-NOM citizens-by/from despise-PASS-PAST

‘The president was despised by the citizens.’

(Tsujimura 2013: 267)

The semantic feature of verbs is essential for the use of the *kara*-passive. If the verb does not express emotions, the *kara*-passive is not available. For example, (36a) and (36b) do not allow for a *kara*-phrase because neither *nusumu* ‘steal’ nor *korosu* ‘kill’ belong to verbs of emotions toward others. Only a certain sets of verbs can form the *kara*-passive.

(36) a. diamond-ga dorobō-ni/*kara nusum-are-ta.

diamond-NOM thief-by/from steal-PASS-PAST

‘The diamond was stolen by a thief.’

b. hannin-ga keikan-ni/*kara koros-are-ta.

criminal-NOM police.officer-by/from kill-PASS-PAST

‘The criminal was killed by a police officer.’

(adapted from Tsujimura 2013: 267)

Although there seems to be a strict semantic restriction on the use of the *kara*-passive as illustrated in (34), (35), and (36), some evaluative verbs license the *kara*-passive. For instance, the evaluative verb *homeru* ‘praise’ permits the *kara*-passive, as shown in (37). In the same way, the verb *shikaru* ‘scold’ can take the *kara*-passive, as shown in (38).

(37) a. Active sentence

sensei-ga musuko-o home-ta.

teacher-NOM my.son.ACC praise-PAST

‘The teacher praised my son.’

b. Passive sentence

musuko-ga	sensei-ni/kara	home-rare-ta.
my.son-NOM	teacher-by/from	praise-PASS-PAST

‘My son was praised by the teacher.’

(Tsujimura 2013: 267)

(38) a. Active sentence

sensei-ga	Hanako-o	shikat-ta.
teacher-NOM	Hanako-ACC	scold-PAST

‘The teacher scolded Hanako.’

b. Passive sentence

Hanako-wa	sensei-ni/kara	shika-rare-ta.
Hanako-TOP	teacher-by/from	scold-PASS-PAST

‘Hanako was scolded by her teacher.’

(adapted from Masuoka 1991: 114)

Furthermore, Muraki (1991) states that not only i) emotional and evaluative verbs that express the speaker’s attitude or emotion but also ii) verbs that express language activities or iii) verbs that express exchange of things or information can take either a *ni*-

phrase or a *kara*-phrase. Thus, Teramura's criteria for the choice of *kara*-phrases seems to be too strict. For example, *ijimeru* 'bully', *iiyori* 'court', *susumeru* 'recommend', and *tewatasu* 'hand over' allow for a *kara*-phrase, as shown in (39a), (39b), (39c), and (39d), respectively.

- | | | | | |
|------|----|---|--------------|-------------------------------|
| (39) | a. | Hanako-wa | Taro-ni/kara | ijime-rare-ta. |
| | | Hanako-TOP | Taro-by/from | bully-PASS-PAST |
| | | 'Hanako was bullied by Taro.' | | |
| | b. | Hanako-wa | Taro-ni/kara | iiyo-rare-ta. |
| | | Hanako-TOP | Taro-by/from | court-PASS-PAST |
| | | 'Hanako was courted by Taro.' | | |
| | c. | Hanako-wa | Taro-ni/kara | |
| | | Hanako-TOP | Taro-by/from | |
| | | omia-i-o | | susume-rare-ta. |
| | | formal.meeting.with.a.view.to.marriage-ACC | | recommend-PASS-PAST |
| | | 'Hanako was recommended by Taro to attend a formal meeting with a view to marriage' | | |
| | d. | Hanako-wa | Taro-ni/kara | shorui-o tewatas-are-ta. |

Hanako-TOP Taro-by/from document-ACC hand.over-PASS-PAST

‘The documents were handed over to Hanako by Taro.’

(Muraki 1991: 16)

In addition to the optional selection of a *kara*-phrase, ‘there is another situation in which *kara* is not only available but is the only choice of the particle to mark the relevant NP’ (Tsujimura 2013: 267). To put it more concretely, there are occasions where *kara*-phrases must be selected in order to avoid two *ni*-marked NPs in direct passivized ditransitive sentences (Muraki 1991; Tsujimura 2013). Let us illustrate this tendency by having a close look at (40). First, ditransitive verbs take the direct object marked with the accusative case marker *o* and the indirect object marked with the dative case marker *ni*, as shown in (40a). Second, when the direct object *tenkin* ‘transfer’ is promoted to the passive subject by passivization, the former subject *tenchō* ‘store manager’ is demoted to the oblique case. However, if the former subject were marked with the particle *ni*, the resulting structure would include two *ni*-phrases. In order to avoid two continuous *ni*-marked NPs, the first NP *tenchō* must be marked with *kara* instead of *ni*, as in (40b). It should be noted that the second NP *Tanaka* cannot be marked with *kara* because it is taken as meaning the goal whereas the first NP can be attached with *kara* because it receives

the source role (Muraki 1991: 16). On the other hand, when the indirect object *Tanaka* is promoted to the subject, the *ni/kara* inversion is a grammatically acceptable choice, as shown in (40c). Since the second NP *tenkin* is marked with the accusative case marker *o*, marking the first NP *tenchō* with *ni* will not result in two *ni*-marked NPs. Thus, *tenchō* can be marked with either *ni* or *kara* in (40c). The contrast between (40b) and (40c) clearly indicates that the *ni/kara* inversion is available only when the resulting structure does not include two *ni*-marked NPs. ‘This is apparently motivated by an attempt to avoid the sequence of *ni*-marked NPs. Thus, two occurrences of NP-*ni* can be prevented by making *niyotte* as well as *kara* available’ (Tsujimura 2013: 269), as shown in (40d). In (40d), the first NP can be marked with either *kara* or *niyotte*.

Tanaka-NOM	store.manager-by/from	transfer-ACC	order-PASS-PAST
d. tenkin-ga	tenchō-*ni/kara/niyotte	Tanaka-ni	meiji-rare-ta.
transfer-NOM	store.manager-by/from/by	Tanaka-DAT	order-PASS-PAST

(Tsujimura 2013: 267-9)

Although semantic or syntactic constraints are at work for the usage of the *kara*-passive, there may be a discourse factor related to the *ni/kara* inversion. This is because the choice of particles allows the speaker to choose the way information is transmitted to the hearer. It is possible that the difference between the *ni*-marking and the *kara*-marking in (34b), (35b), (37b), (38b) and (39a, b, c, d) is not what is said about the world but the way it is packaged (Chafe 1976; Lambrecht 1996; Vallduví and Engdahl 1996). To the best of my knowledge, no studies have examined the use of the *kara*-passive in terms of information structure. There may be a pragmatic constraint related to this construction. To be more concrete, when the speaker would like to emphasize the meaning of source, the particle *kara* may be selected. By contrast, when the speaker would like to lay stress on the meaning of agent, the particle *ni* may be chosen. Further studies are needed about the usage of the *kara*-passive.

7.6. Summary

The present chapter has scrutinized the effects of heaviness and animacy on two by-passives in Japanese. The first basic finding is that heaviness does not contribute to the syntactic choice among the active, the *ni*-passive, and the *niyotte*-passive at all. Thus, I conclude that heaviness is not a main determinant of two by-passives. The second finding is that animacy works on the choice between the *ni*-passive and the *niyotte*-passive. To be more concrete, the *ni*-passive generally prefers animate subjects while the *niyotte*-passive normally favors inanimate subjects. This result partly verifies the validity of the observation made by previous studies (Hoshi 1991, 1994, 1999; Inoue 1976; Iwasaki 2002; Kuno 1986, 1990; Kuroda 1979; Muraki 1991; Takami 2011; Yamaguchi 2001). However, the correlation between animacy and passive types is not so strong. Based on this fact, I propose that the choice between the *ni*-passive and the *niyotte*-passive is determined by multiple factors. With regard to the animacy of the by-phrases, on the other hand, both the *ni*-passive and the *niyotte*-passive behave in the same way; both the *ni*-phrases and the *niyotte*-phrases are less animate than the active subjects. Although by-phrases are explicitly realized as the *ni*-phrases or the *niyotte*-phrases in two by-passives, they are defocussed like agentless passives. The implications and consequences of the present proposal is that by-passives conform to Shibatani (1985)'s generalization that

primary pragmatic function of prototypical passivization is to defocus the agent, though by-passives are not passive prototypes.

Chapter 6 and 7 have concentrated on the functional difference between the *ni*-passive and the *niyotte*-passive in terms of information structure, heaviness, and animacy.

The next chapter will attempt to make a systematic description of word order changes and by-passives on the basis of the corpus analyses conducted in chapter 4, 5, 6, and 7. The discussion will begin with the complementary distributions from a view point of information structure and then move on to the analysis, taking heaviness and animacy into consideration.

Chapter 8

General Discussion

8.1. Overview

Based on the findings observed in chapters 4, 5, 6, and 7, this chapter presents comprehensive considerations for the usage of scrambling, topicalization, *ni*-passives and *niyotte*-passives. In particular, this chapter makes an attempt to propose an encoding system in Japanese in terms of information structure, heaviness, and animacy. Section 8.2 deals with the influence of information structure on word order changes and by-passives. Specifically, it has been demonstrated that scrambling is pertinent to ‘topic shift’ from the referent of the scrambled object to that of the subject whereas topicalization and by-passives are relevant to ‘continuing topic’ realized as the *WA*-marked object or the passive subject. Moreover, I claim that ‘contrastiveness’ is the key to distinguishing topicalization from by-passives in terms of information structure. Furthermore, it has been revealed that the *ni/niyotte* distinction is affected by the cataphoric saliency of the passive subject. Section 8.3 makes an attempt to explain the use of word order changes and by-passives in terms of information structure, heaviness, and animacy. First, it has been shown that heaviness is related to word order changes but unrelated to by-passives. In OSV, the direct

object tends to be much longer than the subject. Second, animacy has proven to be relevant to by-passives but irrelevant to word order changes. To be more concrete, there is a weak interaction between the *ni*-passive and animate subjects whereas the *niyotte*-passive dominantly takes inanimate subjects. However, animacy is not a decisive factor for the choice between the *ni*-passive and the *niyotte*-passive because inanimate subjects can be used not only for the *niyotte*-passive but also for the *ni*-passive. The implications and consequences of the present proposal is that the distinction between the *ni*-passive and the *niyotte*-passive is determined by the combination of multiple factors. Section 8.4 provides the summary of this chapter.

8.2. Information Structure and Marked Constructions

The preceding chapters have laid out how word order changes and by-passives are categorized in terms of the Givónian approach. The following discussion will utilize the subsequent notions defined in (1), (2), and (3). As discussed in chapter 3, referential distance (RD) is ‘a linguistic distance in clausal units measured backward to the most recent representation of the coreferential expression’ (Shimojo 2005: 71). It should be noted that RD is supposed to reflect *saliency* (1). To be more concrete, Shimojo (2005: 71-2) states that ‘what this measurement suggests is the level of activation of a particular

referent in one's consciousness' and assumes 'that information becomes activated and deactivated in one's cognitive attention; when a speaker refers to a particular referent in conversation, the referent becomes activated in the hearer's consciousness. As the hearer, and also the speaker for this matter, processes information represented by the subsequent utterances, that particular referent activated moments ago decays in activation. Thus, other things being equal, a referent whose RD is 1 may be considered to be more activated than a referent whose RD is 20 at the given point of discourse. It is certainly not only the linguistic distance that influences the level of activation at a given point of discourse'. 'Referents may be made accessible to activation by way of other activated referents if they are associated with each other in one way or the other. There are other factors as well. Entities which are visually available in the conversational context, such as the participants of the conversation themselves, would be made accessible to activation more readily than those which are not available as such. One's visual focus on particular entities would also affect the level of activation for given entities either positively or negatively. Despite all these potential factors that influence the level of activation over referential distance, the present study employs RD as a measure of anaphoric saliency because it is the only quantifiable anaphoric measurement currently available for the present purpose'. In consequence, a referent whose RD is low is considered to be salient while a referent

whose RD is high is expected to be non-salient.

(1) Saliency

A referent is *salient* if it continues to be activated in one's cognitive focus of attention. Continued activation of a referent occurs if there is recurrent focusing of the referent.

(Shimojo 2005: 17)

In contrast to RD, topic persistence (TP) appears to mirror *focusing* (2) and *defocusing* (3). Note that TP measures the number of coreferential expressions within ten cataphoric clauses (Watanabe 1989). According to Shimojo (2005: 16), 'focusing is a mechanism to select a particular piece of information to pay attention to; hence, the information being selected for focusing is in one's cognitive attention'. If a referent is focussed, it will remain activated in the cataphoric contexts. This is because activated referents tend to stay activated upon shifting the focus of attention to other referents. Therefore, focussed referents are supposed to have high TP values in general. In contrast, if a referent is defocussed, it will be deactivated in one's cognitive attention. Deactivated referents normally disappear from the discourse and are unlikely to be mentioned in the

subsequent contexts. As a general tendency, defocussed referents are inclined to have low TP. To summarize the above discussion, RD is a reflection of saliency and TP reflects focusing and defocusing.

(2) Focusing

Focusing is the process of activating a referent in one's cognitive focus of attention, regardless of the activation status of the referent in the preceding context. Focusing includes the process in which a referent is rendered activated by way of association with another referent which has been activated.

(Shimojo 2005: 17)

(3) Defocusing

Defocusing is the process of deactivating a referent in one's cognitive focus of attention. Defocusing of a referent occurs if there is no longer focusing of the referent.

(Shimojo 2005: 17)

The discourse statuses of the logical object and the logical subject are summarized

in table 8.1 in terms of anaphoric saliency (RD) and cataphoric saliency (TP). With regard to anaphoric saliency, the sentence types are arbitrarily defined as salient if their average RD value ranges from 1 through 10 and non-salient if their average RD is 11 clauses and over (Shimojo 2006: 132). In the same way, with regard to cataphoric saliency, the sentence types are arbitrarily defined as defocusing if their average TP value ranges from 0 through 2 and focusing if their average TP is 2 clauses and over. ‘In general, more topical (thematically important) referents tend to have TP values above 2. Less topical referents tend to have TP values of 0-2’ (Givón 1994: 11). Indeed, 2 seems to be a cutting point for the present data in the corpus. In terms of anaphoric saliency, logical objects are salient in scrambled sentences ($O_{ACC}S_{NOM}/TOPV$), topicalized sentences ($O_{TOP}S_{NOM}V$), and by-passive sentences ($S_{NOM}/TOPNP_{Ni}/NiyotteV$), but nonsalient in canonical active sentences ($S_{NOM}/TOPO_{ACC}V$). In other words, there are no differences among scrambling, topicalization, and by-passives in the sense that all of these options are pertinent to anaphorically salient logical objects.

Table 8.1 The argument encoding types in terms of RD and TP

Sentence	Grammatical		
		RD	TP
Types	Functions		

$S_{\text{NOM}}O_{\text{ACC}}V$	S	Salient	Focusing
	O	Nonsalient	Defocusing
$S_{\text{TOP}}O_{\text{ACC}}V$	S	Salient	Focusing
	O	Nonsalient	Defocusing
$O_{\text{ACC}}S_{\text{NOM}}V$	S	Nonsalient	Focusing
	O	Salient	Defocusing
$O_{\text{TOP}}S_{\text{NOM}}V$	S	Nonsalient	Defocusing
	O	Salient	Focusing
$O_{\text{ACC}}S_{\text{TOP}}V$	S	Salient	Focusing
	O	Salient	Defocusing
$S_{\text{NOM}}NP_{\text{Ni}}V$	S	Salient	Focusing
	by	Nonsalient	Defocusing
$S_{\text{TOP}}NP_{\text{Ni}}V$	S	Salient	Focusing
	by	Nonsalient	Defocusing
$S_{\text{NOM}}NP_{\text{Niyotte}}V$	S	Salient	Focusing
	by	Nonsalient	Defocusing
$S_{\text{TOP}}NP_{\text{Niyotte}}V$	S	Salient	Focusing

Given that marked constructions are normally permitted only in specific contexts (Aissen 1992; Comrie 1988; Imamura, Sato, and Koizumi 2014, 2016; Kuno 1987, 1995; Koizumi and Imamura 2016; Koizumi et al. 2014), word order changes and by-passives need to have some effects on the discourse statuses of logical objects. In consequence, they seem to require their logical objects to be given information. This tendency can be explained by the combination of the two functional constraints formally defined in (4) and (5). The Information Flow Principle (IFP) stipulates that sentences in Japanese should be arranged in the order that given information precedes new information. It should be noticed that IFP is one of the discourse principles that Japanese should follow but can be violable because pragmatic principles are general tendencies, not absolute constraints (Jucker and Taavitsainen 2013: 5). Kuno (1987)'s markedness principle for discourse rule violations predicts that marked constructions will be unacceptable if they violate discourse principles because the intentional violation of discourse principles should be avoided. Since scrambling, topicalization, and passivization are marked options, the violation of IFP will be unacceptable. The intuition behind Kuno's assumption is that costly operations should have some merits in order to offset their costs. In contrast to marked

options, unmarked constructions will be acceptable even if they violate discourse principles because the unintentional violation of discourse principles is permitted. SOV sentences are unmarked options, and as such are not penalized even when they violate IFP. The given-new order is a preferable order for SOV, but it is not a mandatory requirement. Unlike marked constructions, unmarked constructions are contextually unrestricted. Given the costless nature of unmarked options, cost effect itself can be a motivation for using them. Thus, SOV is expected to be used in wider contexts than OSV and $S\ NP_{Ni/Niyotte}\ V$.

