

CHAPTER 1

Introduction

1.1. Scope and data

When we observe a morphologically complex predicate, which is composed of two verbs, the following questions arise: (i) What kind of structural relations do they exhibit—coordination, subordination, or some other relation?; (ii) To what degree are the properties of the components maintained in the predicate, whether each component fully maintains a given property, loses it, or takes on a new property, and as a result of being combined together, what property is yielded? This dissertation explores these questions by examining data from Japanese.

Japanese includes a class of verbs called *hukugoo-doosi* ‘compound verbs’. They consist of two verbal elements that are morphologically bound together, as shown in (1).

- | | | | | |
|-----|----|---------------|----------------|----------------------|
| (1) | a. | nigiri-tubusu | squeeze-crush | ‘crush by squeezing’ |
| | b. | suberi-otiru | slip-fall | ‘slip off’ |
| | c. | tabe-sugiru | eat-pass | ‘overeat’ |
| | d. | nomi-tuzukeru | drink-continue | ‘continue to drink’ |
| | e. | mai-agaru | dance-rise | ‘move upward’ |

The first element (which will be represented as ‘V1’ hereafter) occurs in *renyookee*, which is translated as ‘infinitive’ in Martin (1975) and ‘adverbial’ in Shibatani (1990). *Renyookee* is a non-finite form which links a verb to another verbal or adjectival element. It consists of a root plus /i/ for a consonant-ending verb (e.g., *nom-i-* ‘drink’; *ik-i-* ‘go’)

and a root plus /Ø/ for a vowel-ending verb (e.g., *tabe-* ‘eat’; *ne-* ‘sleep’). The second element of the compound (which will be represented as ‘V2’ hereafter) occurs in a form that carries tense. For example, the V2 in *nigiri-tubus-u* ‘crush something by squeezing’, occurs in non-past form, *tubus-u*.¹

Before we proceed, there are three further points worth noting concerning Japanese compound verbs. The first point is that compound verbs are not a small fraction of Japanese verbs. Morita (1990: 262) examined the entries of one Japanese dictionary (*reekai-kokugo-ziten* 1956) and found that it contained 4,622 entries of verbs, of which almost 40% were compound verbs (1,817/4,622=39%). This percentage illustrates that compound verbs constitute an indispensable component of the Japanese lexicon. One should be cautioned that a dictionary typically does not list compound verbs when the meaning as a whole is predictable from the components. For example, a dictionary typically does not enter a compound *tabe-hazimeru* (eat-begin) ‘begin to eat’ or *hasiri-hazimeru* (run-begin) ‘begin to run’ individually but enters the information such that *-hazime* bears a given meaning when it occurs as V2 in a compound. Thus, the number of predicates that can possibly appear in the V1-V2 form is larger by far than the actual entries of compound verbs in a dictionary.

The second point is that the term ‘compound verb’ typically refers to a combination which consists of two verbs that are full-fledged verbs when each occurs as an independent verb. However, the passive morpheme *-(r)are*, which is a defective verb

¹ The non-past form refers to the root plus /u/ for the consonant-ending verb (e.g., *nom-u* ‘drink’; *ik-u* ‘go’) and the root plus /ru/ for the vowel-ending verb (e.g., *tabe-ru* ‘eat’; *ne-ru* ‘sleep’).

in the sense that it does not occur as an independent verb, can occupy the position of V2 in a compound, as can the causative morpheme *-(s)ase*, as illustrated in (2).²

- | | | | | |
|-----|----|----------------|---------------|------------------------------|
| (2) | a. | [nagur-are]-ta | beat-PASS-PST | ‘(I) was beaten.’ |
| | b. | [nagur-ase]-ta | beat-CAUS-PST | ‘(I) made (him) beat (her).’ |

Thus, strictly speaking, the sequence *verb-(r)are* and *verb-(s)ase* may be called a type of compound verb as far as the formal characteristics are concerned. In this dissertation, unless otherwise specified, the passive and causative morphemes will be treated separately from the rest of the compound verbs.

Lastly, compound verbs exhibit characteristics that can be understood as constituting one unit as *a word*, though they may be morphologically complex.

Hasegawa (1996) makes a few observations on the behavior of the compound verbs.

First, no particles (e.g., *wa* TOP, *mo* FOC) can intervene between V1 and V2 as shown in the (b) examples below.

- | | | | | |
|-----|----|--------------------|--------------------|----------------------|
| (3) | a. | nigiri-tubusu | squeeze-crush | ‘crush by squeezing’ |
| | b. | * nigiri-wa-tubusu | squeeze-TOP-crush | |
| (4) | a. | nomi-tuzukeru | drink-continue | ‘continue to drink’ |
| | b. | * nomi-mo-tuzukeru | drink-FOC-continue | |

In contrast, a predicate linked by *te* LINK can have a particle between V1 and V2 as shown in (5).

- | | | | | |
|-----|----|----------------|-----------------|--------------------------|
| (5) | a. | tabe-te-iku | eat-LINK-go | ‘I will eat before I go’ |
| | b. | tabe-te-wa-iku | eat-LINK-TOP-go | ‘I will eat before I go’ |

² The alternation between *-rare* and *-are* is due to a morphophonemic alternation: *r* appears when the immediately preceding verb stem ends in a vowel, while it is deleted when it ends in a consonant. Analogously, the alternation between *-sase* and *-ase* is due to a morphophonemic reason: *s* appears when the immediately preceding verb stem ends in a vowel, while it is deleted when it ends in a consonant.

Hasegawa (1996) claims that a predicate linked by *te* LINK enters into a syntactic juncture, and this is why a particle such as *wa* TOP can appear between the two verbs in (5b). Second, compound verbs can undergo further derivation. A suffix *kata* ‘way’ can be affixed to a simplex verb as in (6) and a compound verb as in (7), but not to a predicate linked by *-te*, as evidenced in the ungrammaticality of (8b).³

(6)	a.	tabe-ru	eat-NPST	‘eat’
	b.	tabe-kata	eat-way	‘way of eating’
(7)	a.	tabe-hazime-ru	eat-begin-NPST	‘begin to eat’
	b.	tabe-hazime-kata	eat-begin-way	‘way of starting to eat’
(8)	a.	tabe-te-simaw-u	eat-LINK-put.away-NPST	‘finish eating’
	b.	* tabe-te-simai-kata	eat-LINK-put.away-way	
		(intended) ‘way of finishing eating’		
	c.	simai-kata	put.away-way	‘way of putting away’

The point is that compound verbs exhibit morphological characteristics that are like a simplex verb but unlike a syntactic predicate, suggesting that a V-V constitutes a single unit as a word (see also Kageyama (1989), who provides more evidence to argue for the morphological wordhood of compound verbs).

1.2. Goals and limits of study

Previous research on Japanese compound verbs focuses on two main areas. One research focus is lexical semantics (Himeno 1976, 1977, 1978, 1979, 1980, 1985, 1999; Kageyama 1996, 1999; Kageyama and Yumoto 1997; Matsumoto 1998; Nagasima 1976; Tagashira 1978; Yumoto 1996). The other major research focus deals with the structure of compound verbs. Yamamoto (1983) classifies compound verbs into four types on the basis of their case-marking patterns. He also examines productivity of compound verbs

³ The examples presented in the main text are my own.

(in terms of frequency) based on textual counts. Kageyama (1989, 1993, 2001), Matsumoto (1992, 1996), and Tagashira (1978) recognize the existence of both lexical and syntactic compound verbs and examine the structural nature of the compound verbs.

This dissertation is mainly concerned with the second research focus. The goals are three-fold: (i) to offer a descriptive analysis of compound verbs, focusing on the transitivity structure of the compound verbs; (ii) to examine whether the formation of the compound verbs takes place in the lexicon or syntax, and if there are syntactic compound verbs, (iii) to examine what type of units are combined together, and what structural relations hold between the two components.

The theoretical framework we employ is Role and Reference Grammar (RRG)⁴ since RRG is equipped with a theory of juncture and nexus, which allows us to examine the structural relations among the units in a complex sentence. The theory of juncture specifies units involved in a complex sentence, termed nucleus, core and clause, whereas the theory of nexus specifies structural relations among units in a complex sentence; termed coordination, subordination and cosubordination (see Chapter 2).

This dissertation proceeds as follows: Chapter 2 introduces the framework. It also aims to develop the diagnostic tests to identify the Aktionsart classes of Japanese predicates. Chapter 3 presents a descriptive analysis of compound verbs. It considers the second question presented in the outset, focusing on the transitivity structure; namely, how the transitivity of components is maintained in the V-V construction. It also reports on a result of textual counts on productivity (i.e., how many different verbs can a certain V1 (or V2) be combined with). Chapter 4 lays out the criteria to distinguish syntactic from lexical phenomena in RRG terms. It discusses the diagnostic tests which

distinguish syntactic from lexical compounds employed in Kageyama (1993), Matsumoto (1992, 1996), and Tagashira (1978) and offers an RRG account of these diagnostic tests (e.g., passivization and causativization). We confirm that Japanese compound verbs fall into lexical and syntactic compound verbs while proposing an alternative classification for some of the compound verbs. Chapter 5 and Chapter 6 discuss the syntactic compounds, examining the juncture-nexus types as well as the logical structures of V2s. Chapter 5 deals specifically with non-phase verbs, whereas Chapter 6 discusses phase verbs. Phase verbs are verbs that make reference to a particular phase of an event (e.g., *-hazime* ‘begin’; *-tuzuke* ‘continue’), which have previously been known as ‘aspectual verbs’ (Newmeyer 1975) and ‘aspectualizers’ (Freed 1979). The non-phase verbs include *-sugi* ‘excessively’, *-nare* ‘get used to’ and *-kane* ‘serve both as (unable)’. Chapter 7 presents an analysis of lexical compound verbs, which have previously been analyzed as syntactic, namely, means-result compounds (e.g., *osi-ake* push-open ‘open it by pushing it’), *-kir* ‘cut (completely)’, and *-aw* ‘fit/match (distributively)’. Lastly, Chapter 8 examines the implications of the findings. It presents a summary of the syntactic and semantic relations of the compound verbs and claims that the morphosyntactic and semantic relations exhibited by Japanese compound verbs conform to the principle of the Interclausal Relations Hierarchy proposed in Van Valin and LaPolla (1997).