(4) Information Flow Principle

In principle, words in a sentence are arranged in such a way that those that represent old, predictable information come first, and those that represent new, unpredictable information last

(Kuno 1978: 54)

(5) Markedness Principle for Discourse-Rule Violations

Sentences that involve marked (or intentional) violations of discourse principles are unacceptable. On the other hand, sentences that involve unmarked (or unintentional) violations of discourse principles go unpenalized and are acceptable.

(Kuno 1987: 212)

In section 4.4.4, I pointed out the possibility that scrambling may not be as costly as postposing due to the syntactic constraint defined in (6). Since Japanese is a head-final language, leftward movements are expected to be costless whereas rightward movements are considered to be costly. It should be noted that scrambling is a leftward movement while postposing is a rightward movement. Taken together, scrambling is supposed to be a costless movement whereas postposing is considered to be a costly movement. Although (6) may be too strict a constraint because scrambling has been proven to be costlier than its canonical counterpart (Chujo, 1983; Imamura, Sato, and Koizumi 2014, 2016; Koizumi and Imamura 2016; Koizumi and Tamaoka, 2010; Miyamoto and Takahashi, 2002; Tamaoka et al. 2005), scrambling may not be as costly as postposing.

(6) The Parameter Value Preservation (PVP) measure

A grammatical operation (Move- α , in particular) that creates a structure that is inconsistent with the value of a given parameter is costly in that language, whereas one that produces a structure consistent with the parameter is costless.

(Fukui 1993: 402)

The above discussion was proposed in order to explain the asymmetric distribution of postposed arguments observed by Shimojo (2005). He observed no example with a postposed *O*-marked object in spoken Japanese. If scrambling is preferable to postposing due to the syntactic constraint (6), *O*-marked objects are predicted to be scrambled more frequently than postposing. This may be the reason why there was no example with a postposed *O*-marked object. However, PVP is not the only explanation about an overall bias toward the avoidance of postposing *O*-marked arguments. The asymmetric distribution of postposing can be accounted for by the combination of IFP and the position of given information. Note that scrambled or postposed constituents tend to be given information. Moreover, scrambled elements are located in the sentence-initial position whereas postposed elements are placed toward the postverbal position. Taken together, scrambling normally follows IFP while postposing generally violates IFP. Therefore, scrambling is considered to be preferable to postposing in terms of IFP. This may be the reason why postposing disfavors *O*-marked arguments. When there is a competition between scrambling and postposing, scrambling is expected to be chosen more often than postposing because it follows IFP. Furthermore, Kuno's markedness principle for discourse rule violations predicts that postposing is not a preferable choice in terms of the

discourse principle of IFP. Note that postposing is a marked construction but violates the IFP. Thus, there must be a good reason to select postposing other than IFP. Seraku (2015), for example, proposes that postposing in novels may have some stylistic/rhetoric effects such as ‘tension’ and that postposing in dialogues concerns communicative functions such as ‘resolution of ambiguity’. Anyway, it seems that anaphoric saliency of an argument is a necessary condition but not a sufficient condition for the use of postposing in Japanese. Thus, postposing may be selected in order to meet some communicative or stylistic requirements. If this proposal is on the right track, it is conceivable that anaphoric saliency is an epiphenomenon of other functions. In (7e), for instance, *hondana* ‘bookcase’ is postposed in order to remove referential ambiguity caused by the two mutually interfering referents *hondana* and *keyboard*. Note that *hondana* in (7e) was explicitly mentioned in (7a). When postposing has the communicative function of ‘clarification’, the postposed element generally has its antecedent in the previous discourse. Therefore, it is possible that anaphoric saliency derives from other pragmatic functions such as ‘clarification’. If this proposal is on the right track, anaphoric saliency of postposed referents may be an epiphenomenon of communicative functions.

(7) a. watashi-Ø hondana-Ø hoshikat-ta-nda-yo-ne

I-Ø bookcase-Ø want-PAST-COP-FP-FP

‘I wanted a bookcase.’

b. Ø kībōdo-ga hoshikat-ta-no?

(you) keyboard-NOM want-PAST-Q

‘Did (you) want a keyboard?’

c. Ø nakat-ta-no

(they) exist-PAST-IT

‘There were no (bookcases).’

d. a Ø nakat-ta-no?

oh (it) exist-PAST-Q

‘Oh, there were no (keyboards)?’

e. ikko-mo nakat-ta-no hondana-ga

one.thing-even exist-PAST-IT bookcase-NOM

‘There was not a single bookcase.’

(Shimojo 2005: 213)

In section 4.4.5, I proposed that word order changes are applied for intermediately accessible information due to the following two reasons. First, there is no need to move

the direct object when it is new information because in-situ position is the default position for new information (Kamio and Takami 1998; Kuno 1978, 1995; Takami 1995). Second, zero pronouns are unmarked choices for marking highly accessible information (Hinds 1978, 1982, 1983; Imamura and Helgason 2016; Imamura and Koizumi 2012; Kuno 1978). Based on *reductio ad absurdum*, I concluded that word order changes target intermediately accessible information. The same logic can be applied to by-passives with explicit subjects. When the logical object is new information, it is placed in the position immediately preceding the verb in the active sentence. Thus, passivization is not needed for marking new information. Additionally, highly accessible information tends to be realized as the zero pronoun. These may be the reason why passive subjects in my data also show intermediate RD values. However, unlike word order changes, there is no conflict between passive subjects and zero pronouns. Hence, I predict that passive subjects can mark highly accessible information when realized as a zero pronoun, as proposed by Imamura, Helgason, and Koizumi (2013). Note that zero pronouns are also considered to be *salient* because their RD values are normally very low (Hinds 1978, 1982; Imamura and Helgason 2016; Imamura and Koizumi 2012). As a general tendency, we think of anaphoric saliency as a condition for using scrambling, topicalization, or passivization.

Concerning cataphoric saliency, logical objects are focussed in topicalized sentences and by-passives, but defocussed in scrambled sentences and canonical active sentences. Among marked constructions, only scrambling defocussed logical objects, whereas topicalization and by-passives focussed them. In terms of grammatical functions, there seems to be a correlation between subjecthood and cataphoric saliency, as observed by Siewierska (1993) in Polish. Subjects are more likely than the object to be connected to the succeeding discourse. In centering theory, several studies claim that *WA*-marked referents are expected to be more likely to be carried over to the subsequent discourse (Kameyama 1985; Walker, Iida, and Cote 1994). In other words, referents marked with the topic marker *WA* generally take precedence to other constituents in terms of cataphoric saliency. Shimojo (2005) supports this possibility on the basis of the Givónian approach, showing that *WA*-marked arguments tend to have high TP. Let us have a close look at a made-up example by Walker, Iida, and Cote (1994). In (8a), *Taro* and *Hanako*, are introduced as discourse entities. Thus, there are two entities that can be construed as the referent of the zero subject in (8b). However, there is a bias toward interpreting the zero subject as *Taro*. Note that *Taro* is marked with the topic marker *WA* and *Hanako* is marked with the accusative case marker *O* in the immediately preceding sentence (8a). The interpretation of (8b) suggests that *WA*-marked referents tend to be taken over to the

following sentence more easily than the *O*-marked ones.

(8) a. Taro-wa Hanako-o eiga-ni sasoi-mashi-ta.

Taro-TOP Hanako-ACC movie-to invite-HON-PAST

‘Taro invited Hanako to the movie.’

b. Ø ichinichijū nani-mo te-ni tsuki-masen-deshi-ta.

(SUBJ) all.day anything-even hand-to attach-NEG-COP-PAST

‘(Taro) could not do anything all day.’

(Walker, Iida, and Cote 1994: 201)

Yet, the example (8) cannot fully rule out the possibility that the zero subject in (8b) is taken as meaning *Taro* because *Taro* is realized as the subject in (8a). It is notable that *Taro* is not only marked by *WA* but also realized as the subject. Thus, it is necessary to separate the *WA*-marking from subjecthood. To this end, let us focus on the relationship between empathy and subjecthood first. As defined in (9), empathy expresses the speaker’s point of view or perspective. In (9b), the auxiliary giving verb *kure* ‘give’ requires the speaker to empathize with the direct object *Hanako*. Thus, empathy predicts that *Hanako* will be taken over to the following sentence easily. On the other hand,

grammatical functions predict that the subject *Taro* is more likely than the object *Hanako* to be carried over to the subsequent sentence. Yet, the native Japanese speakers prefer to take *Hanako* as the antecedent of the zero subject in (10c). This fact suggests that an empathized referent is more likely than the subject to be cataphorically salient.

(9) Empathy

Empathy is the speaker's identification, with varying degrees, with a person who participates in the event that he describes in a sentence.

(Kuno and Kaburaki 1977: 628)

(10)a. Hanako-wa kuruma-ga kowarete-te komari-mashi-ta.

Hanako-TOP car-NOM broken-LK at.a.loss-HON-PAST

‘Her car broken, Hanako was at a loss.’

b. Taro-ga Ø shinsetsuni te-o kashite-kure-mashi-ta.

Taro-NOM (OBJ) kindly hand-ACC lend-give-HON-PAST

‘Taro kindly did (Hanako) a favor in helping her.’

c. tsugi-no-hi Ø Ø eiga-ni sasoi-mashi-ta.

next-GEN-day (SUBJ) (OBJ) movie-to invite-HON-PAST

‘Next day (Hanako) invited (Taro) to a movie.’

(Walker, Iida, and Cote 1994: 210-1)

In the same way, *WA*-marking and empathy make different predictions about the antecedent of the zero subject in (11b). According to topic marking, the *WA*-marked referent *Michiko* in (11a) will be taken over to the immediately succeeding sentence (11b). In contrast, the empathy constraint predicts that the direct object *kanai* ‘my wife’ in (11a) will be carried over to the following sentence (11b). However, the *WA*-marked subject *Michiko* is preferred as the antecedent of the zero subject in (11b). The higher degree of cataphoric salience of *WA*-marking over empathy is clearly exemplified in the example (11).

(11) a. Michiko-wa kanai-o gichō-ni oshite-kure-mashi-ta.

Michiko-TOP wife-ACC chairman-DAT recommend-give-HON-PAST

‘Michiko did my wife a favor in recommending her as chairman.’

b. Ø asu-no kaihyō-kekka-o tanoshimi-ni

(SUBJ) tomorrow-of ballot.counting-result-ACC look.forward-to

shi-tei-masu.

do-PROG-HON

‘Michiko is looking forward to tomorrow’s results.’

(Walker, Iida, and Cote 1994: 212)

It is notable that the interpretation of zero subject in (11b) changes completely if the topic marker *WA* used for *Michiko* in (11a) is substituted for the nominative case marker *GA*, as illustrated in (12). In (12b), not only *Michiko* but also *kanai* can be taken as the antecedent of the zero subject. In other words, the zero subject of (12b) can be understood as referring to either *Michiko* or *kanai*. The strong preference of *Michiko* over *kanai* in (11b) disappears because the subject in (12a) is marked by the nominative case marker *GA*. This example indicates that the difference between *GA*-marking and empathy is not as clear as the one between *WA*-marking and empathy in terms of cataphoric saliency.

(12)a. Michiko-ga kanai-o gichō-ni oshite-kure-mashi-ta.

Michiko-TOP wife-ACC chairman-DAT recommend-give-HON-PAST

‘Michiko did my wife a favor in recommending her as chairman.’

b. Ø asu-no kaihyō-kekka-o tanoshimi-ni

(SUBJ) tomorrow-of ballot.counting-result-ACC look.forward-to
 shi-tei-masu.

do-PROG-HON

‘Michiko is looking forward to tomorrow’s results.’

‘My wife is looking forward to tomorrow’s results.’

(Walker, Iida, and Cote 1994: 212)

Taken together, topic marking has precedence over empathy, which is in turn given priority over subjects in terms of cataphoric saliency. This tendency is supported by the results of my corpus analyses, except for empathy. This is because empathy is not taken into consideration within the design for my corpus analysis. First, *WA*-marked subjects have higher TPs than *GA*-marked subjects, as shown in $S_{NOM}O_{ACC}V$ and $S_{TOP}O_{ACC}V$. This fact shows that *WA*-marked referents are cataphorically more focussed than *GA*-marked ones in SOV. Second, *WA*-marked objects show higher TP values than *GA*-marked subjects in $O_{TOP}S_{NOM}V$. Although *WA*-marked referents are direct objects in $O_{TOP}S_{NOM}V$, they are cataphorically more focussed than *GA*-marked subjects because they are marked by the topic marker *WA*. This observation provides empirical evidence that topic marking is cataphorically more focussed than subject marking in OSV as well as in SOV. In

centering theory, it has been proposed that *WA*-marked referents are ranked higher than *GA*-marked ones in terms of cataphoric saliency (Kameyama 1985; Walker, Iida, and Cote 1994). Yet, no studies have investigated whether word order changes have effects on the Centering algorithm in Japanese (Sakurai 2007). To shed light on this issue, let us focus on the relationship between OSV and TP. Firstly, *GA*-marked subjects have higher TP values than *O*-marked objects in $O_{ACC}S_{NOM}V$. Secondly, *WA*-marked objects show higher TP values than *O*-marked objects in $O_{ACC}S_{TOP}V$. Thirdly, *WA*-marked objects have higher TP values than *GA*-marked subjects in $O_{TOP}S_{NOM}V$. In any case, cataphoric saliency is determined by the type of particles, not by word order changes. Based on this result, I conclude that preposing has no influence on cataphoric saliency, as predicted by Kameyama (1985) and Walker, Iida, and Cote (1994).

Regarding by-passives, passivization marks the cataphoric saliency of logical objects. This result can be explained by the correlation between grammatical functions and cataphoric saliency. To be more concrete, subjects tend to be cataphorically focussed (Siewierska 1993). Thus, the passive subject is chosen as the referent that the speaker intends to talk about in the subsequent discourse. Opposed to the logical objects, the logical subjects become cataphorically defocussed by dint of passivization. This is because non-subject referents are likely to be cataphorically defocussed. These facts can

be explained by the claim that the discourse function of passivization is to maintain the topic continuity by promoting the logical object and demoting the logical subject when the former is more topical than the latter (Aissen 1999; Cooreman 1982, 1987; Givón 1983, 1994; Shibatani 1988; Thompson 1987). In terms of cataphoric saliency, by-passives are selected when the passive subjects are cataphorically more focussed than by-phrases realized as a *ni*-phrase or a *niyotte*-phrase. In this sense, there is no distinction between the *ni*-passive and the *niyotte*-passive.

Let us consider the discourse functions of each encoding type in terms of saliency. First, all of the options mark the anaphoric saliency of the logical object. Scrambling and topicalization are relevant to the anaphoric saliency of logical objects because they are preposed, as predicted by (13a). The observation (13b) can make the same prediction about topicalization. It is possible that the direct object in $O_{TOP}S_{NOM}V$ is anaphorically salient because it is attached with the topic marker *WA*. With regard to by-passives, passive subjects are anaphorically salient in general even if they are marked by the nominative case marker *GA*, as predicted by (13b). It seems that discourse functions of grammatical operations (13) take precedence over these of particles (14). The same tendency was observed by Shimojo (2005) with regard to the interaction between postposing and topic marker *WA*. When *WA*-marked referents are postposed, they tend to

be cataphorically defocussed due to the discourse function of postposing. There is some reason to believe that grammatical operations affect the discourse statuses of target referents, being independent of particles. With regard to the anaphoric saliency of the logical subjects, topicalization and by-passives tend to have anaphorically nonsalient subjects. The anaphoric saliency of the subject in scrambling depends on how to mark it. If the subject is marked by the topic marker *WA*, it tends to be anaphorically salient due to (14a). On the other hand, if the subject is marked by the nominative case marker *GA*, it tends to be anaphorically nonsalient because of (14b). In by-passives, logical subjects are realized as a *ni*-phrase or a *niyotte*-phrase and thus anaphorically nonsalient, as predicted by (14c). In any case, there is no distinction among scrambling, topicalization, *ni*-passive, and *niyotte*-passive in terms of anaphoric saliency of logical objects. Second, scrambling does not have an influence on the cataphoric saliency of the logical object whereas topicalization and by-passives are pertinent to the cataphoric saliency of the logical object. This result can be accounted for by the combination of (13) and (14). With regard to $O_{ACC}S_{NOM}/TOPV$, the subject is more likely than the object to be cataphorically more focussed due to (14). *GA*-marked or *WA*-marked referents are cataphorically focussed as shown in (14a, b) whereas *O*-marked referents are normally cataphorically defocussed as shown in (14c). Taken together, scrambling predicts that subjects are

cataphorically more focussed than the scrambled objects. With regard to $O_{TOP}S_{NOM}V$, the object is usually cataphorically more focussed than the subject because of (14a) and (14c). In other words, topicalization makes the prediction that *WA*-marked objects are more likely than *GA*-marked subjects to be cataphorically focussed. With regard to $S_{NOM}/TOPNP_{Ni/Niyotte}V$, passive subjects are marked by the nominative case marker *GA* or the topic marker *WA*, resulting in them being cataphorically more focussed than the by-phrases, as predicted by (14a, b, c). It should be noticed that the cataphoric saliency of passive subjects can be predicted without presupposing a special rule for by-passives. The observations (14a) and (14b) are sufficient for explaining the cataphoric saliency of passive subjects.