Recent development of theories of lexical conceptual structures (e.g., Jackendoff 1990) and argument structures (e.g., Grimshaw 1990) have led researchers to propose a principle which predicts the possible combination of two verbs in a lexical compound verb. For example, Kageyama (1993) proposes a principle called the *Transitivity Harmony Principle*, which constrains the combination of three types of argument

⁴ A concise summary of introduction to RRG can be found in Van Valin (2001).

structures, termed *transitive* [$x <y>$], *unergative* [$x < >$], and *unaccusative* [$<y>$] argument structures. Yumoto (1996) propose two principles, ‘obligatory sharing of subject’ and ‘inheritance of Case feature of the head’. Matsumoto (1992, 1996, 1998) offers an account on the constraints at the level of argument structure working within the framework of Lexical Functional Grammar. Examination of principles that determine the combinatory possibilities of lexical compound verbs would further provide us with insights in order to fully understand the nature of compound verbs. However, the issues on combinatory possibilities of lexical compound verbs will not be addressed here since the focus of this study is syntactic compound verbs. The argument structures will be discussed in terms of logical structures in the sense of Van Valin and LaPolla (1997).

CHAPTER 2

Framework

This chapter first introduces the framework of Role and Reference and Grammar (RRG)(Van Valin and LaPolla 1997), focusing on the layered structure of the clause and the semantic representation of the predicates. Next, this chapter develops diagnostic tests to examine the Aktionsart classes of the Japanese predicates based on Hasegawa (1996) and Toratani (1997). This task is essential because our being able to identify the Aktionsart classes will allow us to make observations on the semantic differences of Japanese compound verbs. Lastly, a few notes are made on the characteristics of Japanese verbs, which become relevant to the discussions in subsequent chapters.

2.1. The layered structure of the clause (LSC) for simple sentences

RRG posits a syntactic representation, termed Layered Structure of the Clause (LSC), which consists of the constituent projection and the operator projection.

2.1.1. The constituent projection of the LSC

The constituent projection of the LSC is the representation of the components of a sentence, showing which units form a constituent. The LSC is composed of sentence-

internal units called ‘layers’, which refer to the nucleus (NUC), core, and clause. Figure 2.1 schematizes the relation of the layers for sentence (1).

(1) *Chris read a book in the library.*

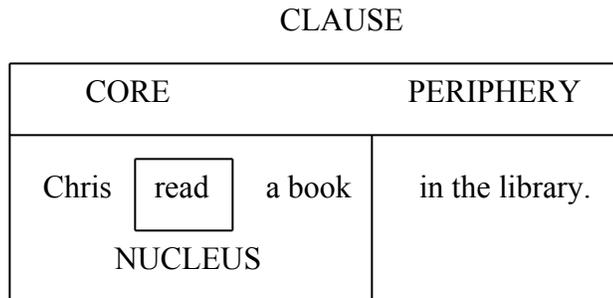


Figure 2.1: Components of the LSC

As it can be seen in Figure 2.1, the innermost layer of the clause is the **nucleus**. It houses the predicating element such as the verb *read* in (1). The next layer is the core. It houses the nucleus as well as the core arguments, which are the arguments of the predicate. In (1), the core contains the nucleus that houses the predicate *read* and the two core arguments *Chris* and *a book*. There are two types of core arguments, direct and oblique. The **direct core arguments** refer to the ‘subject’ and the unmarked theme arguments of a ditransitive construction such as *money* in the sentence *John gave money to Mary*, whereas the **oblique core arguments** are the adpositionally marked recipient arguments such as *Mary* within the same sentence. Lastly, the outermost layer of the LSC is the clause. The **clause** houses the core and periphery. The **periphery** (or **adjunct**) is an optionally required element by the predicate. Typically, peripheries are temporal or locative adverbial phrases such as *in the library* in (1).

These components of the LSC are represented in the constituent projection of the LSC, shown in Figure 2.2.

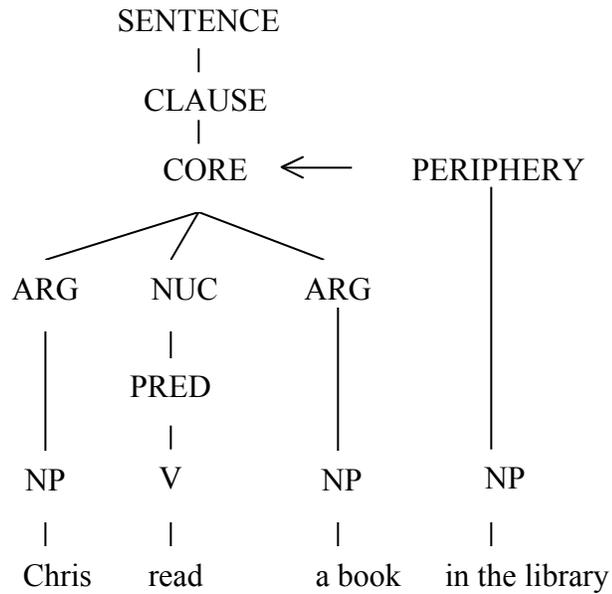


Figure 2.2: Constituent projection of the LSC

2.1.2. The operator projection of the LSC

The operator projection is a representation in which grammatical elements called operators have scope over the layers of the clause. Thus far, eight kinds of operators have been recognized, namely, (a) tense, (b) aspect, (c) negation, (d) modality, (e) status, (f) illocutionary force, (g) directionals, and (i) evidentials. Each operator operates over a particular layer of the clause, as indicated by the arrows in Figure 2.3.

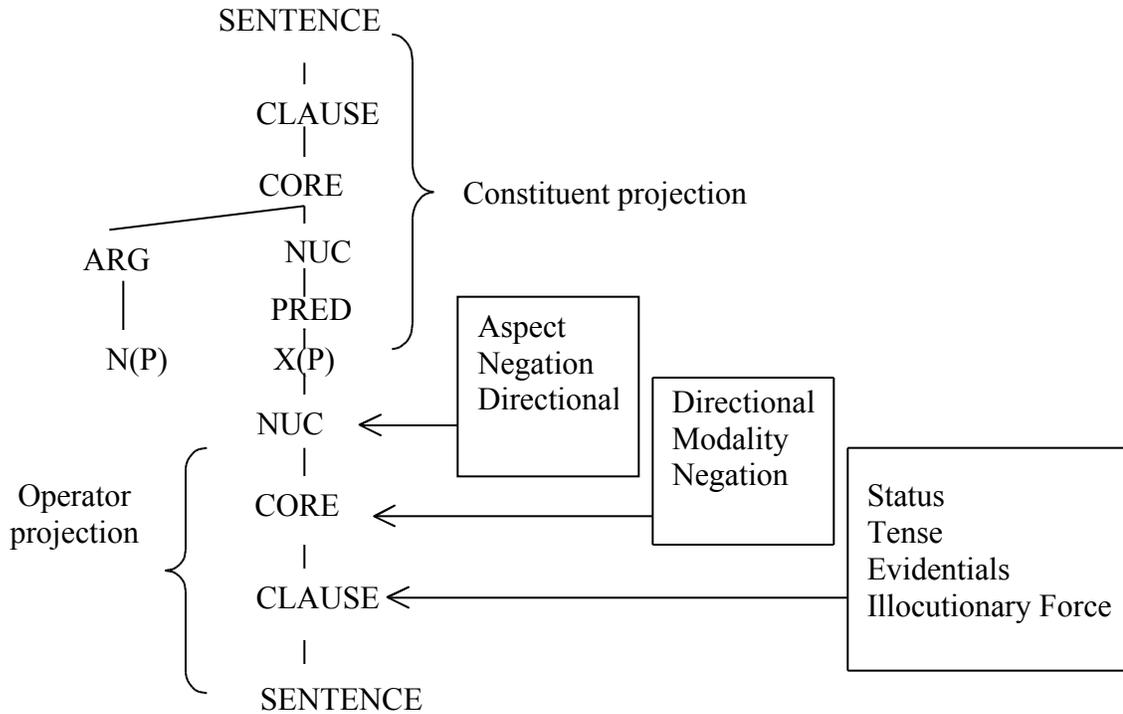


Figure 2.3. Operator projection in LSC

2.2. Operators

2.2.1. Nuclear operators

The operators that have scope over the nucleus are aspect, negation and directionals. The term ‘aspect’ has been defined in various ways. For example, Comrie (1976: 3) stated that aspect refers to “different ways of viewing the internal temporal constituency of a situation.” For Chung and Timberlake (1985: 213), “[a]spect characterizes the relationship of a predicate to the time interval over which it occurs.” **Aspectual operators** refer to the morphemes that express ‘aspect’ in a narrow sense. First, ‘aspect’ here excludes the aspect at the lexical level (Aktionsart) but refers to ‘aspect’ at the propositional level in the sense of Chung and Timberlake (1985). Second,

aspectual operators exclude morphemes that indicate a particular phase of an event such as the inceptive phase, the mid-point phase, the end phase of an event—in English they are expressed by verbs such as *begin*, *start*, *continue*, *finish*, and *complete* (cf. Freed 1979; Newmeyer 1975). We will call these morphemes **phase verbs** (cf. Coseriu 1976). The difference between the aspectual operators and the phase verbs is made clearer with Smith's (1997: 61) characterization of 'viewpoint', which is described as follows:

Aspectual viewpoints function like the lens of a camera, making objects visible to the receiver. Situations are the objects on which viewpoint lenses are trained. And just as the camera lens is necessary to make the object available for a picture, so view-points are necessary to make visible the situation talked about in a sentence.