(13) Discourse Functions of Grammatical Operations

a. Discourse Function of Word Order Changes

Preposed referents are anaphorically salient.

b. Discourse Function of Passivization

Passivized subjects are anaphorically salient.

(14) Discourse Functions of Particles

a. Discourse Function of *WA*-marking

WA-marked referents are anaphorically salient and cataphorically focussed.

b. Discourse Function of *GA*-marking

GA-marked referents are anaphorically nonsalient but cataphorically focussed.

c. Discourse Function of *O*-marking or by-phrases

O-marked referents or by-phrases are anaphorically and cataphorically defocussed.

Based on the observations (13) and (14), the discourse functions of each construction can be summarized in (15). Concerning anaphoric saliency, logical objects are salient in all of the constructions. In contrast, there is a discrepancy between scrambling and other options in terms of the saliency of logical subjects. Logical subjects are anaphorically nonsalient in topicalization and by-passives, whereas their discourse statuses are determined by particles in scrambling. In scrambling, *GA*-marked subjects are anaphorically nonsalient and *WA*-marked subjects are anaphorically salient. Respecting cataphoric saliency of logical objects, there is a complementary distribution between scrambling and other constructions. An encoding type associated with the cataphoric nonsaliency of the logical object is scrambling, and those associated with the cataphoric saliency of the logical object are topicalization, *ni*-passive, and *niyotte*-passive.

With regard to cataphoric saliency of logical subjects, they are salient in scrambling but nonsalient in topicalization and by-passives.

(15) Discourse Functions of Constructions

a. Discourse Function of Scrambling ($O_{ACC}SV$)

Scrambled objects are anaphorically salient but cataphorically nonsalient.

Subjects are cataphorically salient.

b. Discourse Function of Topicalization ($O_{TOP}SV$)

Directs objects are anaphorically and cataphorically salient.

Subjects are anaphorically and cataphorically nonsalient.

c. Discourse Function of by-passives ($SNP_{Ni/Niyotte}V$)

Passive subjects are anaphorically and cataphorically salient.

By-phrases are anaphorically and cataphorically nonsalient.

In section 4.4.2, I made the generalization that scrambling predicts ‘topic shift’ from the referent of the scrambled object to that of the subject and topicalization anticipates ‘continuing topic’ as the referent of the object. This descriptive generalization defined in section 4.5 is shown in (16) again.

(16) Discourse Properties of Scrambling and Topicalization

- a. $O_{ACC}SV$ anticipates ‘topic shift’ from the referent of the scrambled object to that of the subject. Therefore, $O_{ACC}SV$ is selected when the speaker/writer intends to start a new discourse and continues talking about the referent of the subject after $O_{ACC}SV$ appear.
- b. $O_{TOP}SV$ predicts ‘continuing topic’ as the referent of the subject. $O_{ACC}SV$ is chosen when the speaker/writer intends to talk about the same referent, which is expressed as the object in $O_{TOP}SV$.

Building on the observations shown in (15), I propose that by-passives are relevant to continuing topic as well as topicalization. To be more concrete, the by-passives are expected to be selected when the speaker/writer prefers talking about the same referent, which is realized as the passive subject in $S_{NOM/TOP}NP_{Ni/Niyotte}$. To account for the entire pattern of the results, the proposal (16) should be revised as (17) so that passivization is included. According to (17), there is a complementary distribution between scrambling and other constructions. In other words, scrambling predicts topic shift from the referent of object to the subject whereas topicalization and by-passives anticipate continuing topic

realized as the logical subject (subjects in $O_{TOP}S_{NOM}V$ and *ni-* or *niyotte*-phrases in $S_{NOM}/TOPNP_{Ni/Niyotte}$).

(17) Discourse Properties of Scrambling, Topicalization, and By-passives

- a. $O_{ACC}SV$ anticipates ‘topic shift’ from the referent of the scrambled object to that of the subject. Therefore, $O_{ACC}SV$ is selected when the speaker/writer intends to start a new discourse and continues talking about the referent of the subject after $O_{ACC}SV$ appears.
- b. $O_{TOP}SV$ predicts ‘continuing topic’ as the referent of the subject. $O_{ACC}SV$ is chosen when the speaker/writer intends to talk about the same referent, which is expressed as the object in $O_{TOP}SV$.
- c. $S NP_{Ni/Niyotte}V$ expects ‘continuing topic’ as the referent of the passive subject. One of them is singled out when the speaker intends to talk about the same referent, which is realized as the subject in by-passives.

From the view point of the Givónian approach, topicalization and by-passives share the same discourse function, as shown in (17b, c). In other words, they best fit as the function of continuing topic. However, it poses the question of which concept

distinguishes topicalization from by-passives functionally. One answer depends on the notion of ‘contrastiveness’. It has been observed that $O_{TOP}S_{NOM}V$ tends to result in a contrastive reading (McGloin 1990; Shimojo 2005). When a non-subject argument is marked by the topic marker *WA*, it normally has only the contrastive meaning (Kuno 1973a; McGloin 1987, 1990). When the subject is marked by the topic marker *WA*, it can be taken as having both the thematic and the contrastive meaning, as shown in (18a). The *WA*-marked subject, *Hanako*, can be interpreted as thematic and contrastive according to the discourse context. In contrast, when the direct object is followed by *WA*, it tends to result in a contrastive meaning, as shown in (18b). The *WA*-marked object, *eiga* ‘movie’, has only the contrastive meaning.

- (18) a. Hanako-wa sono eiga-o mi-ta.
 Hanako-TOP the movie-ACC see-PAST
 ‘Hanako, (she) saw the movie.’
- b. sono eiga-wa Hanako-ga mi-ta.
 the movie-TOP Hanako-NOM see-PAST
 ‘The movie, Hanako saw (it).’

(Shimojo 2005: 33)

In contrast to topicalization, by-passives do not necessarily have a contrastive meaning, as shown in (19). In (19a), the passive subject, *Shinshū University*, can be construed as a thematic meaning. In other words, the sentence (19a) can be interpreted as a predication about *Shinshū University*. In the same vein, the subject of (19b), *Ito-kyōju-no ronbun* ‘Prof. Ito’s paper’, does not have to be construed as a contrastive meaning. There is no need to establish a contrastive relationship between Ito’s paper and other papers.

- (19) a. Shinshū-daigaku-wa Oumu-Shinri-kyōto-ni nyūgaku-are-ta.
 Shinshū-University-TOP Aum-Shinri-believer-by enter-PASS-PAST
 ‘Shinshū University was entered by an Aum believer.’
- b. Ito-kyōju-no ronbun-wa Yamada-hakushi-ni
 Ito-Prof.-GEN paper-TOP Yamada-Dr.-by
 takaku hyōkas-are-ta.
 highly evaluate-PASS-PAST
 ‘Prof. Ito’s paper was praised by Dr. Yamada.’

(Takami 2011: 37-8)

The example (19) clearly indicates that contrastiveness is not essential for the use of by-passives. According Takami (2011: 39), the sentences (19a) and (19b) are motivated by adversative / benefactive meanings. In (19a), *Shinshū University* will lose its popularity due to an *Aum believer*. Note that *Aum Shinrikyō* is a Japanese doomsday cult. Thus, the fresher who believes in *Aum Shinrikyō* can be a future threat for *Shinshū University*. In consequence, the sentence (19a) has an adversative meaning. In contrast, the sentence (19b) expresses a benefactive event for the passive subject *Prof. Ito*. Therefore, (19b) is acceptable. In any case, the usage of by-passives is not related to contrastiveness at all.

The next question is what distinguishes the *ni*-passive from the *niyotte*-passive in terms of the discourse function. In section 6.6, I pointed out that passive subjects in the *ni*-passive are more likely to be taken over to the succeeding discourse more frequently than in the *niyotte*-passive. In other words, the passive subject of the *ni*-passive is cataphorically more focussed than that of the *niyotte*-passive. In consequence, the functional difference between the *ni*-passive and the *niyotte*-passive can be partly explained by the degree of topic continuity in terms of cataphoric topicality. Thus, the subject of the *ni*-passive may be regarded as global topic while that of the *niyotte*-passive

may be seen as local topic.

The summary of the above discussion is as follows. First, it has been demonstrated that word order changes and passivization correlate with anaphorically salient logical objects. Second, *WA*-marking and *GA*-marking are selected for the purpose of cataphoric focusing whereas *O*-marking and by-phrases are utilized for expressing cataphoric defocusing. Third, word order changes and passivization take precedence over particles in terms of discourse functions. The combination of these three proposals can account for the distribution of scrambling, topicalization, and by-passives. To begin with, scrambling (O_{AccSV}) predicts ‘topic shift’ from the referent of the scrambled object to that of the subject. The speaker/writer selects scrambling when he or she would like to begin with a new discourse and continues talking about the referent of the subject in the subsequent discourse. Next, topicalization (O_{TopSV}) expects ‘continuing topic’ as the referent of the *WA*-marked object. Third, by-passives anticipate ($S \text{ NP}_{\text{Ni/Niyotte}} V$) ‘continuing topic’ as the referent of the passive subject. In other words, the speaker/writer employs topicalization or passivization when he or she intends to talk about the same referent realized as the *WA*-marked object or the passive subject. Taken together, there is a complementary distribution between scrambling and other constructions under the framework of the Givónian approach. As for the distinction between topicalization and

by-passives, contrastiveness seems to work. To put it more concretely, contrastiveness is indispensable for topicalization but is not a mandatory requirement for the use of by-passives. Furthermore, it has been revealed that passive subjects are cataphorically more focussed in the *ni*-passive than in the *niyotte*-passive.

From the view point of the Givónian approach, this section has laid out how word order changes and by-passives should be incorporated into the argument encoding system in Japanese. However, this encoding system does not account for the usage of scrambling, topicalization, and by-passives perfectly. Specifically, the distinction between topicalization and by-passives is unclear in terms of RD and TP. The next section will explore how heaviness and animacy affect word order changes and by-passives in order to provide a close-up of the encoding system in Japanese.

8.3. The Usages of Scrambling, Topicalization, and By-passives

On the basis of the findings observed in the previous chapters, this section attempts to explain the use of scrambling, topicalization, and by-passives, taking heaviness and animacy into consideration. Let us first deal with the effects of heaviness. In chapter 5, it was found that heaviness works on the choice between SOV and OSV. More concretely, there was no difference in the length between the subject and the direct object in SOV

whereas the direct object was much longer than the subject in OSV. OSV is normally selected when the direct object is heavier than the subject. This tendency can be accounted for by the notion of ‘long-before-short’ preference, where the longer constituent precedes the shorter one (Dryer 1980; Howkins 1994; Imamura 2014, 2015a; Kondo and Yamashita 2011; Saeki 1960; Suzuki 2000; Yamashita 2002). The basic insight behind this preference is that it is easier to process OSV than SOV when the direct object is much heavier than the subject and there is a preference to select the word order with the least processing cost. Opposed to word order changes, it has been observed in chapter 7 that passivization is not influenced by heaviness at all. Specifically, there is no general tendency that can differentiate the *ni*-passive from the *niyotte*-passive from a view point of heaviness. It should be noticed that additional processing cost is incurred by changing voice from the active to the passive (Gordon and Chan 1995). Even when the logical object is heavier than the logical subject, the cost of passivization itself can offset the merit of ‘long-before-short’ ordering. Note that ‘long-before-short’ preference is the by-product of reducing the processing cost. If ‘long-before-short’ ordering does not lower the processing cost due to passivization, there is no reason to select by-passives when the logical object is much longer than the logical subject. This may be the reason why the use of by-passives is not influenced by heaviness at all. In a nutshell, heaviness does

contribute to the use of scrambling and topicalization, but not to the usage of by-passives in Japanese.

Next, let us move on to the influence of animacy on word order changes and by-passives. In chapter 5, it has been revealed that animacy does not have a strong impact on the choice of word orders. Regardless of word orders, subjects are almost always animate and objects are inanimate in many cases. This result conflicts with the psycholinguistic finding by Tanaka et al. (2011), who observed that animacy affects the choice between SOV and OSV in a sentence recall task. To be more concrete, OSV was recalled as SOV more frequently when the subject is an animate noun and the direct object is an inanimate noun than when the subject is an inanimate noun and the direct object is an animate noun. In other words, participants tended to change OSV into SOV so that the animate noun precedes the inanimate one. However, SOV was recalled just as SOV even when the result is to place the inanimate noun before the animate one. The contradiction between the corpus and the experiment clearly indicates that some factors which are too weak to be observed in actual examples might nevertheless be detected by psycholinguistic experiments. Experiments can observe a correlation between one factor and a certain construction even if that factor is not essential for that construction. Based on the corpus analysis, I conclude that animacy is not indispensable for explaining the usage of word

order changes in Japanese. It is not too much to say that animacy has nothing to do with scrambling and topicalization.

With regard to the influence of animacy on by-passives, the corpus analysis in chapter 7 has confirmed the general tendency observed by previous studies (Hoshi 1991, 1994, 1999; Inoue 1976; Iwasaki 2002; Kuno 1986, 1990; Kuroda 1979; Muraki 1991; Takami 1995, 2011; Yamaguchi 2001). First, there was a weak correlation between the *ni*-passive and the animate subject. Second, the *niyotte*-passive prefers the inanimate subject in many cases. Taken together, the *ni/niyotte* distinction can be partly explained by animacy. Yet, the animacy restriction is not an absolute constraint that can fully determine the choice between the *ni*-passive and *niyotte*-passive. In fact, there were many counter examples for the *ni*-passive in term of animacy. The *ni*-passive permits inanimate subjects because of pragmatic reasons. For example, Takami (2011: 30) states that the *ni*-passive is allowed to take the inanimate subject when the *ni*-phrase is generic and has no perspective. Concerning the by-phrases, it has been revealed that they are less animate than their canonical equivalents both in the *ni*-passive and the *niyotte*-passive. This result supports the view that the voice change from active to passive unanimously defocusses the logical subject in terms of animacy (Dixon and Aikhenvald 1997, 2000; Shibatani 1985). In sum, animacy has a direct influence on the use of by-passives and has proven

to be especially useful for explaining the distinction between the *ni*-passive and the *niyotte*-passive.

To summarize the discussion so far regarding the use of word order changes and by-passives, heaviness has an effect on word order changes but not on by-passives whereas animacy exerts its influence on by-passives but not on word order changes. In other words, there is a complementary distribution about the effects of heaviness and animacy on word order changes and by-passives. By contrast, information structure has an impact on both word order changes and by-passives. In this sense, information structure can give a more comprehensive account of word order changes and by-passives than the notion of heaviness and animacy. Although the information structure can partly distinguish the *ni*-passive from the *niyotte*-passive, the difference between the *ni*-passive and the *niyotte*-passive is not large in terms of the discourse statuses of the passive subject and the by-phrase. To be more concrete, there was no significant difference between the *ni*-passive and the *niyotte*-passive in terms of the RD values for the passive subject and the by-phrase, but only the passive subject showed higher TP values in the *ni*-passive than in the *niyotte*-passive. From the view point of the Givónian approach, the only difference between the *ni*-passive and the *niyotte*-passive is the TP values of the passive subjects. It therefore seems reasonable to assume that the use of the by-passives is affected by

multiple factors. With regard to the use of scrambling, the same proposal was made by Imamura (2015a: 14) stating that ‘heaviness and givenness independently influence word order choices. Thus, it is necessary to take both concepts into account in order to explain the function of scrambling. This fact implies that there may not be a simple motivation for scrambling. Scrambling may be an amalgam of operations motivated by several factors’. Based on the finding summarized above, I propose that not only scrambling but also topicalization and by-passives are influenced by multiple factors. Each factor cooperates with each other in order to determine the choice of the construction. Specifically, the combination of givenness, heaviness, and animacy can distinguish one construction from the others effectively, as illustrated in table 8.2. Table 8.2 summarizes the effects of anaphoric saliency, cataphoric saliency, animacy, and heaviness on the logical object of scrambling, topicalization, *ni*-passive, and *niyotte*-passive.