Aspectual operators code information indicating that the situation is viewed from a perspective of a temporal reference point, whereas the phase verb is independent of the viewpoint. In essence, aspectual operators refer to the notions of perfective vs. imperfective and progressive vs. non-progressive, while the phase verbs refer to an internal phase of an event.

Negation takes in (part of) the proposition in its scope and changes the truth value of the proposition to the contrary. It can operate over distinct layers. An example of negation that operates over the nucleus is the prefix *un-* in English *unhappy*.

Directionals refer to the elements that express direction of the action. In English, *up* in *look up at the sky*, indicates the direction of the visual focus. Directionals at the nuclear level indicate the direction of the action itself and are independent of the motion of the referent of the core argument.

2.2.2. Core operators

The operators that have scope over core are directionals, negation and modality. The **directionals** at the core-level refer to the direction of motion, which depends on the motion of the referent of the core argument, in contrast to the directional operator at the nuclear level. The **negation** at the core level negates part of the semantic content of the core. In a sentence such as *He didn't buy a pen, he bought a pencil*, only the object of the purchase is negated. The core-level negation is often referred to as 'internal negation' or 'narrow scope negation'. **Modality** at the core-level refers to the deontic modality, which expresses notions such as strong obligation (e.g., *must*), ability (e.g., *be able to*), permission (e.g., *may*), and weak obligation (e.g., *ought to*). A sentence with *be able to* (e.g., *John is able to pass the exam*) can be paraphrased into a sentence with *have the ability to* (e.g., *John has the ability to pass the exam*). A sentence with *must* (e.g., *Chris must support Mary*) can be paraphrased into a sentence with *be obliged to* (e.g., *Chris is obliged to support Mary*).

2.2.3. Clausal operators

The clausal operators are status, tense, evidentials and illocutionary force. **Status** refers to epistemic modality -- realis vs. irrealis -- and to external negation. Epistemic modality expresses notions of necessity and possibility. English sometimes employs identical morphemes to express the deontic modality and the epistemic modality (e.g., *must, can*). The epistemic use of *must* refers to *necessity* and the sentence *Chris must support Mary* can be paraphrased as *It is necessary for Chris to support Mary* (cf. *must* here is distinct from its deontic use as in *Chris is obliged to support Mary*). The epistemic use of *can* refers to possibility, and the sentence *John can pass the exam* can be

paraphrased as *It is possible for John to pass the exam* (cf. *can* here is distinct from its deontic use *John has the ability to pass the exam*). The second kind of operators that express status are those that express **realis** and **irrealis**. They indicate whether the situation is real or hypothetical. In the sentence *I could have gone but I didn't go*, the first clause expresses the hypothetical situation in contrast to the second clause, which expresses the situation that took place in reality. The third kind of operator is **external negation** (or 'clausal negation'; 'wide scope negation'), which refers to the negation that operates over the entire proposition. To obtain the meaning of the external negation, a sentence can be paraphrased with *It is not the case that ...* as *He didn't buy a pen* can be paraphrased into *It is not the case that he bought a pen*.

Another kind of clausal operator is **tense**. Tense expresses the temporal relation between the reference time and the time at which an event occurs. The reference time often corresponds to the utterance time. In the sentence *Mary danced*, the speaker expresses that the event of Mary's dancing took place at some time before the utterance time, while in *Mary will dance*, the speaker indicates the event will take place sometime after the utterance time. The other kind of clausal operator is **evidentials**. Evidentials indicate the basis for the source of the speaker's utterance, whether the utterance is based on what he witnessed, heard, inferred, speculated or the like. Japanese has several markers to express evidentiality. Example (2) shows two examples.

- (2) a. Taroo ga ki o kit-ta-soo-da
 Taro NOM tree ACC cut-PST-EVID-COP
 'According to a source, Taro cut the tree.'

- b. Taroo ga ki o kit-ta-mitai-da
 Taro NOM tree ACC cut-PST-EVID-COP
 ‘It seems that Taro cut the tree.’

In (2a), *soo* expresses that the information is obtained based on what the speaker heard (or it is possible that he read it somewhere), whereas in (2b), *mitai* expresses that the speaker did not actually witness the scene but the speaker made a judgment based on a strong piece of evidence that it took place; perhaps he heard the sound of the tree being cut, or he saw immediately before and after *Taro*’s cutting action but not the actual cutting scene.

The last kind of clausal operator is **illocutionary force**. Illocutionary force (IF) refers to the categories of declarative, interrogative, imperative, and optative. In the sentence *Mary jumped*, the tense on the verb indicates that the IF is declarative. In *Did Mary jump?*, the tensed-element initial to the core *did* indicates that the IF is interrogative. In *Jump!*, the tenseless form of the verb indicates that the IF is imperative. In *May you succeed!*, the auxiliary *may* initial to the core indicates that the IF is optative.

Thus, operators are grammatical elements that operate over a distinct layer of the clause within the sentence. They play an important role in identifying the juncture-nexus type of complex sentences, which we will turn to next.

2.3. The layered structure of the clause in complex sentences

Theories differ as to the treatment of (i) what units are involved in complex sentences and (ii) what relation holds among those units. RRG postulates that the units involved in complex sentences are the layered structure of the clause (i.e., nucleus, core and clause) and that the relations of these units are coordination, subordination, and

cosubordination. They are referred to as **levels of juncture** and **nexus relations** respectively. Example (3) gives a schematic representation of each level of juncture.

- (3) a. Nuclear juncture: [CORE ... [NUC PRED] ... + ... [NUC PRED] ...]
 b. Core juncture: [CLAUSE ... [CORE ...] ... + ... [CORE ...] ...]
 c. Clausal juncture: [SENTENCE ... [CLAUSE ...] ... + ... [CLAUSE ...] ...]

Example (3a) shows that a nuclear juncture consists of multiple nuclei, making up a single core. Example (3b) shows that a core juncture consists of multiple cores, forming a single clause. Example (3c) shows that a clausal juncture consists of multiple clauses, making up a single sentence.

The dependent relation among nexus is presented in Figure 2.4.

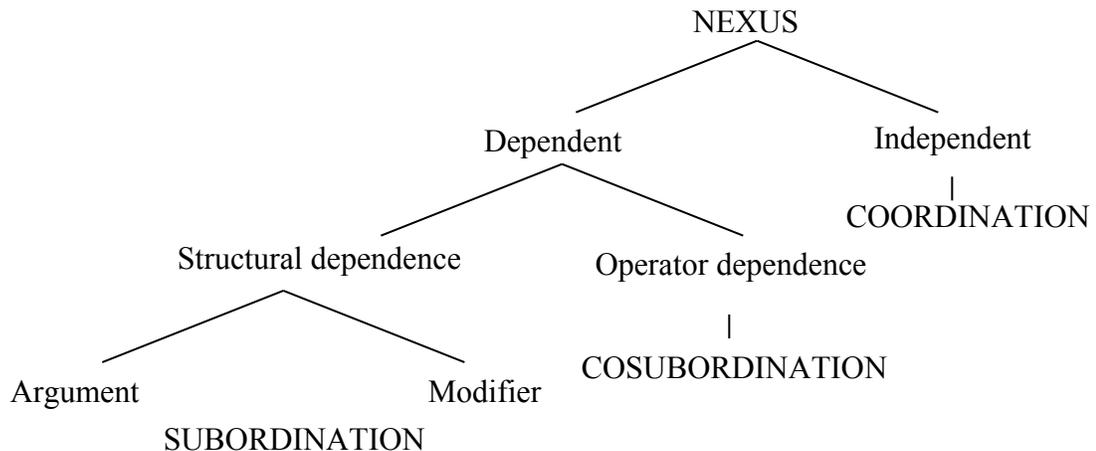


Figure 2.4: Nexus relations

The nexus relations are distinguished on the basis of the structural dependency and operator dependency. They can first be divided into the categories of independent and dependent. The independent nexus relation is exhibited in coordination, in which the two

units are conjoined in an equal-status relation, independent of each other. The dependent relations are further divided into structural-dependent and operator-dependent relations. The former is manifested in subordination, and the latter, in cosubordination. In subordination, one unit functions either as a modifier to the other or as an argument of the other. In cosubordination, the co-existing elements obligatorily share an operator at the relevant level of juncture but are structurally independent of each other in the sense that the presence of one element does not entail the presence of the other unlike in a modificational relation. This character of operator-dependency is distinct from that of coordination, in which each unit can have its own operator.

These nexus relations can hold at each level of juncture thereby yielding nine possible juncture-nexus types, shown in (4).

- | | | |
|-----|--|--|
| (4) | <ul style="list-style-type: none"> a. Nuclear cosubordination b. Nuclear subordination c. Nuclear coordination d. Core cosubordination e. Core subordination f. Core coordination g. Clausal cosubordination h. Clausal subordination i. Clausal coordination | <p>Tightest linkage</p>  <p>Loosest linkage</p> |
|-----|--|--|

Van Valin and LaPolla (1997) propose that these nine juncture-nexus types can be organized into a hierarchy on the basis of the structural closeness between the units (see Chapter 8). Namely, of the nexus relations, cosubordination exhibits the tightest relation, subordination exhibits the second tightest relation and coordination exhibits the loosest relation. As for the juncture levels, nuclear juncture holds the tightest relation, core juncture comes second, and clausal juncture takes the loosest linkage. Accordingly, the nine juncture-nexus types can be arranged as in (4) from the tightest to the loosest. When

we cannot (or need not to) specify the juncture-nexus types, the structural relations may be characterized in terms of tightness or looseness of the linkage. For example, a nuclear coordination may be characterized as taking a looser linkage than nuclear cosubordination but a tighter linkage than core cosubordination.

The examples of nuclear juncture are shown in (5) from Barai (Olson 1981), cited in Van Valin and LaPolla (1997: 457-8).

- (5) a. Fu kai fu-one kume-fie va.
 3sg friend 3sg-GEN call-listen continue
 ‘He continued calling and listening for his friend.’
- b. Fu vazai ufu furi numu akoe
 3sg grass cut finish pile throw.away
 ‘He finished cutting, piled, and threw away the grass.’

In (5a), the two nuclei *kume-fie* ‘call-listen’ form a complex unit, over which the aspect marker *va* ‘continue’ has scope. The distinguishing feature of cosubordination is operator-sharing. Since aspectual operators like *va* are nuclear operators, (5a) shows an example of nuclear cosubordination. Note that *furi* ‘finish’ in (5b) example is also an aspectual operator, which is a perfective marker. Unlike (5a), it has scope over a single nucleus *ufu* ‘cut’ while the other nucleus *numu* ‘pile’ or *akoe* ‘throw away’ remains outside of its scope. Since the latter two nuclei are structurally independent of each other, and moreover, since they are operator independent, they show the relation of nuclear coordination. The aspectual operator *va* with the complex nucleus in (5a), or *furi* with the nucleus with *ufu* in (5b) exhibits a juncture-nexus type of nuclear subordination.

Examples of core juncture can be taken from English. Consider (6).

- (6) a. John must try to wash the car. (Core cosubordination)
 b. David regretted Amy’s losing the race. (Core subordination)

- c. John must tell Bill to wash the car. (Core coordination)

The example of (6b) differs from (6a) and (6c) in that one of the cores (i.e., *Amy's losing the race*) appears as a core argument of the other predicate, *regret*. Since it is structurally dependent on the other core, (6b) is an example of core subordination. In (6a), *must* is a deontic modal (a core operator), which expresses ‘obligation’. Since the modal has scope over both cores (i.e., what *John* must do is not only *trying* but also *washing*, and it cannot be only one of them), this sentence is an example of core cosubordination. On the other hand, in (6c), the modal has scope over the core for the predicate *tell*, but not the one for *wash*; in other words, *John* is obliged to ‘tell’ but not ‘wash’. Since the core housing *tell* has its own operator, the two cores are operator independent. Since neither one is in a subordinate relation, (6c) is an example of core coordination.

Lastly, an example of clausal cosubordination is shown in (7a) from Amele (Roberts 1988), cited in Van Valin and LaPolla (1997: 451). Examples for clausal subordination and clausal coordination are shown in (7b) and (7c) from English.

- (7) a. Ho busale-ce-b dana age qo-ig-a fo?
 pig run.out-DfP-3sg man 3pl kill-3pl-TPAST Q
 ‘Did the pig run out and did the men kill it?’ (Clausal cosubordination)
 *‘The pig ran out and did the men kill it?’
- b. John saw Max after he went to the party. (Clausal subordination)
- c. Anna read for a few minutes, and then she went out.
 (Clausal coordination).

In (7a), *a* is a past tense marker, and *fo*, an illocutionary force (IF) marker. They are both operators at the clause level and are obligatorily shared across the two clauses; therefore (7a) shows an instance of a clausal cosubordination. In (7b), the clause *he went to the party* occurs as the argument of the preposition *after*, and the entire prepositional phrase appears as periphery to the matrix core *John saw Max*. This is therefore an example of

clausal subordination with an adverbial clause. In (7c), the two clauses are simply conjoined by ‘and’ (i.e., they are structurally independent), and each clause has its own TNS and IF. Therefore, this is an instance of clausal coordination.

Not all languages exhibit all nine juncture-nexus types. As for Japanese, previous literature has not recognized the presence of nuclear cosubordination. In Chapter 6, however, we will argue that Japanese exhibits an instance of nuclear cosubordination.

2.4. Lexical representations

In RRG, the semantic analysis of predicates is grounded in the Aktionsart (‘form of action’ in German) classification, originally proposed in Vendler (1957[1967]).

Adapting Vendler’s classification, Van Valin and LaPolla (1997) divide verbal aspect into ten classes as summarized in table 2.1.

Table 2.1: Aktionsart classes

Aktionsart classes	Examples	Features of the non-caused components
a. State	The boy is afraid.	[+static] [-telic]
b. Causative State	The dog frightens the boy.	[-punctual]
c. Achievement	The balloon popped.	[-static]([[-dynamic])] [+telic]
d. Causative Achievement	The cat popped the balloon.	[+punctual]
e. Accomplishment	The snow melted.	[-static]([[-dynamic])] [+telic]
f. Causative Accomplishment	The hot water melted the ice.	[-punctual]
g. Activity	The ball bounced around the room.	[-static]([+dynamic]) [-telic]
h. Causative Activity	The girl bounced the ball around the room.	[-punctual]
i. Active Accomplishment	The soldiers marched to the barracks.	[-static]([+dynamic]) [+telic]

j. Causative Active Accomplishment	The sergeant marched the soldiers to the barracks.	[-punctual]
------------------------------------	--	-------------

This table shows that there are five non-causative Aktionsart classes, each with a causative counterpart. The non-causative classes are distinguished by three kinds of inherent properties, namely, telicity, punctuality, and staticness, which are represented by the binary features [\pm telic], [\pm punctual], and [\pm static] respectively. Telicity distinguishes an event that brings about a change of state (i.e., [+telic]) from one that does not (i.e., [-telic]). Punctuality distinguishes an event that takes place instantaneously (i.e., [+punctual]) from an even that allows temporal duration or a state that holds for a span of time (i.e., [-punctual]). Staticness distinguishes a state, which consists of internally uninterrupted and inseparable phases (i.e., [+static]) of an event, which consists of internally complex stages (i.e., [-static]).

Some of the terminology employed in this classification is used in different senses in other work (cf. Dowty 1979, Foley and Van Valin 1984, Smith 1997). First, [\pm dynamic] is a sub-property of [-static] and therefore, [+dynamic] does not necessarily entail [-static], or vice versa, and [\pm dynamic] is employed to distinguish activity from non-activity verbs among [-static] verbs. In other words, activity and active accomplishment are [+dynamic], while achievement and accomplishment are [-dynamic]. Second, the class often referred to as ‘accomplishment’ in the literature that includes activity verbs accompanied by goals or specific objects is classified here as active accomplishments. Dowty (1979) among others notes that activities can alternate with accomplishments when the verb appears with a phrase that serves to provide an end point of the action such as *to the park* in (8).

- (8) a. John walked in the park for/*in ten minutes.
b. John walked to the park in/*for ten minutes.

Walk in (8a) is atelic, while *walk to the park* in (8b) is telic. Van Valin and LaPolla (1997) propose to term this telic class **active accomplishment**. Third, accomplishments in the sense of Van Valin and LaPolla (1997) are the durative counterparts of the achievements. Fourth, accomplishments do not entail a causative situation. Causative counterparts exist independently for each class of state, achievement, accomplishment, activity and active accomplishment as illustrated in Table 2.1.

In order to distinguish the Aktionsart classes, RRG makes use of some of the diagnostic tests developed in Dowty (1979). The tests are intended for cross-linguistic use, though modifications may be needed to accommodate language-specific characteristics. We present the diagnostic tests for Japanese predicate classes in the next section. Below are six diagnostic tests for English.

_Test 1: Can the verb occur with the progressive form *-ing*?

Being able to occur with the progressive form *-ing* indicates that the process expressed by the verb allows temporal duration, and the form is compatible with the [-punctual, -static] property. The classes which have these properties are activity, accomplishment and active accomplishment, as we can say *I am walking* (activity), *The snow is melting* (accomplishment), and *He is walking to the station* (active accomplishment).

_Test 2: Can the verb occur with adverbs *vigorously* or *actively*?

This test identifies the dynamicity of the verb, and these adverbs are compatible with [+dynamic] verbs. The verbs that are [+dynamic] are activity, active accomplishment and their causative counterparts; for example, we can say *John is eating*

vigorously/actively (activity) or *He is walking to the station vigorously/actively* (active accomplishment).

_Test 3: Can the verb occur with the adverbs *quickly* or *slowly*?

This test also identifies whether the event allows temporal duration in its process. These adverbs are compatible with [-static, -punctual] verbs. The examples of such classes are activity, accomplishment, and active accomplishments, as we can say *The shirt is drying slowly* (accomplishment) and *John is walking slowly* (activity).

_Test 4: Can the verb occur with a prepositional phrase with *for*?

A prepositional phrase such as *for one hour* or *for ten minutes* is compatible with an event that does not bring about a change of state. The phrase, therefore, is compatible with [-telic, -static] verbs. The class which can occur with *for* phrase is activity, as we can say *John ran for an hour* (activity), while the phrase is incompatible with [+telic] verbs such as achievements, as can be seen in the unacceptability of the sentence, **The balloon popped for an hour*.

_Test 5: Can the verb occur with a prepositional phrase with *in*?

In contrast to test 4, this test identifies whether the event brings about a change of state. The *in* phrase is compatible with [+telic] verbs. The classes which can occur with this phrase are achievement, accomplishment, and active accomplishment; for example, we can say, *The snow melted in an hour* (accomplishment), but the phrase cannot occur with [-telic] verbs, as indicated by the unacceptability of **John ran in an hour* (activity).

_Test 6: Can the sentence be paraphrased with 'cause'?

When the verb takes two semantic arguments, one of them can be the 'causer' of the event. If the argument is the 'causer', the sentence allows a causative paraphrase

retaining the same number of arguments. For example, a sentence with a causative state such as *The dog scares the boy* can be paraphrased into *The dog caused the boy to be afraid*, or a sentence with a causative accomplishment verb such as *The hot water melted the ice* can be paraphrased into *The hot water caused the ice to melt*. In the case of a non-causative, a sentence with two arguments such as *Mary ate the apple* (active accomplishment) can hypothetically be described as *Mary caused herself to eat the apple*. However, there are two problems with this potential paraphrase: (i) its meaning is different from that of the original, and (ii) it introduces an additional argument which is not present in the original sentence. Accordingly, it does not qualify as a valid causative paraphrase.