Table 8.2. The status of logical object in Japanese in scrambling, topicalization, *ni*-passive, and *niyotte*-passive in terms of anaphoric saliency, cataphoric saliency, animacy, and heaviness¹

¹ * means that the index is irrelevant.

Factor	O _{ACC} SV	O _{TOP} SV	S NP _{Ni} V	S NP _{Niyotte} V
Anaphoric	Salient	Salient	Salient	Salient
Cataphoric	Defocusing	Focusing	Focusing	Focusing
Animacy	*	*	Animate	Inanimate
Heaviness	Heavy	Heavy	*	*

Table 8.2 makes the following predictions. First, when the logical object is long and anaphorically salient but cataphorically defocussed, scrambling should be selected. Second, when the logical object is long and anaphorically salient and focussed, topicalization should be chosen. Third, when the logical object is animate and anaphorically salient and cataphorically focussed, the *ni*-passive should be utilized. Fourth, when the logical object is inanimate and anaphorically salient and cataphorically focussed, the *niyotte*-passive may be selected. Note that inanimate nouns can be used for the *ni*-passive depending on the context. For example, when the *ni*-passive has an adversative meaning as shown in (20a) or the passive subject is characterized by the *ni*-phrase as shown in (20b), the inanimate subject is permitted in the *ni*-passive (Kuno 1983; Takami 1995, 2011).

(20) a. Hawaii-daigaku-wa Sato-sensei-ni yame-rare-ta.

Hawaii-university-TOP Sato-Dr.-by quit-PASS-PAST

‘University of Hawaii was affected by the event of Dr. Sato quitting it.’

(Kuno 1983: 206)

b. kono hon-wa tennōheika-ni-mo yom-are-teiru.

this book-TOP His.Majesty.the Emperor-by-even read-PASS-NONPAST

‘This is read even by His Majesty the Emperor.’

(Takami 1995: 100)

This fact indicates that, when the passive subject is an inanimate referent, the encoding system exemplified in table 8.2 is not decisive for the choice between the *ni*-passive and the *niyotte*-passive. The animacy constraint does not guarantee that inanimate referents are used for passive subjects in the *niyotte*-passive. In order to predict the choice of the by-passives, it is necessary to take other factors into account. As shown in chapter 7, the choice between the *ni*-passive and the *niyotte*-passive seems to be determined by the interactions among multiple factors such as animacy, thematic roles, verb types, transitivity, subjectivity, empathy, and temporality. I therefore propose that a fruitful avenue of future research is to calculate the strength of each factor for the *ni/niyotte*

distinction. To this end, the corpus may be a good tool. Based on the quantitative data, we can observe some tendencies about the usage of the two by-passives. This approach has an advantage over the other previous studies which depend on the introspective approaches in the sense that the strength of each factor can be measured with precision. By using quantitative data, the strength of each factor can be determined on the basis of the ‘real’ number (actual frequency) of the language use using an objective approach without a preconception.

8.4. Summary

This chapter contains a thorough investigation of the use of scrambling, topicalization, *ni*-passive, and *niyotte*-passive. Building on and extending much of what was presented in the past four chapters, I made several proposals about the usage of word order changes and by-passives in Japanese. To begin with, I proposed that scrambling predicts ‘topic shift’ from the referent of the scrambled object to the subject whereas topicalization and by-passives anticipate ‘continuing topic’ realized as the *WA*-marked object or the passive subject. Next, it has been revealed that heaviness works on only scrambling and topicalization. To be more concrete, scrambling and topicalization are expected to be selected when the direct object is much longer than the subject. Moreover, animacy has

proven to be related to only by-passives. Specifically, the *ni*-passive is likely to be chosen when the logical object is animate whereas the *niyotte*-passive tends to be used when the logical object is inanimate. On the basis of these results, I summarized the status of logical object in Japanese in scrambling, topicalization, *ni*-passive, and *niyotte*-passive in terms of anaphoric saliency, cataphoric saliency, animacy, and heaviness, as shown in table 8.2. Table 8.2 clearly indicates the functional distributions among scrambling, topicalization, *ni*-passive, and *niyotte*-passive. However, table 8.2 cannot account for the *ni/niyotte* distinction entirely because there are many counter examples. Thus, I propose that the use of by-passives is also influenced by multiple factors other than animacy.

Although the present study has investigated the functions of word order changes and by-passives, the encoding system of transitive sentences in Japanese is not complete without taking into consideration other discourse-related constructions such as the cleft construction. Moreover, zero pronouns, postposing, and other factors such as particle types may be relevant to the argument encoding system. The next chapter deals with the remaining issues and suggests topics for future research.

Chapter 9

Concluding Remarks

The present study has tried to reveal the usage of scrambling, topicalization, *ni*-passive, and *niyotte*-passive in terms of information structure, heaviness, and animacy. The analyses presented throughout have demonstrated that heaviness and information structure are important factors for word order changes whereas animacy and information structure are pertinent to by-passives. Based on these findings, the functional account developed thus far formulates the argument encoding system of the logical object as shown in table 8.2 in chapter 8.

Table 8.2. The status of logical object in Japanese in scrambling, topicalization, *ni*-passive, and *niyotte*-passive in terms of anaphoric saliency, cataphoric saliency, animacy, and heaviness¹

Factor	O _{ACC} SV	O _{TOP} SV	S NP _{Ni} V	S NP _{Niyotte} V
Anaphoric	Salient	Salient	Salient	Salient

¹ * means that the index is irrelevant.

Cataphoric	Defocusing	Focusing	Focusing	Focusing
Animacy	*	*	Animate	Inanimate
Heaviness	Heavy	Heavy	*	*

However, the argument encoding system shown in table 8.2 is incomplete in the sense that other options are not taken into consideration. To be more concrete, zero pronouns, postposing, agentless passives, *kara*-passives, and cleft construction should be incorporated into the argument encoding system. In other words, it is essential to deepen our understanding of the functional nature of the related constructions. Specifically, I propose that further corpus analyses should be carried out in order to investigate the functional aspects of the related constructions. In this way, it becomes possible to base claims about the functional nature of the argument encoding system with precision on a much larger database.

One of the shortcomings in the Givónian approach is that focus structures are not taken into consideration because the main theme of this approach is to calculate the topicality of a referent on the basis of a text-based qualified methodology (Givón 1983, 1988, 1990, 1994). In consequence, no studies have examined the discourse statuses of cleft sentences such as (1a) and (1b) under the framework of the Givónian approach. In

(1), ‘the embedded clause *Tom-ga katta* ‘Tom bought’ contains gap e_i . This embedded clause is nominalized by the particle *NO* and then topicalized by the particle *WA*. With respect to this topic, the focus *ringo* ‘apple’ is presented and the string ends with the copula *DA*’ (Seraku 2013a: 145). Syntactically, the pseudo-cleft sentence (1a) differs from the cleft sentence (1b) in that a focus element *ringo* ‘apple’ has a case particle *o* only in (1b) (Hoji 1987, 1990). However, the *NO*-clause *Tom-ga katta-no* is interpreted as presupposition, regardless of the cleft type. In (1), it is presupposed that *Tom bought something*. It should be noticed that Japanese has one type of cleft ‘which positions the presupposed element as a topic, and the focus domain as a predicate’ (Iwasaki 2002: 242).

- (1) a. [Tom-ga e_i kat-ta no]-wa ringo_i-da.
 Tom-NOM buy-PAST NMZ-TOP apple-COP
 ‘It is an apple that Tom bought.’
- b. [Tom-ga e_i kat-ta no]-wa ringo-o_i-da.
 Tom-NOM buy-PAST NMZ-TOP apple-ACC-COP
 ‘It is an apple that Tom bought.’

(Seraku 2013a: 145)

(2)	a.	[Taro-ga	age-ta	no]-wa
		Taro-NOM	give-PAST	NMZ-TOP
		Hanako-ni	ringo-o	(3-tsu)-da.
		Hanako-DAT	apple-ACC	3-CL-COP
		‘(Lit.) It is (three) apples to Hanako that Taro gave.’		
	b.	*[Taro-ga	age-ta	no]-wa
		Taro-NOM	give-PAST	NMZ-TOP
		Hanako-Ø	ringo-o	(3-tsu)-da.
		Hanako-Ø	apple-ACC	3-CL-COP
		‘(Lit.) It is (three) apples to Hanako that Taro gave.’		

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c. *[Taro-ga age-ta no]-wa
 Taro-NOM give-PAST NMZ-TOP
 Hanako-ni ringo-Ø (3-tsu)-da.

‘(Lit.) It is (three) apples to Hanako that Taro gave.’

(Hiraiwa and Ishihara 2002: 36)

However, Seraku (2013a) points out that the second focus can be case-less, as shown in (3). In (3), the second focus *Mary* is not case-marked but the sentence as a whole is acceptable. Thus, the availability of multiple foci is not capable of making the right prediction about the cleft types. Thus, it seems plausible that the distinction between the pseudo cleft construction and the cleft construction may not be determined by information structure. I leave this as an open question. In the following discussions, I do not distinguish the cleft construction from the pseudo-cleft construction.

(3) [e_i e_j present-o age-ta no]-wa Tom-ga_i Mary_j-Ø da.
 present-ACC give-PAST NMZ-TOP Tom-NOM Mary-Ø COP

‘It is Tom_i to Mary_j that e_i gave a present e_j.’

(Seraku 2013a: 146)

With regard to the focussed elements, there is another constraint about the use of the cleft construction. Mihara and Hiraiwa (2006: 250) observed that the cleft construction must include the identificational focus, not information focus. For the function of identificational focus, Kiss (1988: 245) states that ‘an identificational focus represents a subset of the set of contextually or situationally given elements for which the predicate phrase can potentially hold; it is identified as the exhaustive subset of this set for which the predicate phrase actually holds’. On the other hand, ‘if a sentence part conveys new, nonpresupposed information marked by one or more pitch accents- without expressing exhaustive identification performed on a set of contextually or situationally given entities, it is not an identificational focus but a mere information focus. An information focus is present in every sentence, but not every sentence contains an identificational focus’ (Kiss 1998: 246). Simplifying somewhat, identificational focus represents exhaustive meaning while information focus does not express such a meaning. Returning to the usage of the cleft construction, the cleft sentence (4b) sounds strange when it is interpreted as an information focus, while there is no such a constraint for the canonical word order sentence (4c). Thus, as a reply to (4a), the cleft sentence (4b) is unacceptable whereas the corresponding SOV sentence (4c) is acceptable. Based on the acceptability of the example (4), Mihara and Hiraiwa (2006: 250) conclude that the cleft

construction must include an identification or contrastive focus. In (4b), for example, the focussed element *Hanako* must be contrasted with other people but there is no such contrastive set. That is why (4b) is unacceptable. Contrastiveness can provide an appropriate context for the cleft to be acceptable.

(4) a. Taro-wa dare-o tataki-mashi-ta-ka?

Taro-TOP who-ACC hit-HON-PAST-Q

‘Who did Taro hit?’

b. * Taro-ga tatai-ta no-wa Hanako(-o)-desu-yo.

Taro-NOM hit-PAST NMZ-TOP Hanako(-ACC)-HON-FP

‘It is Hanako that Taro hit.’

c. Taro-wa Hanako-o tatai-ta-yo.

Taro-TOP Hanako-ACC hit-PAST-FP

‘Taro hit Hanako.’

(Mihara and Hiraiwa 2006: 250)

Numerous studies have investigated the syntactic and the semantic nature of the cleft construction in Japanese, some of which take the notion of focus into consideration

(Hoji 1987, 1990; Hiraiwa and Ishihara 2002; Iwasaki 2002; Koizumi 1995; Kuroda 1992; Mihara and Hiraiwa 2006; Seraku 2011, 2013a, b; Takano 2002). However, to the best of my knowledge, there have been no studies on the relationship between the cleft construction and saliency. Specifically, it is essential to take into account whether the focus element in the cleft construction is cataphorically salient or not. The focus may be cataphorically salient because it is activated in the speaker's cognitive focus of attention. In contrast, it is conceivable that the focus is cataphorically nonsalient when it is a non-subject element. Anyway, it is unclear whether focus information is generally cataphorically salient or nonsalient. Further studies are needed to disclose the relationship between the focus and the cataphoric saliency.

With respect to anaphoric saliency, Iwasaki (2002) predicts that the presupposed element is anaphorically nonsalient and the focus element is anaphorically salient. In particular, Iwasaki (2002: 242) states that 'the cleft sentence takes the form of '*X wa Y da*.' *X* can either be a clause,' or 'a noun phrase. When *X* is a noun phrase, the cleft sentence superficially resembles the topic-comment sentence, but it is crucially different from it in that the *WA*-marked phrase in a cleft sentence must be non-referential and non-generic, and its predicate nominal must be referential. In contrast, the *WA*-marked phrase in a topic-comment sentence must be identifiable, i.e. either referential or generic', as

shown in (5).

- | | | | | | |
|-----|---------------|---------------------|-----------|------------------|-------------|
| (5) | Cleft | [non-ref./non.gen.] | <i>wa</i> | [referential NP] | <i>da</i> . |
| | Topic-Comment | [ref.gen.] | <i>wa</i> | NP | <i>da</i> |

(Iwasaki 2002: 242)

To strengthen the above argument, Iwasaki cites the example (6). In the cleft sentence (6a), the *WA*-marked NP *kyō-no pitcher* ‘today’s pitcher’ is non-referential. In contrast, in the topic-comment sentence (6b), the *WA*-marked NP is referential and thus identifiable. Furthermore, Iwasaki (2002: 243) claims that ‘the cleft sentence ‘*X wa Y da*’ can be restated as ‘*Y ga X da*’ by reverting the positions of *X* and *Y*, and changing the particles (i.e. argument focus)’. Consequently, the cleft sentence (6a) can be restated as (6c). It should be noted that the *GA*-marked phrase *Makoto* in (6b) is taken as meaning an exhaustive listing. Thus, the contrastive meaning in the cleft sentence (6a) can be transferred to (6c) appropriately due to the exhaustiveness. Anyway, Iwasaki’s observation supports the view that the *WA*-marked phrase in the cleft construction is neither referential nor generic.

- (6) a. kyō-no pitcher-wa Makoto-da.
 today-GEN pitcher-TOP Makoto-COP
 ‘It’s Makoto who is the today’s pitcher.’
- b. ano pitcher-wa Makoto-da.
 that pitcher-TOP Makoto-COP
 ‘That pitcher is Makoto.’
- c. Makoto-ga kyō-no pitcher-da.
 Makoto-NOM today-GEN pitcher-COP
 ‘It’s Makoto who is the pitcher.’

(Iwasaki 2002: 243)

However, Iwasaki’s proposal may not be right. According to Lambrecht (1994: 52), presupposition is ‘the set of propositions lexicogrammatically evoked in a sentence which the speaker assumes the hearer already knows or is ready to take for granted at the time the sentence is evoked’. In other words, presupposition is normally background information. In this sense, presupposition is expected to be given information. By contrast, focus is ‘the semantic component of a pragmatically structured proposition whereby the assertion differs from the presupposition’ (Lambrecht 1994: 213). With regard to the

notion of assertion, Lambrecht (1994: 52) defined it as ‘the proposition expressed by a sentence which the hearer is expected to know or believe or take for granted as a result of hearing the sentence uttered’. Note that focus means assertion minus presupposition and that presupposition tends to be given information. Thus, focus is compatible with new information. If presupposition correlates with given information and focus interrelates with new information, the first half of the cleft construction is expected to be given information and the latter half is anticipated to be new information. This leads to the conclusion that the cleft construction generally follows given-new ordering. In this meaning, it is expected not to violate Kuno (1987)’s markedness principle for discourse rule violations; the cleft sentences are marked options but they are considered to follow the preferable discourse structure and thus are not penalized.

To summarize the above discussion, the focus element in the cleft may be cataphorically salient. As for anaphoric saliency, there are two possibilities. The first possibility is that the presupposed element is new information and the focus element is given information. This prediction is based on Iwasaki (2002). The alternative possibility is that the presupposed element is given information and the focus element is new information. This discourse structure is desirable in the sense that it obeys given-new ordering. The relation of the cleft construction to anaphoric and cataphoric saliency must

be explored in further studies. Specifically, whether the focus element in the cleft construction correlates with cataphoric saliency remains an interesting question for future research. By exploring the discourse function of the cleft construction, it will be integrated into the argument encoding system in Japanese appropriately.