When the Aktionsart class is determined by the diagnostic tests, verbs and their arguments are represented by the **logical structures** (LS), exhibited in (9).

(9) <u>Aktionsart Class</u>	<u>Logical Structure</u>
State:	predicate _ (x) or (x, y)
Activity:	do _ (x, [predicate _ (x) or (x, y)])
Achievement:	INGR predicate _ (x) or (x, y)
Accomplishment:	BECOME predicate _ (x) or (x, y)
Active Accomplishment:	do _ (x, [predicate ₁ _ (x, (y))]) & BECOME predicate ₂ _ (z, x) or (y)
Causative:	_ CAUSE _, where _, _ are LSs of any type

While the LS of a predicate constitutes the fundamental part of the lexical entry, an additional piece of information on ‘macrorole-transitivity’ may be needed for marked instances (see 2.5.2. below).

2.5. Macroroles and semantic transitivity

2.5.1. Macroroles

For the purposes of linking syntax and semantics, the arguments in the LS such as the x argument are assigned a macrorole status, termed **actor** and **undergoer**.

Macroroles may be taken as generalized arguments which are neutralized for various thematic relations. Prototypically, AGENT is actor and PATIENT is undergoer.

However, the macrorole status is determined irrespective of the thematic roles or relations. Rather, it is determined by interpreting the position of an argument on the Actor-Undergoer Hierarchy, illustrated in Figure 2.5.

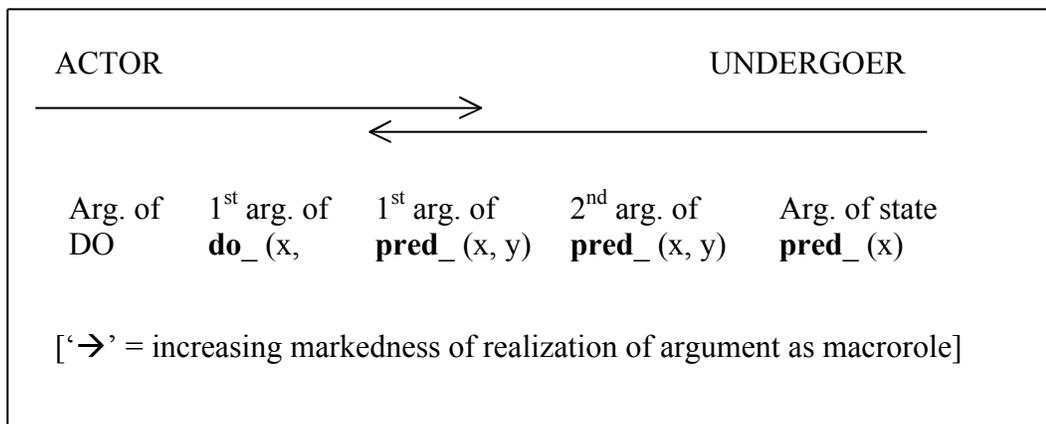


Figure 2.5: The Actor-Undergoer Hierarchy

Following the hierarchy, the macrorole status of an argument can be determined based on the type of predicate (activity or state) it is an argument of and the position of the argument (i.e., first or second) in the LS. Let us take *sing* (**do_** (x, [**sing_** (x)])) as an example. Since it is an intransitive verb, the verb takes a single argument x .

Furthermore, because the x argument is the first argument of **do_** (x, ...), it is assigned an

actor status according to the Actor-Undergoer hierarchy. In the case of the state verb *exist* **exist**_ (x), its argument is assigned an undergoer status because x is the sole argument of the state predicate in the LS. In *Chris melted the chocolate* ([**do**_ (Chris, Ø)] CAUSE [BECOME **melted**_ (chocolate)]) where the verb is transitive, the first argument of **do**_ (i.e., *Chris*) is an actor, whereas the argument of the state verb (i.e., *chocolate*) is an undergoer.

In brief, once the Aktionsart class of the verb is determined by the diagnostic tests, the LS of the verb is obtained, and the macrorole status of its arguments can be determined according to the Actor-Undergoer hierarchy.

2.5.2. Macrorole-transitivity

As briefly mentioned earlier, the core component of the lexical entry of the verb is the Logical Structure (LS) of the verb. However, the LS can be followed by information on the number of macroroles, termed Macrorole-transitivity (M-transitivity). M-transitivity refers to the number of macroroles the verb takes and is represented as [MR_]. For example, in *Mary danced* (**do**_ (Mary, [**dance**_ (Mary)])), the verb takes one macrorole, an actor. In this case, it is said that *dance* is M-intransitive ([MR1]). M-transitivity is distinct from Syntactic-transitivity (S-transitivity). Syntactic-transitivity refers to the number of the syntactic arguments of the verb, which may or may not coincide with the number of the macrorole arguments, depending on the verb. For example, in *Mary danced*, *Mary* is not only the syntactic argument but also the actor (macrorole) of the verb. Therefore, S-intransitivity coincides with M-intransitivity. In contrast, in the case of *It rained*, there is one syntactic argument, *It*; therefore, we say that

the verb is S-intransitive. In this case, however, *It* is a dummy subject and does not correspond to a semantic argument of the verb. Accordingly, it does not qualify as a macrorole, and the verb is M-atransitive ([MR0]). Thus, in the case of *rain*, S-transitivity does not coincide with M-transitivity. In another example, *John gave the book to Mary*, the verb *give* takes three syntactic arguments; *John*, *Mary* and *the book*; therefore, the verb is S-ditransitive. These arguments are also the semantic arguments of the verb. However, since the number of the macroroles can be maximally two (there are just an actor and an undergoer) and the third argument appears as a core argument, which is neither an actor or undergoer, the verb *give* is said to be M-transitive ([MR2]).

The assignment of macroroles generally follows the principles stated in (10) (Van Valin and LaPolla 1997: 152-153).

(10) *Default macrorole assignment principles*

- a. Number: the number of macroroles a verb takes is less than or equal to the number of arguments in its logical structure,
 - 1. If a verb has two or more arguments in its LS, it will take two macroroles.
 - 2. If a verb has one argument in its LS, it will take one macrorole.
- b. Nature: for verbs which take one macrorole,
 - 1. If the verb has an activity predicate in its LS, the macrorole is actor.
 - 2. If the verb has no activity predicate in its LS, the macrorole is undergoer.

Examples of the lexical entries for English verbs are shown in (11). If a verb does not have the predicted M-transitivity by the principles in (10), the [MR_] feature specification must be entered into the lexical entry (e.g., (11a)).

- (11) a. seem: **seem_** (x, y) [MR0]
 b. own: **have_** (x, y)
 c. belong to: **have_** (x, y) [MR1]
 d. melt: BECOME **melted_** (x)
 e. watch: **do_** (x, [**see_** (x, y)])
 f. show: [**do_** (w, Ø)] CAUSE [BECOME **see_** (x, y)]

To attain a semantic representation for a sentence, the LS of the verb such as (11) is first selected from the lexicon. Then, the variable positions are filled by the referring expressions. If the sentence contains adjunct predicative prepositions such as *after*, they are to be added to the representation (e.g., **after_** (...)). Subsequently, the semantic representation and the syntactic representation are mapped onto each other, following the linking procedures presented in Van Valin and LaPolla (1997: 324-352).

2.6. Diagnostic tests for determining the predicate classes in Japanese

Working within the framework of RRG, Hasegawa (1996) devises diagnostic tests to classify Japanese verbs. The tests are designed to identify four groups (i.e., state, achievement, activity and accomplishment) in the sense of Dowty (1979). Hasegawa's tests are adapted in Toratani (1997) to classify non-causative verbs into the Aktionsart classes of Van Valin and LaPolla (1997). Based on these diagnostic tests, we develop eight diagnostic tests below, which allow us to determine the Aktionsart classes in Japanese, including causative classes.

2.6.1. Test 1: *-te-i-ru* test

The first test is *-te-i-ru* test (LINK-exist-NPST). Kindaichi (1950[1976]) presents a four-way classification of Japanese verbs based on the inherent aspect of verb. He classifies verbs on the basis of the interpretation and the grammaticality of the sentence

when the verb occurs with *-te-i*. The four classes are: (a) *jootai doosi* ‘stative verbs’; (b) *keezoku doosi* ‘continuation verbs’; (c) *syunkan doosi* ‘instantaneous verbs’; and (d) *dai-yon-syu no doosi* ‘verbs in the fourth class’. Example (12) shows the examples of each class.

(12)	(a) ‘stative’	<i>ar-</i> ‘exist’	<i>tigaw-</i> ‘wrong’
		<i>wakar-</i> ‘understand’	<i>mie-</i> ‘be visible’
		<i>ir-</i> ‘need’	<i>ooki-sugi-</i> ‘be too big’
	(b) ‘continuation’	<i>yom-</i> ‘read’	<i>waraw-</i> ‘laugh’
		<i>nak-</i> ‘cry’	<i>utaw-</i> ‘sing’
		<i>name-</i> ‘lick’	<i>os-</i> ‘push’
	(c) ‘instantaneous’	<i>sin-</i> ‘die’	<i>kie-</i> ‘go off’
		<i>owar-</i> ‘finish’	<i>sawar-</i> ‘touch’
		<i>yame-</i> ‘stop’	<i>sir-</i> ‘come to know’
	(d) ‘fourth class’	<i>sobie-</i> ‘tower’	<i>sugure-</i> ‘exceed’
		<i>tom-</i> ‘get rich’	<i>arihure-</i> ‘be common’
		<i>ni-</i> ‘resemble’	<i>marugao o su-</i> ‘be round-faced’

The stative verbs are distinguished from the other three classes by their inability to occur with *-te-i* (LINK-exist), as indicated by the unacceptability of (13).

- (13) * *tukue ga at-te-i-ru*
 desk NOM exist-LINK-exist-NPST
 ‘The desk is existing.’

When the verbs in the ‘continuation’ class occurs with *-te-i* (LINK-exist), it yields the interpretation of the English equivalent of progressive *-ing*, as in *yon-de-i-ru* (read-LINK-exist-NPST) ‘reading’, and *warat-te-i-ru* (laugh-LINK-exist-NPST) ‘laughing’. The verbs in the ‘instantaneous’ class yield the interpretation of the ‘resultative state’, which refers to the obtained state after a change of state, as shown in (14).

- (14) *denki ga tui-te-i-ru*
 light NOM turn.on-LINK-exist-NPST
 ‘The light is on.’

This sentence depicts the state in which the light is on. This state is obtained immediately after someone turns on the light, which corresponds to the time when a change of state takes place. Lastly, the verbs in ‘the fourth class’ express a static state with *-te-i-ru*. The entire sequence with *-te-i-ru* denotes the inherent or permanent properties that hold of animates and artifacts. Predicates such as *arihure-te-i-ru* ‘be common’ or *tongat-te-i-ru* ‘be acute-angled’ are of this kind. The peculiarity of the verbs of this class is that they necessarily appear with *-te-i-ru* to refer to such a state and cannot be used in simple past, as indicated by the unacceptability of (15b).

- (15) a. Tokyo no nisi ni Huzi-san ga sobie-te-i-ru
Tokyo of west to Mt. Fuji NOMtower-LINK-exist-NPST
‘To the west of Tokyo rises Mt. Fuji.’
- b. * Tokyo no nisi ni Huzi-san ga sobie-ta
Tokyo of west to Mt. Fuji NOMtower-PST
‘To the west of Tokyo rose Mt. Fuji.’

Example (15a) is acceptable, depicting the current state of the mountain rising, whereas (15b) is unacceptable when the verb is in simple past form. While the verbs in the fourth class resemble those in the stative class in the sense that they both express some kind of state, the former is distinct from the latter in that the latter requires *-te-i-ru*, while the former cannot occur with it.

The semantics of *-te-i* is complex and has been studied extensively (Cseresnyési 1996; Jacobsen 1982; Kiryu 1999; Kudo 1995; McClure 1993; Soga 1983; Shirai 1998, 2000; Teramura 1984 among others). One point that seems to be agreed upon is that the meaning of *-te-i-ru* is not automatically determined by the lexical aspect of the verb with which it co-occurs. Teramura (1984), for example, points out that *-te-i-ru* does not necessarily give rise to the reading of ‘progressive’, ‘resultative’, or ‘stative’ and that

contextual factors can override the default reading. Consider (16) from Teramura (1984: 131).

- (16) yahari tisiryoo suresure o non-de-i-masu
 perhaps lethal dose barely ACC drink-TE-exist-POLITE
 ‘As suspected, he has taken almost a lethal dose.’

Since *nom-* ‘drink’ is a ‘continuation’ verb, the unmarked reading of *non-de-i-ru* (drink-TE-exist) should be a ‘progressive’ one. Instead, (16) refers to the perfective aspect of the medicine having been taken by the suicide attempter, and the sentence depicts a scene in which the speaker is explaining the completed event or is describing it in recollection. Teramura calls this interpretation ‘events of the past that are significant to the current state.’ Though the semantics of *-te-i-ru* is an important topic of investigation for understanding the aspectual system of Japanese, for my current purposes, I focus on the unmarked interpretations of *-te-i-ru* (i.e., the interpretation triggered by the inherent aspect of the verb) and employ it as a diagnostic test to distinguish the Aktionsart classes.

In Kindaichi’s classification, a verb’s inability to occur with *-te-i-ru* is the hallmark of stative verbs (e.g., *ar-* ‘exist’ cannot form **at-te-i-ru* and *ir-* ‘need’ cannot form **it-te-i-ru*). However, there are some state verbs (e.g., (17)) that may occur with it.

- (17) a. Taroo wa hontoo wa mimi ga kikoeru
 Taro TOP in.reality P ear NOM be.audible
 ‘Taro can actually hear.’
- b. Taroo wa hontoo wa mimi ga kikoe-te-i-ru
 Taro TOP in.reality P ear NOM be.audible-TE-exist-NPST
 ‘Taro can actually hear.’(The utterance made in recollection)

Example (17a) shows that *kikoe-* ‘be audible’ can refer to the current state of being audible. Example (17b) shows that it can occur with *-te-i-ru*. The former sentence literally describes the state of auditory capability, while the latter sentence evokes the

strong sense of what Teramura describes as ‘events of the past that are significant to the current state’, namely that the speaker is recalling a scene where he obtained the evidence that *Taro* can actually hear and is reporting the fact to someone. Given that there exist state verbs that can occur with *-te-i-ru*, we set our criteria for state verbs as ‘the ability to express the current state without being marked by *te-i-ru*’, rather than the inability to occur with it.

We will call the interpretation of the verb with *-te-i-ru*: (A) the static state and (B) the progressive aspect. The static state (A) refers to the state that holds at present. It can refer to an inherent property or a generic state that holds for an entity, such as *togat-te-i-ru* ‘be acute-angled’ or *sugure-te-i-ru* ‘be excelled in’, or the state, such as (18), which holds after a change of state takes place.

- (18) yuka ni saihi ga oti-te-i-ru
 floor DAT wallet NOM fall-LINK-exist-NPST.
 ‘There is a wallet lying on the floor (as a result of falling).’

Example (18) depicts a scene, in which a wallet is lying on the floor. Though not overtly expressed, it is understood that a falling event took place before the current state was reached. This interpretation is obtained with achievements and accomplishments, which are inherently [+telic] verbs. It should be noted, however, that two-place achievement verbs cannot occur with *-te-i-ru* as indicated in the unacceptability of examples such as **mituke-te-i-ru* (find-TE-exist-NPST) and **itame-te-i-ru* (hurt-TE-exist-NPST).

The (B) interpretation refers to progressive aspect, such as (19a). This progressive reading is obtained with verb classes other than the state, achievement, accomplishment and causative state. With active accomplishment verbs, it must

refer to the phase before the terminal point of the event is reached, as in (19b).

- (19) a. Kazue ga warat-te-i-ru
 Kazue NOM laugh-LINK-exist-NPST
 ‘Kazue is laughing.’ [activity]
- b. Kazue ga gohan o tabe-te-i-ru
 Kazue NOM meal ACC eat-LINK-exist-NPST
 ‘Kazue is eating the meal.’ [active accomplishment]

One may wonder how progressive aspect of accomplishment ([+telic, +durative]) is expressed, then. Hasegawa (1996:119-120) points out that the progressive phase of accomplishment verbs is expressed by *-te-ik* (LINK-go) or *-te-k* (LINK-come), rather than by *-te-i*, as exemplified in sentences like (20).

- (20) a. samuku naru
 be.cold become
 ‘It will become cold.’
- b. samuku natte {kuru/iku/*iru}
 be.cold become come/go/be-NPST
 ‘It is getting cold.’ (Hasegawa 1996: 120)

Both *-te-k* and *-te-ik* express a gradual change into a colder temperature. The difference between the two is that *-te-k* (LINK-come) refers to a gradual change toward the temporal reference point, while *te-ik* (LINK-go) refers to a gradual change away from the reference point. In Toratani (1997), accomplishment verbs are described as having both resultative and progressive interpretations with *-te-i-ru*. Analogously, Kiryu (1999: 50) states that *-te-i-ru* combined with a verb like *kie-* ‘go out’ (an accomplishment verb), can have an interpretation of ‘an on-going change of state at the time of reference’ when it occurs with an adverb *yukkurito* ‘slowly’ (e.g., *Hi ga yukkurito kie-te-i-ru* (fire NOM slowly go.out LINK-exist-NPST) ‘The fire is going out slowly’). Now, consider (21).

- (21) a. Hanako ga ima aisukuriimu o tabe-te-i-ru

Hanako NOM now ice cream ACC eat-LINK-exist-NPST
 ‘Hanako is eating the ice cream now.’

b. ? ima aisukuriimu ga toke-te-i-ru
 now ice cream NOM melt-LINK-exist-NPST
 ‘Now, the ice cream is melting.’

c. aisukuriimu ga toke-te-i-ru
 ice cream NOM melt-LINK-exist-NPST
 ‘The ice cream is melted.’

In (21a), *te-i-* marks progressive aspect of the event denoted by an activity verb and can occur with *ima* ‘now’. Example (21b) shows that an accomplishment verb followed by *te-i-* is awkward with *ima* ‘now’, which indicates that the reading of *te-i-* is not progressive. Accordingly, it seems more appropriate to analyze the reading of *-te-i-ru* which follows an accomplishment verb as a stage of ‘the resultative state’, which holds true at that utterance point rather than the progressive one, as indicated in (21c).

Example (21c) can be interpreted either that (i) the ice cream is completely melted or (ii) the ice cream is melted in comparison to the earlier stage. The default interpretation is the former one, and this will be the interpretation employed for the *-te-i-ru* test.

With causative classes, *-te-i-ru* gives rise to the progressive reading. This is due to the existence of the **do**₁ (...) component in the logical structure. For example, with a causative accomplishment verb such as (22a), it describes the progressive aspect of the causing action, and the default interpretation is that the process is currently going on.

With a causative achievement verb such as (22b), the **progression** of the causing action necessarily accompanies the iteration of the achievement events (i.e., eggs being broken one after another).

(22) a. Kazue ga tetu o tokasi-te-i-ru
 Kazue NOM iron ACC melt_{tran}-LINK-exist-NPST
 ‘Kazue is melting the iron.’