In terms of heaviness, numerous studies have looked into its effects on scrambling in Japanese (Hawkins 1994; Imamura 2014, 2015a; Kondo and Yamashita 2011; Suzuki 2000; Yamashita 2002; Yamashita and Chang 2001). Interestingly, however, no studies have examined the relationship between heaviness and postposing. Note that non-pause type postposing is a kind of word order change and thus may be relevant to heaviness. Specifically, the heavy constituent is expected to be postposed when the predicate is urgent or immediately relevant information. If a heavy element is placed before the predicate, the hearer needs to wait for a while for the urgent information to come due to the existence of the heavy constituent. In such a situation, given that the urgent task should be carried out in an early position of the sentence under time pressure, the heavy element interrupts the hearer's comprehension. In contrast, pause type postposing may not be related to heaviness because it is considered to be base-generated. Nakagawa, Asao, and Nagaya (2008) and Seraku (2015) maintain that non-pause type postposing should be distinguished from pause type postposing in terms of the given/new distinction. I also

claim that it is necessary to discern between non-pause type postposing and pause type postposing in terms of heaviness as well as givenness. According to Yamashita (2002), heavy constituents tend to be preposed in order to improve efficiency in the speaker/writer's production of the sentence in Japanese. In other words, heaviness has a great influence on the choice of scrambled word order when the resulting structure is easier to process than its canonical counterpart. Considering the fact that non-pause type postposing correlates with the use of afterthought, this type of postposing is expected to be unrelated to heaviness because the postposed element is added to the sentence after the sentence structure was built and it cannot contribute to reducing processing cost. Needless to say, further studies are needed with regard to the relation between postposing and heaviness.

As opposed to non-pause type postposing, heaviness may not be pertinent to the cleft construction. Many studies have demonstrated that the cleft is strongly influenced by information structure (Hiraiwa and Ishihara 2002; Kuroda 1992; Mihara and Hiraiwa 2006; Seraku 2011, 2013a, b). Specifically, the usage of the cleft construction has been explained by the notion of presupposition and focus. In consequence, the word order of a cleft sentence is strictly restricted not only by the focus element but also by the non-focus one. When one factor is more constraining, the other factor is expected to be weaker if

these two factors have effects on a particular option simultaneously (Arnold et al. 2000; MacDonald 1996). Since the cleft is strongly influenced by information structure, it is expected to be weakly affected by heaviness. Further studies are needed about the relationship between heaviness and the cleft construction.

Although the present study has examined the interaction between word orders and particles, the main limitation of the present work is that only the topic marker *WA*, the nominative case marker *GA*, and the accusative case marker *O* are taken into account. Other particles may interact with word order changes in different ways. For example, the accusative case marker *O* can be substituted not only for *WA* but also for *MO*, as illustrated in (7). The particle *MO* requires ‘the existence of an additional element with the same properties as the referent of what *MO* syntactically combined with’ (Kobuchi-Phillip 2009: 173). Therefore, *MO*-marked referents are expected to be anaphorically salient. In order to interpret the meaning of *MO* in (7c) appropriately, there must be at least one individual aside from *Hanako* who *Taro* found. On the other hand, it is unclear whether *MO*-marked elements are cataphorically salient or not. Moreover, there may be an interaction between the *MO*-marking and the OSV order in terms of information structure. Although the scrambled object is cataphorically nonsalient in general, it is conceivable that the scrambled object becomes cataphorically salient when it is marked with the high

lightening particle *MO*. Anyway, it is necessary to examine the interactions between word order changes and various particles. Some particles may be linked with discourse needs as well as semantic needs.

- (7) a. Hanako-o Taro-ga mitsuke-ta.
 apple-ACC Taro-NOM find-PAST
 ‘Taro found Hanako.’
- b. Hanako-wa Taro-ga mitsuke-ta.
 Hanako-TOP Taro-NOM find-PAST
 ‘Taro found Hanako (but I don’t know about others).’
- c. Hanako-mo Taro-ga mitsuke-ta.
 Hanako-also Taro-NOM find-PAST
 ‘Taro found Hanako (and he found at least another one).’

From a cognitive view point, ‘starting a sentence with a constituent representing given information aids comprehension because it gives the listener/reader a base of information to build on’ (Yamashita 2002: 607). If the scrambled element is not situated at the sentence-initial position, scrambling will not contribute to the purpose of beginning

a sentence with given information. Imamura (2015a) supports this prediction by investigating the effects of givenness on VP-external scrambling such as (8b) and VP-internal scrambling such as (9b). Note that the direct object in OSV is moved from the VP-internal position to the beginning of the sentence (Miyagawa 2001, 2003, 2010; Saito 1985, 2009; Saito and Hoji 1983). This type of word order change is called VP-external scrambling because the direct object is moved to a VP-external position. In contrast, the S-DO-IO-V sentence (9b) derives from the S-IO-DO-V sentence (9a) by moving the direct object from the in-situ position to the position between the subject and the indirect object. It should be noticed that the direct object is not fronted to the sentence-initial position but to the VP-internal position (Hoji 1985). Thus, this type of scrambling is called VP-internal scrambling.

(8) a. SOV

Taro-ga hon-o yon-da.

Taro-NOM book-ACC read-PAST

‘Taro read a book.’

b. OSV

hon-o Taro-ga yon-da.

book-ACC Taro-NOM read-PAST

‘Taro read a book.’

(Imamura 2015a: 1)

(9) a. S-IO-DO-V

Taro-ga Hanako-ni present-o age-ta.

Taro-NOM Hanako-DAT present-ACC give-PAST

‘Taro gave Hanako a present.’

b. S-DO-IO-V

Taro-ga present-o Hanako-ni age-ta.

Taro-NOM present-ACC Hanako-DAT give-PAST

‘Taro gave Hanako a present.’

(Imamura 2015a: 4-5)

Based on the corpus analysis, it was revealed that givenness tends to have a larger effect on VP-external scrambling than on VP-internal scrambling. Indeed, ‘81.91% of scrambled objects are given information in OSV while only 65.63% of scrambling objects in S-DO-IO-V sentences are given information’ (Imamura 2015a: 12-3). Thus, it is

plausible that the discourse status of a moved referent is determined by the place where the landing point of the movement locates. Specifically, the sentence-initial position may have stronger effects on the discourse status of a moved referent than other positions in terms of givenness at least in Japanese. Moreover, Shimojo (2005) observed that postposed elements tend to be given information. Taken together, the sentence-initial position and the sentence-final position may be informationally distinguished from other positions. Another possibility that should be explored is the mapping between syntactic structure and information structure (Endo 2007; Erteschil-Shir 2007; Rizzi 1997; Totsuka 2013, 2015). Specifically, Herring (1990) states that topical referents are expected to be located at the canonical subject position by default. However, this proposal does not make any predictions about non-canonical word orders such as OSV. In order to solve this problem, I propose that given information is normally assigned to the syntactically highest position. In Japanese, the direct object is higher than the subject in OSV order sentences. This may be the reason why the scrambled object tends to be given information. Moreover, my proposal can account for the typological exception to given-new ordering. In the Kaqchikel Maya language, whose basic word order is VOS, the definite NP must follow the indefinite NP and the second NP should be interpreted as the subject (Broadwell 2000). In consequence, the canonical word order (VOS) sentences normally

follow new-before-given ordering, where new information precedes given information. However, if the subject is syntactically higher than the object in VOS, the Kaqchikel Maya language is expected to follow my proposal. In other words, it is plausible that the subject is normally given information due to its syntactic height. Both given-before-new ordering and new-before-given ordering may be derived from the syntactic structure. The validity of my hypothesis should be evaluated in future studies.

On the other hand, 'heaviness has essentially the same effect on VP-internal scrambling as it does on VP-external scrambling. In fact, heaviness correlates with 69.85% of VP-internal scrambled objects and 75.95% of VP-external scrambled objects. The difference is only 6.1%. The effects of heaviness do not vary greatly between scrambling types. When scrambling is chosen because of heaviness, the motivation for this grammatical operation is to reduce processing cost. There is no reason for heaviness to distinguish VP-internal scrambling from VP-external scrambling. This may be the reason why heaviness has the same effect both on VP-internal scrambling and VP-external scrambling. 'Consequently, scrambling-type distinction is not important for heaviness' (Imamura 2015a: 14). It seems that there is no syntactic mapping between heaviness and word order. A word order change is considered to be influenced by heaviness if and only if the resulting structure is easier to process than its canonical word

order. It is the complexity that affects the choice of word orders, not the syntactic structure.

That is why the landing site of a movement is unrelated to the effects of heaviness.

Imamura (2015a: 14) points out that ‘scrambling may be an amalgam of operations motivated by several factors’. For example, Takami (2001: 143) proposes that a scrambled element at the sentence-initial position is interpreted as marked focus and conveys the most important information in the sentence³. As a reply to (10a), the scrambled element *san-ko* ‘three’ should be interpreted as the focus of (10c) because it is an answer to the *wh*-phrase *nan-ko* ‘how many’ in (10a). Moreover, *san-ko* in (10b) is placed in the immediately pre-verbal position, which is normally pertinent to the important or unpredictable information (Kuno 1978). Note that the scrambled sentence (10c) is semantically equivalent to its canonical counterpart (10b). According to Takami (2001:143), the *san-ko* in (10c) is also the focus because it corresponds to the important or unpredictable information in (10b)⁴. Building on these observations, he concludes that scrambled elements are normally focus information. Yet, the scrambled element *san-ko* in (10c) may not be brand-new information in the sense that it is anaphorically related to

³ The scrambled element is called the ‘marked’ focus by Takami (2001) because it is marked in the sense that the frequency of scrambling is very low.

⁴ This logic may not be right if scrambling itself has an influence on the discourse status of *san-ko*. However, the discourse property of *san-ko* as the focus is guaranteed by the fact that *san-ko* is a reply to the *wh*-question. Thus, I presuppose that *san-ko* in (4c) is focus information, independently of Takami’s discussion.

ringo-o nan-ko ‘how many apples’. In other words, scrambled elements are considered to be linked with another referent in the previous discourse (Mihara and Hiraiwa 2006: 109). In this meaning, the classifier *-ko* serves as a discourse-linker between *nan-ko* and *san-ko* in (10). ‘Roughly, *which*-phrases are discourse-linked (D-linked), whereas *who* and *what* are normally not D-linked. When a speaker asks a question like *Which book did you read?*, the range of felicitous answers is limited by a set of books both speaker and hearer have in mind. If the hearer is ignorant of the context assumed by the speaker, a *which*-question sounds odd. Similarly, in a multiple *which*-question like *Which man read which book?* the speaker assumes that both speaker and hearer have a set of men and a set of books in mind, and that the members of ordered man-book pairs in a felicitous answer will be drawn from the sets established in the discourse’ (Pesetsky 1987: 107-8).

- (10)a. Taro-wa ringo-o nan-ko tabe-ta-no?
 Taro-TOP apple-ACC how.many-CL eat-PAST-Q?
 ‘How many apples did Taro eat?’
- b. Taro-wa ringo-o san-ko tabe-ta-yo.
 Taro-TOP apple-ACC 3-CL eat-PAST-FP
 ‘Taro ate three apples.’

c. san-ko	Taro-wa	ringo-o	tabe-ta-yo.
3-CL	Taro-TOP	apple-ACC	eat-PAST-FP

‘Taro ate three apples.’

(Takami 2001: 142)

Mihara and Hiraiwa (2006: 110) admit that scrambled elements are related to discourse-old referents but maintain that they are focus information. Suppose that the speaker and the hearer are talking about local sake. Under this context, not only the canonical word order sentence (11a) but also the scrambled sentence (11b) is acceptable. It should be noted that *Kubota* is a name of local sake in *Niigata* prefecture and thus is related to the hyper-theme *jizake* ‘local sake’. Pragmatically speaking, *Kubota* is bridged with *local sake* because it must be contextually understood that *Kubota* belongs to *local sake* in Niigata. However, *Kubota* is new information in the sense that it is an unpredictable referent from the previous discourse. In this sense, the scrambled object *Kubota* is a new topic derived from the hyper-theme *local sake*.

(11)a. boku-wa	Kubota-o	Niigata-de	non-da-kedo	oishikat-ta-yo.
I-TOP	Kubota-ACC	Niigata-LOC	drink-PAST-LK	good-PAST-FP

‘I drank Kubota in Niigata and it was good.’

b. Kubota-o, boku-wa Niigata-de non-da-kedo oishikat-ta-yo.

Kubot-ACC I-TOP Niigata-LOC drink-PAST-LK good-PAST-FP

‘I drank Kubota in Niigata and it was good.’

(Mihara and Hiraiwa 2006: 110)

To summarize Mihara and Hiraiwa (2006)’s discussion, a scrambled element is related to the referent in the preceding discourse but unpredictable from the previous discourse. This idea agrees with my proposal that scrambled elements tend to be intermediately accessible information (see section 4.4.5). A somewhat related alternative explanation is to hypothesize that pause-type scrambling is relevant to new information whereas the non-pause type scrambling is pertinent to given information. This hypothesis is based on Nakagawa, Asao, and Nagaya (2008)’s proposal that the pause type postposing is germane to new information while the non-pause type postposing is associated with given information. The same tendency may hold of scrambling. It should be noticed that the speaker must place a noticeable pause between the scrambled element *san-ko* and the rest of the sentence in (10c). In the same way, (11b) is typically uttered in two distinct coherent contours with a pause between the scrambled object *Kubota* and the

subject *boku* ‘I’. According to Takami (2001) and Mihara and Hiraiwa (2006), the scrambled elements in (10c) and (11b) are new information. It is therefore possible that pause-type scrambling correlates with new information.

Moreover, it seems that the scrambled object tends to be carried over to the following sentence when it is a *which*-phrase, as shown in (12). The scrambled object *nan-shō* ‘which chapter’ in (12a) becomes the centre of the subsequent sentences (12b) and (12c). Note that the topic of (12b) *issō* ‘chapter 1’ and that of (12c) *nishō* ‘chapter 2’ are d-linked with the *which*-phrase *nan-shō* ‘which chapter’. Further, (12b) and (12c) are topic-comment sentences about *issō* and *nishō* ‘’, respectively. This observation conflicts with my proposal that scrambled objects are cataphorically nonsalient and with the centering algorithm that the subject is more likely than the object to be taken over to the immediately succeeding sentence (Kameyama 1985; Walker, Iida, and Cote 1994). It is conceivable that d-linking has an influence on scrambled referents in terms of cataphoric saliency. Note that a *which*-phrase requires an answer and thus the hearer is expected to talk about it in the following discourse.

(12)a. <i>nan-shō-o</i>	<i>dare-ga</i>	<i>kai-ta-no?</i>
which-chapter-ACC	who-NOM	write-PAST-Q

‘Who wrote which chapter?’

b. isshō-wa	Toshihiro-ga	kai-te,
Chapter 1-TOP	Toshihiro-NOM	write-and

‘Toshihiro wrote Chapter 1 and’

c. nishō-wa	Hiroki-ga	kai-ta-yo.
Chapter 2-TOP	Hiroki-NOM	write-PAST-FP

‘Hiroki wrote Chapter 2 (and I don’t know about the other chapters).’

An important aspect of the present study is that it focusses on the relation between the functions and the constructions in written Japanese. It is a question left for future research whether the argument encoding system proposed in this study can hold of spoken Japanese. It is conceivable that word order changes in spoken Japanese exhibit distinctive discourse properties which are not observed in word order changes in written Japanese (Seraku 2015). According to Shimojo (2005: 259), ‘what clearly distinguishes spoken and written language is the greater leeway in planning discourse and processing information associated with the latter. Writing and reading allow more time for both the writer and the reader to plan the discourse and process the information than speaking and listening. The greater time pressure that is associated with spoken language and of monitoring a

conversational interaction account for the cross-linguistically observed nature of spoken language, which is characterized as simplification of the task for the listener'. The difference between written Japanese and spoken Japanese may be reflected in the use of a certain construction. For example, Clancy (1982) found that relative clauses in spoken Japanese were normally very short and utilized in order to clarify the identity of an already familiar character, whereas relative clauses in written Japanese generally comprise new or unpredictable information. This fact illustrates that the distinction between spoken Japanese and written Japanese should be taken into consideration in order to identify the function of a construction. The related problem repeatedly discussed in previous literature is the issue of 'register'. The function of a certain grammatical option may vary across different genres of discourse. For example, Yamamoto (1984) found that agentless passives are associated with obscure, unknown, or indefinite agents in journalistic texts, but in novels, they are relevant to agents whose referents are clear from the discourse contexts. In other words, the fundamental function of agentless passives changes in accordance with the register. It remains to be seen whether the argument encoding system proposed in the present study can be applied in any genre of written Japanese. It is quite possible that some functions are relevant to a specific register of language use. For example, academic writing may correlate with formal meaning.