- b. Kazue ga tamago o wat-te-i-ru
 ice cream NOM eggs ACC break_{tran}-LINK-exist-NPST
 ‘Kazue is breaking the eggs.’

The results of the test 1 are summarized below.⁵

(23) The grammaticality/interpretation with *-te-i-ru*

- a. state: cannot occur with *-te-i-ru* or does not require it for the present tense reading
- b. achievement : (A) static state
- c. accomplishment : (A) static state
- d. activity : (B) progressive
- e. active accomplishment : (B) progressive
- f. causative achievement : (B) progressive (iterative)
- g. causative accomplishment : (B) progressive
- h. causative activity : (B) progressive
- i. causative active accomplishment : (B) progressive

Here, it is important to point out that *-te-i-ru*, which yields the interpretation of the progressive aspect, and that of the resultative state are morphosyntactically distinct. The former is a nuclear operator since it marks the progressive aspect, whereas the latter is not. The resultative state is obtained by combining an achievement or accomplishment verb with *-te-i-ru*. This means that *-te-i-ru* in this usage must be a morphological device to derive the relevant state. Accordingly, I propose that the state is derived by the lexical rule presented in (24).

(24) achievement/accomplishment + *-te-i-* → state

INGR/BECOME **pred_** (y) → **pred_** (y)

As we discuss in the following subsection, I assume that Kindaichi’s fourth class verbs (e.g., *sobie-* ‘(mountains) tower’) are a subset of achievement verbs. The lexical rule above accounts for the fact that *-te-i-* is obligatory for the fourth class verbs to denote a

⁵ The reason that the causative state is not included is mentioned in Section 2.7.

state.

2.6.2. Test 2: the citation form

The second test examines the interpretation of a verb when it occurs in its citation form (i.e., the forms that end in /u/). When a verb occurs as a predicate in its citation form, it expresses either the current state or the future (Teramura 1984). If the verb belongs to the class of states, it expresses the static state that holds presently, as in *iru* ‘(it) exist(s)’; *itamu* ‘(it) hurt(s)’; *iru* ‘(I) need (it)’. If the verb is a non-state verb, it expresses the events that are to happen or to be caused in the future⁶; for example, achievement verbs (e.g., *sinu* ‘(He’ll) die’, *otiru* ‘(It’ll) fall’), accomplishment verbs (e.g., *tokeru* ‘(It’ll) melt’, *kawaku* ‘(It’ll) dry’), activity verbs (including active accomplishment use) (e.g., *aruku* ‘(He’ll) walk’, *taberu* ‘(He’ll) eat’) express the events that are to happen in the future. When the citation form is used with Kindaichi’s fourth class, it gives rise to the future reading, although the sentences themselves sound odd, as shown in (25).

- (25) a. # Tokyo no nishi ni Huzi-san ga sobieru
Tokyo of west to Mt. Fuji NOM tower
‘To the west of Tokyo will rise Mt. Fuji.’
- b. # enpitu ga togaru
pencil NOM become.acute-angled
‘The pencil will become sharp.’

The state of towering or being acute-angled depicts a property that typically holds true currently as well as in the future. The sentences in (25) are odd since they express that the state that does not hold currently is going to appear in the future. Given that the verbs

⁶ When the involved entity is marked by the particle *wa* TOP, it can give rise to a habitual interpretation with any of the classes. For example, *hi wa sizumu* the sun TOP sink ‘The sun sets’ has the habitual reading, but not the future reading. According to Shibatani (1990: 267), *wa* allows the

in the fourth class express the future in their citation forms and the fact that they express a static state with the *-te-i-ru* form, I will treat them as a subtype of achievement verbs.

The results of the test 2 are summarized below.

(26) The interpretation in the citation form

_The state that holds currently: state

_The events that are to happen in the future: non-state

2.6.3. Test 3: *for* test and test 4: durative *in* test

The next two tests, the *for* test and *in* test, are adopted from Hasegawa (1996). Both tests capture the dynamic nature of an event and are thus applicable to non-state verbs. Test 3, the *for* test, is to examine the unboundedness of the event, and the *for* phrase (e.g., *for one hour, for ten minutes*) is compatible with [-telic] verbs. An adverbial phrase such as *n-zi-kan/n-nen-kan* ‘for *n* hours/for *n* years’ can occur with unbounded durative verbs such as activity verbs. If they occur with durative verbs with an end-point, that is, accomplishment and active accomplishment verbs, they must necessarily refer to the durative span before the terminal point is reached. The *in* test, on the other hand, distinguishes whether or not the event contains an end point. The *in* phrase (e.g., *in five minutes, in one hour*) is compatible with [+telic] verbs. If an adverbial phrase such as *n-zi-kan de/n-nen-kan de* ‘in *n* hours/in *n* years’ is sensitive to only telicity, it should be able to occur with achievement, accomplishment, or active accomplishment. However, achievement verbs with *in* phrase sound awkward in general, even if an extremely short period of time is employed, such as *issyun-de* ‘in a second’, as shown in (27).

speaker to express his or her judgment based on his or her past experience, and this function of *wa*

- (27) ? pen ga issyun de oti-ta
 pen NOM one moment in fall-PST
 (intended) ‘The pen fell in a second.’ [achievement]

The preferred reading of this sentence is that it took a second to reach the onset of the falling event, instead of the reading that the falling event itself took a second. This may have to do with the pragmatic reason that it is odd to specify that it took one second for the pen to fall when pens are supposed to fall in a second. Due to this awkwardness, I will employ a durative *in* phrase only as Test 4. This excludes achievements from the classes compatible with *in* phrase.

Accomplishments are compatible with a durative *in* phrase, as shown in (28a).

On the other hand, activities are incompatible with an *in* phrase but are compatible with a *for* phrase as shown in (28b).

- (28) a. sentakumono ga iti-zi-kan de(*iti-zi-kan) kawai-ta
 laundry NOM one-hour in (*one-hour-for) dry-PST
 ‘The laundry got dried in one hour/*for one hour.’ [accomplishment]
- b. kooen de iti-zi-kan(*iti-zi-kan de) hasit-ta
 park at one-hour-for(*one-hour-for in) run-PST
 ‘I ran at the park for one hour/*in one hour.’ [activity]

The non-state causative verbs can occur with both *for* phrase and *in* phrase, except for causative activity verbs. When non-state causative verbs occur with a *for* phrase, the sentence refers to the duration of the causing action, as shown in (29).

- (29) a. koma o go-hun-kan mawasi-ta
 top ACC five-minute-for spin-PST.
 ‘I spun the top for five minutes.’ [causative activity]
- b. saru ga ringo o iti-zi-kan otosi-ta
 monkey NOM apple ACC one-hour-for drop-PST.
 ‘The monkey dropped the apples for one hour.’ [causative achievement]

triggers the habitual reading.

In both examples, the *for* phrase refers to the temporal span of the causing action. In (29b), the causing action must necessarily accompany iterative falling events of apples. The *in* phrase, on the other hand, is compatible with causing actions which work over a bounded quantity, such as (30).

(30) saru ga ringo o iti-zi-kan de otosi-ta
 monkey NOM apple ACC one-hour-for in drop-PST.
 ‘The monkey dropped the apples in one hour.’ [causative achievement]

This sentence describes the causing action of dropping the apples (bounded quantity) completed in one hour. The quantity of the involved entity must be limited.

By contrast, the *in* phrase is incompatible with causative activity verbs, which are inherently atelic, as shown in (31).

(31) * koma o go-hun de mawasi-ta
 top ACC five-minute in spin-PST.
 ‘I spun the top in five minutes.’ [causative activity]

This sentence shows that causative activity verbs which are unbounded are incompatible with the *in* phrase, unless they refer to the one hour prior to the onset of the causing event, which is an irrelevant interpretation here.

The results of the Test 3 (*for* test) and Test 4 (durative *in* test) are summarized below.

(32) Can the verb occur with	<u>for</u> phrase?	<u>durative in</u> phrase?
a. state	: No	No
b. achievement	: No	No
c. accomplishment	: No	Yes
d. activity	: Yes	No
e. active accomplishment	: No	Yes
f. causative achievement	: Yes (iterative)	Yes (iterative)
g. causative accomplishment	: No	Yes
h. causative activity	: Yes	No
i. causative active accomplishment	: No	Yes

2.6.4. Test 5: *finish* test

Test 5 is the *finish* test, adopted from Hasegawa (1996). According to Hasegawa (1996), *-owar* ‘finish’ can form a compound with ‘accomplishments’, as shown in (33).

- (33) Kazue ga sono supagetti o tabe-owat-ta
Kazue ACC the spaghetti ACC eat-finish-PST
‘Hanako finished eating the spaghetti.’ [active accomplishment]

In (33), *-owar* marks the completion of the eating action that involved a bounded quantity of spaghetti. Hasegawa’s (1996) ‘accomplishment’ corresponds to Van Valin and LaPolla’s (1997) active accomplishment and some causative verbs. Since we discuss this morpheme in Chapter 6, here, we just mention that *-owar* is compatible with active accomplishment, causative achievement, causative accomplishment and causative active accomplishment. Sentence (33) above is an example of active accomplishment.

Examples of the other classes are shown below.

- (34) a. ringo o otosi-owat-ta
apples ACC drop-finish-PST
‘I finished dropping (all) the apples.’ [causative achievement]
- b. kami o kawakasi-owat-ta
hair ACC dry-finish-PST
‘I finished drying my hair.’ [causative accomplishment]

The results of Test 5 are summarized below.

- (35) a. The classes that cannot occur with *-owar*
state, achievement, accomplishment, activity, causative activity
- b. The classes that can occur with *-owar*
active accomplishment, causative accomplishment,
causative active accomplishment
and with causative achievement, the reading is necessarily iterative.