One of the shortcomings of the present study lies in the fact that my analysis does not take into consideration the notion of ‘discourse boundary’, which arises when the speaker/writer concludes one episode and starts another one. ‘Just as a narrative discourse is made up of episodes, a conversational discourse can be considered to be made up of units. Each unit is concerned with the same discourse topic. When the conversation shifts from one unit to another, it crosses a discourse boundary’ (Suzuki 1995: 609). The reason why discourse boundaries are not specially considered in the present study is that they are so vague that the turning points of a story are not easily identifiable. However, the concept of discourse boundary poses a problem for the Givónian approach. When a referent exists at the beginning of a new discourse, it may traverse the discourse boundary between the previous discourse and the new one. In such a situation, even if it is deactivated in the speaker/writer’s cognitive focus of attention, its RD value will be very low by chance. Note that its antecedent happens to be mentioned in the previous discourse. This case is a counterexample to the Givón (1983)’s theoretical presupposition that text continuity correlates with mental accessibility. Generally speaking, when a particular referent is referred to in the text, the information becomes activated in the writer’s cognitive attention. Yet, when a referent gets across a discourse boundary, that referent is expected to decay in his or her cognitive attention. In such a case, the RD value does not reflect the

level of activation of a particular referent in the writer's consciousness. By taking discourse boundaries into account, the number of the counterexamples for my proposal may be reduced.

The findings of a corpus analysis performed in the present study make clear the methodological shortcomings of the experimental and corpus approaches. In the experiment carried out by Tanaka et al. (2011), the choice of word orders is affected by animacy. In contrast, the present corpus analysis has demonstrated that animacy has no influence on the linear order of constituents. Thus, it is necessary for linguists to be aware of the gap between the experiment and the corpus and to pay attention to why the discrepancy occurs. We should not reach the conclusion about the functional aspects of a certain grammatical option only on the basis of the corpus. The subtle effects of a certain factor may not be reflected in the corpus. In the same way, we should not explore the mechanism of sentence processing only on the basis of the experiment. The corpus presented in this study provides an empirical basis upon which the assumptions from the experiment can be tested. The implications and consequences of the present proposal are that it is essential to evaluate the validity of the findings from one method by using another method.

A full endeavor to deal with all the issues raised in this chapter is beyond the scope

of this study. I leave these issues open for further studies that can systematically parcel out contributions of various factors for the use of word order changes, zero pronouns, particles, passives, and clefts.

References

- Aissen, J. (1992). Topic and focus in Mayan. *Language*, 68, 43–80.
- Aissen, J. (1999). Markedness and subject choice in optimality theory. *Natural Language and Linguistic Theory*, 17, 673-711.
- Arnold, J. E., Losongco, A., Wasow, T. & Ginstrom, R. (2000). Heaviness vs. newness: The effects of structural complexity and discourse status on constituent ordering. *Language*, 76, 28-55.
- Arrese, J. I. M. (1997). Cognitive and discourse – Pragmatic factors in passivization. *Atlantis*, 19, 203-18.
- Baker, M. C. (1988). *Incorporation: A theory of grammatical function changing*. Chicago: University of Chicago Press.
- Birner, B. (1996). Form and function in English by-phrase passives. *Chicago Linguistic Society*, 32, 23-31.
- Birner, B. (2004). Discourse functions at the periphery: Noncanonical word order in English. *ZAS Papers in Linguistics*, 35, 41-62.
- Birner, B., Kaplan, J. P. & Ward, G. (2007). Functional compositionality and the interaction of discourse constraints. *Language* 83, 317-343.
- Birner, B. & Mahootian, S. (1996). Functional constraints on inversion in English and Farsi. *Language Sciences*, 18, 127-138.
- Birner, B. & Ward, G. (1998). *Information status and Noncanonical word order in English*. Amsterdam: John Benjamins Publishing.
- Birner, B. & Ward, G. (2006). Information structure. In B. Aarts & A. McMahon (eds), *The Handbook of English Linguistics*, 291-317. MA: Blackwell Publishing.
- Birner, B. & Ward, G. (2009). Information structure and syntactic structure. *Language and Linguistic Compass*, 3, 1167-87.
- Bock, J. K. (1987). Coordinating words and syntax in speech plans. *Progress in the psychology of language*, 3, 337-390.
- Bock, J. K., Loebell, H., & Morey, R. (1992). From conceptual roles to structural relations: bridging the syntactic cleft. *Psychological review* 99, 150-171.
- Bock, J. K., & Warren, R. K. (1985). Conceptual accessibility and syntactic structure in sentence formulation. *Cognition*, 21, 47-67.
- Branigan, H. P., Pickering, M. J. & Tanaka, M. (2008). Contributions of animacy to grammatical function assignment and word order during production. *Lingua*, 118, 172-189.
- Bresnan, J., Cueni, A., Nikitina, T. & Baayen, R.H. (2007). Predicting the dative alternation. In: G. Bouma, I. Kraemer, & J. Zwarts (eds.), *Cognitive Foundations of Interpretation*, 69-94.

- Amsterdam: Royal Netherlands Academy of Science.
- Broadwell, G. A. (2000). Word order and markedness in Kaqchikel. In M. Butt & T. King (eds.), *Proceedings of the LFG00 Conference*, 44-62. Stanford: CSLI Publications.
- Chafe, W. (1970). *Meaning and the structure of language*. Illinois: The University of Chicago Press.
- Chafe, W. (1976). Givenness, contrastiveness, definiteness, subjects, topics and points of View. In C. Li (ed.), *Subject and Topic*, 25-55. New York: Academic Press.
- Chafe, W. (1987). Cognitive constraints and information flow. In R. Tomlin (ed.), *Coherence and grounding in discourse*, 21-55. Amsterdam: John Benjamins Publishing.
- Chafe, W. (1994). *Discourse, consciousness and time: The flow and displacement of conscious experience in speaking and writing*. Chicago: The University of Chicago Press.
- Chujo, K. (1983). Nihongo tanbun-no rikai katei — Bunrikai sutoratejii no sougo kankei [The Interrelationships among Strategies for Sentence Comprehension]. *Japanese Journal of Psychology*, 54, 250–6.
- Chomsky, N. (1981). *Lectures on Government and Binding*. Dordrecht, Holland: Foris.
- Cinque, G. (1993). A null theory of phrase and compound stress. *Linguistic Inquiry*, 24, 239-97.
- Clancy, P. (1982). Integration and involvement in speaking, writing, and oral literature. In T. Tannen (ed.), *Spoken and Written Language*, 35-53. Norwood, NJ: Ablex.
- Clancy, P. & Downing, P. (1987). The use of *WA* as a cohesion marker in Japanese oral narratives. In J. Hinds, S. Iwasaki & S. K. Maynard (eds), *Perspectives on topicalization: The case of Japanese WA*, 3-56. Amsterdam: John Benjamins Publishing.
- Cochran, W. G. (1954). Some methods for strengthening the common χ^2 -tests. *Biometrics*, 10, 417-451.
- Comrie, B. (1988). Passive and voice. In M. Shibatani (ed.), *Passive and Voice*, 9-23. Amsterdam: John Benjamins Publishing.
- Cooreman, A. (1982). Topicality, ergativity and transitivity in narrative discourse: Evidence from Chamorro. *Studies in Language*, 6, 343-74.
- Cooreman, A. (1985). *Transitivity and discourse continuity in Chamorro narratives*. Doctoral dissertation, University of Oregon.
- Cooreman, A. (1987). *Transitivity and discourse continuity in Chamorro narratives*. Berlin: Mouton de Gruyter.
- Cooreman, A. (1992). The pragmatics of word order variation in Chamorro narrative text. In P. Doris (ed.), *Pragmatics of word order flexibility*, 243-64. Oregon: John Benjamins Publishing.
- Dahl, Ö. (2008). Animacy and egophoricity: Grammar, ontology and phylogeny. *Lingua*, 118, 141-150.

- Dahl, Ö. & Fraurud, K. (1996). Animacy in grammar and discourse. In Th. Fretheim & J. K. Gundel (eds.), *Reference and Referent Accessibility*, 47-64. Amsterdam: John Benjamins Publishing.
- Dixon, R. M. W. (1979). Ergativity. *Language*, 55, 59-138.
- Dixon, R. M. W. & Aikhenvald, A. Y. (1997). A typology of argument –determined constructions. In J. Bybee, J. Haiman & S. A. Thompson (eds.), *Essays on Language Function and Language Type*, 71-113. Amsterdam: John Benjamins Publishing.
- Dixon, R. M. W. & Aikhenvald, A. Y. (2000). Changing valency: Case studies in transitivity. Cambridge: Cambridge University Press.
- Du Bois, J. W. (1987). The discourse basis of ergativity. *Language*, 63, 805-855.
- Dryer, M. (1980). The positional tendencies of sentential noun phrases in Universal Grammar. *The Canadian Journal of Linguistics*, 25, 123-195.
- Endo, Y. (2007). *Locality and information structure: A cartographic approach to Japanese*. Amsterdam: John Benjamins Publishing.
- Erdocia, K., Laka, I., Mestres-Missé, A., & Rodriguez-Fornells, A. (2009). Syntactic complexity and ambiguity resolution in a free word order language: Behavioral and electrophysiological evidences from Basque. *Brain and language*, 109, 1-17.
- Erteschik-Shir, N. (2007). *Information structure: The syntax-discourse interface*. Oxford: Oxford University Press.
- Farmer, A. (1984). *Modularity in syntax: A study of Japanese and English*. Cambridge, MA: MIT Press.
- Ferreira, F. (1994). Choice of passive voice is affected by verb type and animacy. *Journal of Memory and Language*, 33, 715-736.
- Ferreira, V. S. & Yoshita, H. (2003). Given-new ordering effects on the production of scrambled sentences in Japanese. *Journal of psycholinguistic research*, 32, 669-692.
- Firbas, J. (1964). On defining the Theme in functional sentence perspective. *Travaux Linguistiques de Prague*, 1, 267-80.
- Firbas, J. (1966). Non-thematic subjects in contemporary English. *Travaux Linguistiques de Prague*, 2, 239-56.
- Firbas, J. (1992). *Functional sentence perspective in written and spoken communication*. Cambridge: Cambridge University Press.
- Foley, W. A. (1994). Information structure. *The encyclopedia of language and linguistics*, 3, 1678-1685.
- Ford, M. (1983). A method for obtaining measures of local parsing complexity throughout sentences. *Journal of Verbal Learning and Verbal Behavior*, 22, 203-218.
- Frazier, L. (1987). Syntactic processing: Evidence from Dutch. *Natural Language and Linguistic*

- Theory*, 5, 519-559.
- Frazier, L. & Flores d'Arcais, G. B. (1989). Filler-driven Parsing: A Study of Gap-filling in Dutch. *Journal of Memory and Language*, 28, 331-344.
- Frazier, L. & Fodor, J. D. (1978). The sausage machine: A new two-stage parsing model. *Cognition*, 6, 291-325.
- Fujii, Y. (1991). Reversed word order in Japanese: A discourse pragmatic analysis. *Gengo Kenkyū*, 99, 58-81.
- Fukuda, S. (2011). Two types of *by*-phrase in Japanese passive. *Japanese / Korean Linguistics*, 18, 253-265.
- Fukui, N. (1986) *A theory of category projection and its implications*. Doctoral dissertation, MIT.
- Fukui, N. (1993). Parameters and optionality. *Linguistic Inquiry*, 24, 399-420.
- Gibson, E. (1998). Linguistic complexity: Locality of syntactic dependencies. *Cognition*, 68, 1-76.
- Givón, T. (1977). The drift from VSO to SVO in Biblical Hebrew: The pragmatics of tense-aspect. In C. Li (ed.), *Mechanisms for Syntactic Change*, 181-254. Austin: University of Texas Press.
- Givón, T. (1978). Definiteness and referentiality. In J. Greenberg, C. Ferguson & E. Moravcsik (eds.), *Universals of Human Language*, vol 4: *Syntax*, 291-330. Stanford: Stanford University Press.
- Givón, T. (1979). *On understanding grammar*. New York: Academic Press.
- Givón, T. (1983). Topic continuity in discourse: An introduction. In T. Givón (ed.), *Topic Continuity in Discourse*, 5-41. Amsterdam: John Benjamins Publishing.
- Givón, T. (1988). The pragmatics of word-order: Predictability, importance and attention. In M. Hammond, E. Moravcsik & J. Wirth (eds.), *Studies in syntactic typology*, 243-284. Amsterdam: John Benjamins Publishing.
- Givón, T. (1990). *Syntax: A functional-typological Introduction*. Vol. 2. Amsterdam: John Benjamins Publishing.
- Givón, T. (1993). Coherence in text, coherence in mind. *Pragmatics & Cognition*, 1, 171-227.
- Givón, T. (1994). The pragmatics of de-transitive voice: Functional and typological aspects of inversion. In T. Givón (ed.), *Voice and inversion*, 3-47. Amsterdam: John Benjamins Publishing.
- Givón, T. (2001). *Syntax: An introduction*. Amsterdam: John Benjamins Publishing.
- Gordon, P. C. & Chan, D. (1995). Pronouns, passives, and discourse coherence. *Journal of Memory and Language*, 34, 216-31.
- Gordon, P. C., Grosz, B. J. & Gilliom, L. A. (1993). Pronouns, names, and the centering of attention in discourse. *Cognitive science*, 17, 311-347.
- Greenberg, J. (1966). *Language universals. With special reference to feature hierarchies*. The Hague: Mouton de Gruyter.
- Gries, S. T. (2003). *Multifactorial analysis in corpus linguistics: A study of particle placement*.

New York, NY: Continuum.

- Grimshaw, J. & Vikner, S. (1993). Obligatory adjuncts and the structure of events. In, E. Reuland & W. Abraham (eds.), *Knowledge and language II: Lexical and conceptual structure*, 143-55. Dordrecht: Kluwer Academic Publishers.
- Grodner, D. & Gibson, E. (2005). Consequences of the serial nature of linguistic input for sentential complexity. *Cognitive Science*, 29, 261-290.
- Halliday, M. A. K. (1973). *Explorations in the functions of language*. London: Edward Arnold.
- Hashimoto, S. (1969). *Joshi, jōdōshi-no kenkyū* [A study of particles and auxiliary verbs]. Tokyo: Iwanami Shoten.
- Haspelmath, M. (1990). The grammaticalization of passive morphology. *Studies in Language*, 14, 25-72.
- Harada, S.I. (1977). Nihongo ni henkei wa hitsuyō da [Transformation is necessary in Japanese]. *Gengo*, 6, 88-95.
- Hawkins, J. A. (1990). A parsing theory of word order universals. *Linguistic inquiry*, 21, 223-261.
- Hawkins, J. A. (1992). Syntactic weight versus information structure in word order variation. In J. Jacob (ed.), *Informationsstruktur und Grammatik*, 196-219. Opladen: Westdeutscher Verlag.
- Hawkins, J. A. (1994). *A performance theory of order and constituency*. Cambridge: Cambridge University Press.
- Hawkins, J.A. (2000). The relative order of prepositional phrases in English: Going beyond manner - place - time. *Language Variation and Change*, 11, 231-266.
- Hawkins, J. A. (2004). Efficiency and complexity in grammars. Oxford: Oxford University Press.
- Hawkins, J. A. (2009). An efficiency theory of complexity and related phenomena. In G. Sampson, D. Gill & P. Trudgill (eds.), *Complexity as an evolving variable*, 252-268. Oxford/ New York: Oxford University Press.
- Heidinger, S. (2013). Information focus, syntactic weight and postverbal constituent order in Spanish. *Borealis: An International Journal of Hispanic Linguistics*, 2, 159-190.
- Herring, S. (1990). Information structure as a consequence of word order type. *Berkeley Linguistics Society*, 16, 163-74.
- Hinds, J. (1978). Anaphora in Japanese conversation. In J. Hinds (ed.), *Anaphora in discourse*, 136-179. Alberta: Linguistic Research Inc.
- Hinds, J. (1982). *Ellipsis in Japanese discourse*. Alberta, Canada: Linguistic Research, Inc.
- Hinds, J. (1983). Topic continuity in Japanese. In T. Givón. (ed.), *Topic continuity in discourse: A crosslinguistic quantitative study*, 43-93. Amsterdam: John Benjamins Publishing.
- Hinds, J. & Hinds, W. (1979). Participant identification in Japanese narrative discourse. In G. Bedell, E. Kobayashi & M. Muraki (eds.), *Explorations in Linguistics: Papers in Honor of Kazuko Inoue*, 201-12. Tokyo: Kenkyusha

- Hiraiwa, K. & Ishihara, S. (2002). Missing links: Clefts, sluicing, and ‘no da’ construction in Japanese. *MIT Working Papers in Linguistics*, 43, 35-54.
- Hoffman, B. (1998). Word order, information structure, and centering in Turkish. In M.A. Walker, A. K. Joshi & E. F. Prince (eds.), *Centering theory in discourse*, 251-72. Oxford: Clarendon Press.
- Hoji, H. (1985). *Logical form constraints and configurational structures in Japanese*. Doctoral dissertation, University of Washington.
- Hoji, H. (1987). *Japanese clefts and chain binding/reconstruction effects*. Ms., University of Southern California.
- Hoji, H. (1990). *Theories of anaphora and aspects of Japanese syntax*. Ms., University of Southern California.
- Hopper, P. & Thompson, S. (1980). Transitivity in grammar and discourse. *Language*, 56, 251-99.
- Hoshi, H. (1991). The generalized projection principle and its implications for passive constructions. *Journal of Japanese Linguistics*, 13, 53-89.
- Hoshi, H. (1994). Theta-role assignment, passivization, and excorporation. *Journal of East Asian Linguistics*, 3, 147-78.
- Hoshi, H. (1999). Passives. In N. Tsujimura (ed.), *The Handbook of Japanese Linguistics*, 191-235. Oxford: Blackwell Publishers.
- Hudson, M. E. (1993). Processing constraints on Japanese postposing. *Paper presented at the 4th International Pragmatics Conference, Kobe, Japan*.
- Imamura, S. (2014). The Influence of givenness and heaviness on OSV in Japanese. In W. Aroonmanakun, P. Boonkwan & T. Supnithi (eds.), *Proceedings of the 28th Pacific Asia Conference on Language, Information and Computation*, 224-233. Bangkok: Chulalongkorn University.
- Imamura, S. (2015a). The effects of givenness and heaviness on VP-internal scrambling and VP-external scrambling in Japanese. *Studies in Pragmatics*, 17, 1-16.
- Imamura, S. (2015b). Markedness and argument structure. *Tohoku Studies in Linguistics*, 24, 121-128.
- Imamura, S. (2016a). A corpus-based analysis of scrambling in Japanese in terms of anaphoric and cataphoric co-referencing. *Research in Corpus Linguistics*, 4 (to appear).
- Imamura, S. (2016b). *A pragmatic account of scrambling and topicalization in Japanese*. Ms., University of Oxford. [Submitted to *Lingua*]
- Imamura, S. & Helgason, E. A. (2016). Interaction between scrambling and topic marker *WA* in centering theory. *Gengokagaku Ronshū*, 20, 25-35.
- Imamura, S., Helgason, E.A. & Koizumi, M. (2013). A functional analysis of Japanese passives.

- Proceedings of the 16th Conference of the Pragmatics Society of Japan*, 209-216. Kyoto: Pragmatics Society of Japan.
- Imamura, S., Helgason, E. A. & Koizumi, M. (2014). A criterion for choosing between nominative case marker *GA*, topic marker *WA*, and zero pronouns in Japanese. *Tohoku Studies in Linguistics*, 23, 47-59.
- Imamura, S. & Koizumi, M. (2011). A centering analysis of word order in Japanese. *Tohoku Studies in Linguistics*, 20, 59-74.
- Imamura, S. & Koizumi, M. (2012). Kakimazebun-to zeromokuteigo-no danwakinō-niokeru sōhobunpusei [Complementary distribution between scrambling and zero object in discourse function]. *Proceedings of the 144th Conference of the Linguistics Society of Japan*, 86-92. Kyoto: Linguistics Society of Japan.
- Imamura, S., Sato, Y. & Koizumi, M. (2014). Influence of Information Structure on Word Order Change and Topic Marker *WA* in Japanese. In W. Aroonmanakun, P. Boonkwan & T. Supnithi (eds.), *Proceedings of the 28th Pacific Asia Conference on Language, Information and Computation*, 432-441. Bangkok: Chulalongkorn University.
- Imamura, S., Sato, Y. & Koizumi, M. (2016). The processing cost of scrambling and topicalization in Japanese. *Frontiers in Psychology*, 7, 1-12. doi: 10.3389/fpsyg.2016.00531
- Inoue, K. (1976). *Henkei bunpō-to Nihongo* [Transformational grammar and Japanese]. Tokyo: Taishūkan.
- Ishii, Y. (2001). Presuppositional effects of scrambling reconsidered. In K. Inoue. & N. Hasegawa (eds), *Linguistics and Interdisciplinary Research: Proceedings of the COE International Symposium. Center of Excellence in Linguistics*, 79-101. Tokyo: Kanda University of International Studies.
- Ishizuka, T. (2010). *Toward a unified analysis of passives in Japanese: A cartographic minimalist approach*. Doctoral dissertation, University of California Los Angeles.
- Isoe, G. (1992). *The Japanese particles WA and GA: A quantitative study of a text*. Doctoral dissertation, University of Michigan.
- Iwasaki, S. (2002). *Japanese*. Amsterdam & Philadelphia. Philadelphia: John Benjamins Publishing.
- Jelinek, E. & Demers, R. (1983). The agent hierarchy and voice in some Coast Salish languages. *International Journal of American Linguistics*, 49, 167-85.
- Jelinek, E. & Demers, R. (1994). Predicates and pronominal arguments in Straits Salish. *Language*, 70, 697-736.
- Jucker, A. (1993). The genitive versus the of-construction in newspaper language. In A. Jucker (ed.), *The noun phrase in English: Its structure and variability*, 121-136. Heidelberg: Carl Winter.

- Jucker, A. & Taavitsainen, I. (2013). *English historical pragmatics*. Edinburgh: Edinburgh University Press.
- Kahraman, B. (2013). Word Order Preferences of Ditransitives in Turkish. *MIT Working Papers in Linguistics*, 67, 175-180.
- Kaiser, E. & Trueswell, J. C. (2004). The role of discourse context in the processing of a flexible word-order language. *Cognition*, 94, 113-147.
- Kameyama, M. (1985). *Zero anaphora: the case of Japanese*. Doctoral dissertation, Stanford University.
- Kamio, A. & Takami, K. (1998). *Danwa-to jōhōkōzō* [Discourse and Information structure]. Tokyo: Kenkyusha.
- Karimi, H., Fukumura, K., Ferreira, F. & Pickering, M. J. (2014). The effect of noun phrase length on the form of referring expressions. *Memory & cognition*, 42, 993-1009.
- Keenan, E. L. (1985). Passive in the world's languages. In T. Shopen (ed.), *Language Typology and Syntactic Description, vol. 1: Clause Structure*, 243-81. Cambridge: Cambridge University Press.
- Kempen, G., & Harbusch, K. (2004). A corpus study into word order variation in German subordinate clauses: Animacy affects linearization independently of grammatical function assignment. In T. Pechmann & C. Habel (eds.), *Multidisciplinary Approaches to Language production*, 173-181. Berlin/ New York: Mouton de Gruyter.
- King, J. & Just, M. A. (1991). Individual differences in syntactic processing: The role of working memory. *Journal of Memory and Language*, 30, 580-602.
- Kinsui, S. (1997). The influence of translation on the historical development of the Japanese passive construction. *Journal of Pragmatics*, 28, 759-79.
- Kishimoto, H. (2001). Binding of indeterminate pronouns and clause structure in Japanese. *Linguistic Inquiry*, 32, 597-633.
- Kiss, K. É. (1998). Identificational focus versus information focus. *Language*, 74, 245-73.
- Kizach, J. & Balling, L. W. (2013). Givenness, complexity, and the Danish dative alternation. *Memory & cognition*, 41, 1159-1171.
- Kobuchi-Philip, M. (2009). Japanese Mo: Universal, Additive, and NPI. *Journal of Cognitive Science*, 10, 172-94.
- Koizumi, M. (1995). Phrase structure in minimalist syntax. Doctoral dissertation, MIT.
- Koizumi, M. & Imamura, S. (2016). Interactions between syntactic structure and Information structure in the processing of a head-final language. *Journal of Psycholinguistic Research*, 1-14. doi: 10.1007/s10936-016-9433-3 [E-publication ahead of print].
- Koizumi, M. & Tamaoka, K. (2010). Psycholinguistic evidence for the VP-internal subject position in Japanese. *Linguistic Inquiry*, 41, 663-80.

- Koizumi, M., Yasugi, Y., Tamaoka, K., Kiyama, S., Kim, J., Sian, J. E. A. & Mátzar, L. P. O. G. (2014). On the (non) universality of the preference for subject-object word order in sentence comprehension: A sentence-processing study in Kaqchikel Maya. *Language*, 90, 722-736.
- Kondo, T. & Yamashita, H. (2011). Why speakers produce scrambled sentences: an analysis of a spoken language corpus in Japanese. In H. Yamashita, Y. Hirose & J. L. Packard (eds.), *Processing and Producing Head-Final Structures*, 195-217. New York: Springer.
- Kuginuki, T. (1991). Jodōshi ru/raru, su/sasu seiritsu-no rekishiteki jōken [The historical condition of the formation of auxiliary verbs ru/raru (passive) and su/sasu (causative)]. *Kokugogaku*, 164, 15-28.
- Kuno, S. (1972). Functional sentence perspective: A case study from Japanese and English. *Linguistic Inquiry*, 3, 269-320.
- Kuno, S. (1973a). *The structure of the Japanese language*. Cambridge, Mass: MIT Press.
- Kuno, S. (1973b). *Nihon bunpō kenkyū* [Study of Japanese grammar]. Tokyo: Taishūkan.
- Kuno, S. (1978). *Danwa-no bunpō* [Grammar of discourse]. Tokyo: Taishūkan.
- Kuno, S. (1983). *Shin Nihon bunpō kenkyū* [New study of Japanese grammar]. Tokyo: Taishūkan.
- Kuno, S. (1986). Ukemi-no imi Kuroda-setsu-no sai-hihan [The meaning of passives. Recriticism of Kuroda's hypothesis]. *Nihongogaku*, 5, 70-87.
- Kuno, S. (1987). *Functional syntax: Anaphora, discourse and empathy*. The University of Chicago Press.
- Kuno, S. (1990). Passivization and thematization. In O. Kamada & W. M. Jacobsen (eds.), *On Japanese and how to teach it: In honor of Seiichi Makino*, 43-66. Tokyo: Japan Times.
- Kuno, S. (1995). Null elements in parallel structures in Japanese. In R. Mazuka & N. Nagai (eds.), *Japanese Sentence Processing*, 209-33. Hillsdale, NJ: Erlbaum.
- Kuno, S. (2004). Empathy and direct discourse perspective. In L. R. Horn & G. Ward (eds.), *The Handbook of Pragmatics*, 315-43. Malden, MA: Blackwell.
- Kuno, S & Kaburaki, E. (1977). Empathy and syntax. *Linguistic Inquiry*, 8, 627-72.
- Kuno, S. & Takami, K. (2004). *Functional constraints in grammar: On the unergative – unaccusative distinction*. Philadelphia: John Benjamins Publishing.
- Kuroda, S-Y. (1979). On Japanese passives. In G. Bedell, E. Kobayashi & M. Muraki (eds.), *Exploration in Linguistics: Papers in Honor of Kazuko Inoue*, 305-47. Tokyo: Kenkyūsha.
- Kuroda, S-Y. (1985). Ukemi-nituiteno Kuno-setsu-o kaishaku-suru -hitotsu-no hanhihan [Reinterpreting Kuno's theory about passives as an anti-criticism]. *Nihongogaku*, 4, 69-76.
- Kuroda, S-Y. (1987). Movement of noun phrases in Japanese. In T. Imai & M. Saito (eds), *Issues in Japanese linguistics*, 229-271. Dordrecht: Foris.
- Kuroda, S-Y. (1988). Whether we agree or not. In W. Poser (ed.), *Papers from the Second International Workshop on Japanese Syntax*, 103-143. Stanford: CSLI Publications.

- Kuroda, S-Y. (1992). *Japanese syntax and semantics: Collected papers*. Dordrecht: Kluwer Academic Publishers.
- Lambrecht, K. (1996). *Information structure and sentence form: Topic, focus, and the mental representations of discourse referents*. Cambridge: Cambridge University Publishing.
- Lee, D-Y. (2002). The function of the zero particle with special reference to spoken Japanese. *Journal of Pragmatics*, 34, 645-82.
- Leech, G., Francis, B. & Xu, X. (1994). The use of computer corpora in the textual demonstrability of gradience in linguistic categories. In C. Fuchs & B. Victorri (eds.), *Continuity in linguistic semantics*, 57-76. Amsterdam/Philadelphia: John Benjamins Publishing.
- Lohmann, A. & Takada, T. (2014). Order in NP conjuncts in spoken English and Japanese. *Lingua*, 152, 48-64.
- Maekawa, K. (2004). Design, complication, and some preliminary analyses of the Corpus of Spontaneous Japanese. *Spontaneous speech: Data and analysis*, 3, 87-108.
- Maekawa, K., Yamazaki, M., Ogiso, T., Maruyama, T., Ogura, H., Kashino, W., Koiso, H., Yamaguchi, M., Tanaka, M. & Den, Y. (2008). Balanced corpus of contemporary written Japanese. *Language Resources and Evaluation*, 48, 345-71.
- Mak, W. M., Vonk, W. & Schriefers, H. (2008) Discourse structure and relative clause processing. *Memory & Cognition*, 36, 170-181.
- Makino, S. (1982). Japanese grammar and functional grammar. *Lingua*, 57, 125-73.
- Maratsos, M. (1978). New models in linguistics and language acquisition. In G. Miller, J. Bresnan & M. Halle (eds.), *Linguistic Theory and Psychological reality*, 247-63. Cambridge, MA: MIT Press.
- Masunaga, K. (1983). Bridging. In S. Hattori & K. Inoue (eds.), *Proceedings of the XIIIth International Congress of Linguistics*, 455-460. Tokyo: Proceedings Publishing Committee.
- Masuoka, T. (1982). Nihongo judōbun-no imibunseki [Semantic analysis of Japanese passives]. *Gengo Kenkyu*, 82, 48-64.
- Masuoka, T. (1991). *Judōhyōgen-to shukansei* [Passive expressions and subjectivity]. In Y. Nitta. (ed.), *Nihongo-no voice-to tadōsei* [Japanese voice and transitivity], 105-21. Tokyo: Kuroshio Shuppan.
- Matsushita, D. (1930). *Hyōjun nihon kōgohō* [The standard colloquial Japanese]. Tokyo: Chūbunkan Shoten.
- Maynard, S. K. (1989). *Japanese conversation: Self-contextualization through structure and interactional management*. Norwood, NJ: Ablex.
- Mazuka, R., Itoh, K. & Kondo, T. (2002). Costs of scrambling in Japanese sentence processing. In M. Nakayama (ed.), *Sentence processing in East Asian languages*, 131-66. Stanford: CSLI

Publications.

- McCready, E. (2009). Particles: Dynamics vs. utility. *Japanese / Korean Linguistics*, 16, 466-81.
- MacDonald, M. C. (1996). Representation and activation in syntactic processing. In T. Inui & J. L. McClelland (eds.), *Attention and performance 16: Information integration in perception and communication*, 433-453. Cambridge, MA: MIT Press.
- McDonald, J. L., Bock, J. K. & Kelly, M. H. (1993). Word and world order: Semantic, phonological, and metrical determinants of serial position. *Cognitive Psychology*, 25, 188-230.
- McGloin, N. H. (1987). The role of WA in negation. In J. Hinds, S. K. Maynard & S. Iwasaki (eds.), *Perspectives on Topicalization: The Case of Japanese 'WA'*, 165-83. Amsterdam: John Benjamins Publishing.
- McGloin, N. H. (1990). The Pragmatics of object topicalization in Japanese. In O. Kamada & W. M. Jacobsen (eds), *On Japanese and How to teach it: in Honor of Seiich Makino*, 111-20. Tokyo: Japan Times.
- Mihara, K. & Hiraiwa, K. (2006). *Shin Nihongo-no tōgo kōzō* [New syntactic structure of Japanese]. Tokyo: Shōhakusha.
- Mikami, A. (1963). *Nihongo no ronri - WA to GA* [Logic of the Japanese Language]. Tokyo: Kuroshio Shuppan.
- Mitsuya, S. (1908). *Kōtō Nihon bunpō* [Advanced Japanese grammar]. Tokyo: Meiji Shoin.
- Miyagawa, S. (1987). WA and the wh-phrase. In J. Hinds, S. K. Maynard & S. Iwasaki (eds.), *Perspectives on Topicalization: The Case of Japanese 'WA'*, 185-217. Amsterdam: John Benjamins Publishing.
- Miyagawa, S. (1989). Light verbs and the ergative hypothesis. *Linguistic Inquiry*, 20, 659-68.
- Miyagawa, S. (2001). The EPP, scrambling and *wh-in-situ*. In M. Kenstowicz (ed.), *Ken Hale: A life in language*, 293-338. Cambridge, Mass: MIT Press.
- Miyagawa, S. (2003). *A-movement scrambling and options without optionality*. In S. Karimi (ed.), *Word order and scrambling*, 177-200. Oxford: Blackwell Publishers.
- Miyagawa, S. (2010). *Why Agree? why move? unifying agreement-based and discourse-configurational languages*. Cambridge: MIT Press.
- Miyagawa, S. & Tsujioka, T. (2004). Argument structure and ditransitive verbs in Japanese. *Journal of East Asian Linguistics*, 13, 1-38.
- Miyamoto, E. T. & Takahashi, S. (2002). Sources of Difficulty in Processing Scrambling in Japanese. In M. Nakayama (ed.), *Sentence Processing in East Asian Languages*, 167-88. Stanford: CSLI Publications.
- Muraki, S. (1991). Voice-no category-to bunkōzō-no-level [Category of voice and level of sentence structure], In Y. Nitta (ed.), *Nihongo-no Voice-to Tadōsei* [Voice and transitivity in

- Japanese], 1-30. Tokyo: Kuroshio Shuppan.
- Myhill, J. (1992). *Typological discourse analysis: Quantitative approaches to the study of linguistic function*. Oxford: Blackwell.
- Nakagawa, N., Asao, Y. & Nagaya, N. (2008). Information structure and intonation of right-dislocation sentences in Japanese. *Kyoto University Linguistic Research*, 27, 1-22.
- Nariyama, S. (2000). *Referent identification for ellipted arguments in Japanese*. Doctoral dissertation, University of Melbourne.
- Nitta, Y. (1991). *Voice-teki hyōgen-to jikoseigyosei* [Voice related expressions and self-controllability]. In Y. Nitta (ed.), *Nihongo-no Voice-to Tadōsei* [Voice and transitivity in Japanese], 31-57. Tokyo: Kuroshio Shuppan.
- Niwa, T. (1989). Mujoshikaku no kinō [The function of zero particle]. *Kokugo kenkyū*, 58, 38-57.
- Nomura, J. (2008). *Japanese postposing*. Doctoral dissertation, University of Hawaii.
- Ohno, S. (1988). *Nihongo no bunpō: koten-hen* [Japanese grammar- Classical]. Tokyo: Kadokawa.
- Ono, H. (1973). *Japanese Grammar*. Tokyo: The Hokuseidō Press.
- Ono, T. & Suzuki, R. (1992). Word order variability in Japanese conversation: Motivations and grammaticization. *Text*, 12, 429-45.
- Ono, T., Thompson, S.A. & Suzuki, R. (2000). The pragmatic nature of the so-called subject marker *ga* in Japanese: evidence from conversation. *Discourse Studies*, 2, 55-84.
- Oshima, D. (2003). Out of control: A unified analysis of Japanese passive constructions. In J-B. Kim & S. Wechsler (eds.), *The Proceedings of the 9th International Conference on HPSG*, 245-65. Stanford: CSLI Publications.
- Otake, T., Hanato, G., Cutler, A. & Mehler, J. (1993). Mora or syllable? Speech segmentation in Japanese. *Journal of Memory and Language*, 32, 258-278.
- Pesetsky, D. (1987). Wh-in situ: Movement and unselective binding. In E. Reuland & A. T. Meulen (eds.), *The Representation of (in)Definiteness*, 98-129. Cambridge, Mass: MIT Press.
- Pickering, M. & Barry, G. (1991). Sentence processing without empty categories. *Language and Cognitive Processes*, 6, 229-259.
- Pinker, S. & Birdsong, D. (1979). Speakers' sensitivity to rules of frozen word order. *Journal of Verbal Learning and Verbal Behavior*, 18, 497-508.
- Prince, E. F. (1981). Toward a taxonomy of given-new information. In P. Cole (ed.), *Radical Pragmatics*, 223-56. New York: Academic Press.
- Pritchett, B. & Whitman, G. (1995). Syntactic representation and interpretive preference, In R. Mazuka & N. Nagai (eds.), *Japanese Sentence Processing*, 65-76. Hillsdale, NJ: Erlbaum.
- Radford, A. (2009). *Analyzing English sentences*. Cambridge: Cambridge University Press.
- Rambow, O. (1993). *Pragmatic aspects of scrambling and topicalization in German: A Centering Approach*. Ms, University of Pennsylvania.

- Rizzi, L. (1997). The fine structure of the left periphery. In L. Haegeman (ed.), *Elements of grammar*, 281-337. Dordrecht: Kluwer Academic Publisher.
- Rosenbach, A. (2005). Animacy versus weight as determinants of grammatical variation in English. *Language*, 81, 613-644.
- Rosenbach, A. (2008). Animacy and grammatical variation: Finding from English genitive variation. *Lingua*, 118, 151-171.
- Rösler, F., Pechmann, T., Streb, J., Röder, B. & Hennighausen, E. (1998). Parsing of sentences in a language with varying word order: Word-by-word variations of processing demands are revealed by event-related brain potentials. *Journal of Memory and Language*, 38, 150–176.
- Saeki, T. (1960). *Gendaibun-ni-okeru gojun-no keikou. Iwayuru hogo-no baai* [Tendency of word order in modern Japanese - Focusing on complements]. *Gengoseikatsu*, 111, 56-63.
- Saito, M. (1985). *Some Asymmetries in Japanese and their Theoretical Implications*. Doctoral dissertation, MIT.
- Saito, M. (1992). Long distance scrambling in Japanese. *Journal of East Asian Linguistics*, 1, 69-118.
- Saito, M. (2003). A derivational approach to the interpretation of scrambling chains. *Lingua*, 113, 481-518.
- Saito, M. (2009). Optional A-scrambling. *Japanese/Korean Linguistics*, 16, 4-63.
- Saito, M. (2012). Semantic and discourse effects of Scrambling. In B. Frellesvig, J. Kiaer & J. Wrona (eds.), *Studies in Japanese and Korean Linguistics*, 146-72. München: Lincom GmbH.
- Saito, M. & Hoji, H. (1983). Weak cross over and move α in Japanese. *Natural Language and Linguistic Theory*, 1, 245-259.
- Sakurai, Y. (2007). Centering in Japanese: How to rank forward-looking centers in a complex sentences. In N. Carter, L. H. Zabakla, A. Rimrott & D. Storoshenko (eds.), *Proceedings of the 22nd Northwest Linguistic Conference*, 243-56. Burnaby: Simon Fraser University.
- Schlesinger, I. M. (1992). The experiencer as an agent. *Journal of Memory and Language*, 31, 315-32.
- Sekerina, I. (2003). Scrambling and processing: Dependencies, complexity and constraints. In S. Karimi (ed.), *Word order and scrambling*, 301-324. Malden, MA: Blackwell Publishers.
- Seoane, E. (2009). Syntactic complexity, discourse status and animacy as determinants of grammatical variation in Modern English. *English language and linguistics*, 13, 365-384.
- Seoane, E. (2012). Givenness and word order: a study of long passives from Early Modern English to Present-Day English. In A. Meurman-Solin, M. J. López-Couso, & B. Los (eds.), *Information structure and syntactic change in the history of English*, 139-63. Oxford: Oxford University Press.

- Seraku, T. (2011). Clefts and free-relatives in Japanese. In D. Bailey & V. Teliga (eds.), *Proceedings of the 39th western conference on linguistics*, 221-39. Fresno, CA: Department of Linguistics, California State University.
- Seraku, T. (2013a). Multiple foci in Japanese clefts revisited: A semantic incrementality account. *Lingua*, 137, 145-71.
- Seraku, T. (2013b). *Clefts, relatives, and language dynamics: the case of Japanese*. Doctoral dissertation, University of Oxford.
- Seraku, T. (2015). Nihongo-no kōchibun: Monogatari danwa-kara-no shiza [Postposing in Japanese: A view from narrative discourse]. *Journal of the Society of Japanese Language and Literature, Japanology*, 70, 71-96.
- Seraku, T. & Ohtani, A. (2016). The word-order flexibility in Japanese novels: A Dynamic Syntax perspective. In T. Ogata & T. Akimoto (eds.), *Computational and cognitive approaches to narratology*, 213-44. Hershey, PA: IGI Global.
- Shibatani, M. (1985). Passive and related construction: A prototype analysis. *Language*, 61, 821-848.
- Shibatani, M. (1988). *Passive and voice*. Amsterdam: John Benjamins Publishing.
- Shibatani, M. (1990). *The languages of Japan*. Cambridge: Cambridge University Press.
- Shibatani, M. (1995). A.A. Xolodovič on Japanese passives. In D. C. Bennet, T. Bynon & G. Hewitt (eds.), *Subject, Voice and Ergativity*, 7-18. London: School of Oriental and African Studies, University of London.
- Shimojo, M. (1995). *Focus structure and morphosyntax in Japanese WA and GA, and word order flexibility*. Doctoral dissertation, State University of New York at Buffalo.
- Shimojo, M. (2005). *Argument encoding in Japanese conversation*. Hampshire and New York: Palgrave Macmillan.
- Shimojo, M. (2006). Properties of particle “omission” revisited. *Toronto Working Papers in Linguistics*, 26, 123-40.
- Siewierska, A. (1993). Syntactic weight vs. information structure and word order variation in Polish. *Journal of Linguistics*, 29, 233-265.
- Silverstein, M. (1976). Hierarchy of features and ergativity. In R. M. W. Dixon (ed.), *Grammatical categories in Australian languages*, 112-71. Canberra: Australian Institute of Aboriginal Studies.
- Simon, M. E. (1989). *An analysis of the postposing construction in Japanese*. Doctoral dissertation, University of Michigan.
- Stallings, L. M. & MacDonald, M. C. (2011). It's not just the “Heavy NP”: Relative phrase length modulates the production of heavy-NP shift. *Journal of psycholinguistic research*, 40, 177-187.

- Staub, A. (2010). Eye movements and processing difficulty in object relative clauses. *Cognition*, 116, 71-86.
- Strube, M., & Hahn, U. (1999). Functional centering: Grounding referential coherence in information structure. *Computational linguistics*, 25, 309-344.
- Suzuki, S. (1995). The functions of topic-encoding zero-marked phrases: A study of the interaction among topic-encoding expressions in Japanese. *Journal of Pragmatics*, 23, 607-26.
- Suzuki, M. (2000). *Word order variation in Japanese: characteristics of OSV word order*. Doctoral dissertation, University of British Columbia.
- Svartvik, J. (1966). *On Voice in the English Verb*. The Hague: Mouton de Gruyter.
- Takami, K. (1995). *Kinōteki kōbunron-niyoru nichieigo-hikaku* [Comparative studies of Japanese and English under functional perspective]. Tokyo: Kuroshio.
- Takami, K. (2001). *Nichi-eigo-no kinōteki kōbun bunseki* [A functional analysis of Japanese and English constructions]. Tokyo: Ōtori Shobō.
- Takami, K. (2011). *Ukemi-to shieki* [Passive and causative]. Tokyo: Kaitakusha
- Takami, K. & Kuno, S. (2006). *Nihongo kinōteki kōbun kenkyū* [Functional studies of Japanese constructions]. Tokyo: Taishūkan.
- Takano, Y. (2002). Surprising constituents. *Journal of East Asian Linguistics*, 11, 243-301.
- Tamaoka, K., Kanduboda, P. B. A., & Sakai, H. (2011). Effects of word order alternation on the sentence processing of Sinhalese written and spoken forms. *Open Journal of Modern Linguistics*, 1, 24-32.
- Tamaoka, K., Sakai, H., Kawahara, J., Miyaoka, Y., Lim, H. & Koizumi, M. (2005). Priority Information Used for the Processing of Japanese Sentences: Thematic Roles, Case Particles or Grammatical Functions? *Journal of Psycholinguistic Research*, 34, 281–332.
- Tanaka, H. (2001). Right-dislocation as scrambling. *Journal of Linguistics*, 37, 551-79.
- Tanaka, M., Branigan, H. P., McLean, J. F., & Pickering, M. J. (2011). Conceptual influences on word order and voice in sentence production: Evidence from Japanese. *Journal of Memory and Language*, 65, 318-330.
- Tanaka, Y. (2002). Toward a new taxonomy of Japanese passives. *University of Pennsylvania Working Papers in Linguistics*, 7, 109-20.
- Tateishi, K. (1994). *The syntax of 'subjects.'* Stanford: CSLI Publications & Tokyo: Kuroshio.
- Teramura, H. (1982). *Nihongo-no syntax-to imi* [Syntax and semantics of Japanese]. Tokyo: Kuroshio Shuppan.
- Thompson, S. (1987). The passive in English. In R. Channon & L. Shockey (eds.), *In honor of Ilse Lehiste*, 497-511. Dordrecht: Foris Publications.
- Thompson, S. (1990). Information flow and dative shift in English discourse. In J. A. Edmondson,

- F. Crawford, & P. Mühlhäusler (eds.), *Development and Diversity, Language Variation Across Space and Time*, 239-253. Dallas: Summer Institute of Linguistics and University of Texas at Arlington.
- Totsuka, M. (2013). On phase head in split CP hypothesis. *English Linguistics*, 30, 204-15.
- Totsuka, M. (2015). *On phasehood of functional categories in the left periphery*. Doctoral dissertation, Tohoku University.
- Trask, R. L. (1979). On the origins of ergativity. In F. Plank (ed.), *Ergativity: Towards a theory of grammatical relations*, 385-404. London: Academic Press.
- Tsujimura, N. (2013). *An introduction to Japanese linguistics*. Somerser, NJ: John Wiley & Sons.
- Tsutsui, M. (1984). Particle Ellipsis in Japanese. Doctoral dissertation, University of Illinois.
- Vallduví, E. & Engdahl, E. (1996). The linguistic realization of information packaging. *Linguistics*, 34, 459-520.
- Vasishth, S., Shaher, R. & Srinivasan, N. (2012). The role of clefting, word order and given-new ordering in sentence comprehension: Evidence from Hindi. *The Mind Research Repository*, 1, 35-56.
- Walker, M., Iida, M. & Cote, S. (1994). Japanese discourse and the process of centering. *Computational linguistics*, 20, 193-232.
- Ward, G. & Prince, E. F. (1991). On the topicalization of indefinite NPs. *Journal of Pragmatics*, 16, 167-177.
- Ward, G. & Birner, B. (2001). Discourse and information structure. In D. Schiffrin, D. Tannen, & H. Hamilton (eds.), *Handbook of Discourse Analysis*, 119-136. Oxford: Blackwell Publishers.
- Washio, R. (1993). When causatives mean passive: A cross-linguistic perspective. *Journal of East Asian Linguistics*, 2, 45-90.
- Wasow, T. (1997). Remarks on grammatical weight. *Language Variation and Change*, 9, 81-105.
- Wasow, T. (2002). *Postverbal behavior*. Stanford: CSLI Publications.
- Wasow, T. & Arnold, J. (2003). Post-verbal constituent ordering in English. In G. Rohdenburg & B. Mondorf (eds.), *Determinants of grammatical variation in English*, 119-154. Berlin: Mouton de Gruyter.
- Watanabe, A. (2002). Loss of overt wh-movement in Old Japanese. In D. W. Lightfoot (ed.), *Syntactic Effects of Morphological Change*, 179-95. Oxford: Oxford University Press
- Watanabe, Y. (1989). *The function of WA and GA in Japanese discourse*. Doctoral dissertation, University of Oregon.
- Weyerts, H., Penke, M., Münte, T. F., Heinze, H. & Clahsen, H. (2002). Word order in sentence processing: An experimental study of verb placement in German. *Journal of Psycholinguistic Research*, 31, 211-68.

- Wright, S & Givón, T. (1987). The pragmatics of indefinite reference. *Studies in Language*, 11, 1-33.
- Yamada, Y. (1908). *Nihon bunpōron* [Japanese grammar]. Tokyo: Hōzōkan.
- Yamaguchi, T. (2001). The passive construction in Japanese: A cognitive perspective. *Word*, 52, 227-56.
- Yamamoto, T. (1984). *English and Japanese passives: a functional approach*. Bachelor thesis, Kobe University.
- Yamashita, H. & Chang, F. (2001). Long-before-short preference in the production of a head-final language. *Cognition*, 81, B45–B55.
- Yamashita, H. (2002). Scrambled sentences in Japanese: Linguistic properties and motivations for production. *TEXT-THE HAGUE THEN AMSTERDAM THEN BERLIN*-, 22, 597-634.
- Yokoyama, S., Takahashi, K. & Kawashima, R. (2013). Use of semantic information to interpret thematic information for real-time sentence comprehension in an SOV language. *PloS one*, 8, e56106.
- Yokoyama, S., Takahashi, K. & Kawashima, R. (2014). Animacy or case marker Order?: Priority information for online sentence comprehension in a head-final language. *PloS one*, 8, e93109.
- Yoshida, K. (1971). *Gendaigo jodōshi-no shiteki kenkyū* [A historical study of modern auxiliary verbs]. Tokyo: Meiji-shoin.
- Yoshimoto, K. (1982). *WA to GA [WA and GA]*. *Gengo Kenkyu*, 81, 1-17.
- Zec, D. & Inkelas, S. (1990). Prosodically constrained syntax. In S. Inkelas & D. Zec (eds.), *The phonology-syntax connection*, 365-378. Chicago: CSLI Publications.