2.6.5. Test 6: *slowly* test, Test 7: *zyozyoni* test, Test 8: *dandan* test

Tests 6 through 8 are designed to see the compatibility with an adverb *yukkuri*

‘slowly’, *zyozyoni* ‘gradually’, and *dandan* ‘gradually’ respectively.

2.6.5.1. Test 6: *slowly test*

The adverb *yukkuri* ‘slowly’ can occur with an event which involves durative physical action (e.g., activity: *yukkuri aruku* ‘walk slowly’, active accomplishment: *yukkuri eki made aruku* ‘walk slowly to the station’). Achievement verbs are incompatible with *yukkuri* because they cannot involve durative physical motion (e.g., **yukkuri otiru* ‘fall slowly’). Accomplishments are durative. However, if they do not involve physical motion, they sound awkward with *yukkuri* ‘slowly’ as in (36).

- (36) *kami ga* *yukkuri* *kawai-ta*
 hair ACC slowly dry-PST
 ‘My hair dried slowly.’ [accomplishment]

On the other hand, if the accomplishment verb expresses a physical motion, it can occur with *yukkuri* (e.g., *huusen ga yukkuri agat-ta* ‘The balloon went up slowly’).

As for non-state causative classes, *yukkuri* ‘slowly’ is compatible with them. This is because they have the component of **do**_(x, ...), which typically contains an animate entity which can act *slowly*. If *yukkuri* occurs with a causative achievement verb, the reading must be that the causing action is done slowly; for example, *yukkuri otosu* ‘drop it slowly’ is acceptable only if the adverb modifies the causing action but not the falling phase, as shown in the LS in (37).

- (37) *saru ga* *yukkuri* *ringo o* *ki kara* *otosi-ta*
 monkey NOM slowly apple ACC tree from drop-PST
 ‘The monkey slowly dropped the apple from the tree.’
 slow [(**do**_(*saru*, Ø))] CAUSE [INGR **fallen**_(*ringo*)]

When it occurs with causative accomplishment, the reading becomes ambiguous whether

it refers to the causing action modifying **do_** (x, ...), or the process modifying BECOME **state_** (y), as shown in the LS in (38).

- (38) Hanako ga yukkuri doa o sime-ta
 Hanako NOM slowly door ACC close-PST
 ‘Hanako closed the door slowly,’ or ‘Hanako slowly closed the door.’
 [(**do_** (Hanako, Ø))] CAUSE [**slow_** (BECOME **closed_** (doa))]
slow_ [(**do_** (Hanako, Ø))] CAUSE [BECOME **closed_** (doa)]

The reason why *yukkuri* ‘slowly’ can take BECOME **state_** (y) in its scope is that the process is manipulated by the doer, who can act slowly. This is different from the case of a causative achievement, where the causer does not have control over an instantaneous change of state. The same type of ambiguity is present with a causative activity as well as a causative active accomplishment, modifying multiple components of [**do_** (x, Ø)] in their logical structures.

2.6.5.2. Test 7: *zyozyoni* test

Test 7 employs an adverb *zyozyoni* with the simple past form of the verb. This adverb is compatible only with a durative telic event that is an accomplishment (e.g., *zyozyoni tokeru* ‘melt gradually’) and its causative counterpart, causative accomplishment (e.g., *zyozyoni tokasu* ‘melt it gradually’).⁷ It is incompatible with a punctual event such as an achievement (e.g., **zyozyoni otiru* ‘fall gradually’—the slow motion interpretation is irrelevant here), or with an atelic event such as an activity (e.g., **zyozyoni aruku* ‘walk gradually’).

2.6.5.3. Test 8: *dandan* test

⁷ Due to the fact that the stem of *zyozyoni* is borrowed from Chinese, it may bring about some stylistic awkwardness with native Japanese words.

Test 8 employs an adverb *dandan* ‘gradually’ with the construction *-te-k* (LINK-come), shown in (39).

- (39) *dandan* *sentakumono ga* *kawai-te-ki-ta*
 gradually laundry NOM dry_{intrans}-LINK-come-PST
 ‘The laundry is getting dried gradually.’ [accomplishment]

Hasegawa (1996:119-120) notes that *-te-k* (LINK-come) is to express the progressive phase of accomplishment verbs as discussed earlier (Section 2.6.1.). Naturally, an accomplishment verb can co-occur with *-te-k* (LINK-come), expressing a gradual change of state. However, since this construction alone can yield various interpretations depending on the lexical aspect of the verb,⁸ the intended reading is limited to a gradual change of the process, which is available only with accomplishment verbs.

Interestingly, causative accomplishment cannot occur in this construction, as shown in (40a). This contrasts with Test 7, *zyozyoni* ___ *-ta* ‘gradually x happened’, which can occur with causative accomplishments, as shown in (40b).

- (40) a. * *dandan* *sentakumono o* *kawakasi-te-ki-ta*
 gradually laundry ACC dry_{trans}-LINK-come-PST
 intended: ‘I dried the laundry gradually.’ [causative accomplishment]
- b. *zyozyoni* *sentakumono o* *kawakasi-ta*
 gradually laundry ACC dry_{trans}-PST
 ‘I dried the laundry gradually.’ [causative accomplishment]

⁸ When *-te-ik* (-LINK-go) or *-te-k* (-LINK-come) are combined with an activity verb, it means to ‘do an activity before one goes or comes somewhere, as shown in (a) and (b). An achievement verb can also be combined with *-te-ik* (-LINK-go) or *-te-ku* (-LINK-come). It can express the direction of an action as shown in (c).

- (a) *gohan o* *tabe-te-ki-ta*
 rice ACC eat-LINK-come-PST
 ‘I have had a meal before I came here.’
- (b) *gohan o* *tabe-te-i-ta*
 rice ACC eat-LINK-go-PST
 ‘He has had a meal here before he went out.’
- (c) *hon ga* *oti-te-ki-ta*
 book NOM fall-LINK-come-PST
 ‘The book has fallen onto me.’

Thus, the combination of Test 7 and Test 8 enables us to distinguish an accomplishment verb from its causative counterpart.

The results of the Test 6, Test 7, and Test 8 are summarized below.

(41) Can it occur with		<i>yukkuri?</i>	<i>zyozyoni</i> __ -ta?	<i>dandan</i> __ -te-ki-ta?
	<u>'slowly'</u>	<u>'gradually'</u>	<u>'gradually'</u>	
a.	state	:	No	No
b.	achievement	:	No	No
c.	accomplishment	:	Yes (subset)	Yes
d.	activity	:	Yes	No
e.	active accomplishment	:	Yes	No
f.	causative achievement	:	*No	No
g.	causative accomplishment	:	**Yes	Yes
h.	causative activity	:	**Yes	No
i.	causative active accomplishment	:	**Yes	No

*No in the sense that it cannot modify the change of state.

**Which component of the event occurs slowly is ambiguous.

2.6.6. Test 8: causative paraphrase test

Van Valin and LaPolla (1997) employ a causative paraphrase test in order to distinguish the non-causative classes from their causative counterparts. That is, in English, causative verbs can have a paraphrase with a phrase 'cause', while non-causative verbs cannot. For example, a sentence with a causative state verb 'frighten', as in *The dog frightened the boy*, can be paraphrased into *The dog caused the boy to be afraid*; a sentence with a causative achievement verb 'pop', for example, *The cat popped the balloon*, can be paraphrased into *The cat caused the balloon to pop*, and so on.

This particular translation equivalent of causative paraphrase test cannot be employed as a diagnostic test in Japanese. Consider (42).

(42)	a.	koori ga	toke-ta
		ice NOM	melt-PST
		'The ice melted.'	[accomplishment]

- b. Kazue ga koori o tokasi-ta
 Kazue NOM ice ACC melt_{tran}-PST
 ‘Kazue melted the ice.’ [causative accomplishment]
- c. * Kazue wa koori ga tokeru-koto o okosi-ta
 Kazue TOP ice NOM melt_{intran}-event ACC make.happen-PST
 ‘Kazue made happen the event of ice’s melting.’
- d. * Kazue ga koori o(/ni) toke-sase-ta
 Kazue NOM ice ACC(/DAT) melt_{intran}-CAUS-PST
 ‘Kazue made(/let) the ice melt.’
- e. Taroo ga Ziroo o taore-sase-ta
 Taro NOM Jiro ACC fall_{intran}-CAUS-PST
 ‘Taro made Jiro to fall down.’
- f. * Taroo ga isu o taore-sase-ta
 Taro NOM chair ACC fall_{intran}-CAUS-PST
 ‘Taro made the chair to fall down.’

In English, *Kazue melted the ice* can be paraphrased into *Kazue caused the ice to melt*.

This sentence, however, does not translate well into Japanese. If we use *okos-* ‘cause/make happen’, the sentence is unacceptable as shown in the (42c). It cannot be paraphrased with a causative morpheme *-(s)ase* either, as shown in (42d). This is because the construction with *-(s)ase* requires an agent causee (Shibatani 1973b, 1976); when the sentence has an agent causee, it is acceptable as in (42e), but if not, the sentence is unacceptable as in (42f). Thus, the translation equivalent of *X cause Y to (verb)* is inappropriate for the diagnostic test in Japanese.

Alternatively, the following constructions seem to capture the essence of the causative paraphrase test, and hence, we will keep it as a causative paraphrase test. It can be translated as *X did something that would lead to the occurrence of the state*.

Accordingly, it happened.

- (43) a. Taroo ga koppu o wat-ta
 Taro NOM cup ACC break_{tran}-PST
 ‘Taro broke the cup.’ [causative achievement]
- b. Taroo wa koppu ga wareru-yoona nanika o si-ta
 Taro TOP cup NOM break_{intran}-as something ACC do-PST
 ‘Taro did something that would lead to the state
 such that the cup would break.’
- dakara ware-ta
 therefore break-PST
 ‘Therefore, it broke.’
- (44) a. Taroo ga huusen o hukuramase-ta
 Taro NOM balloon ACC inflate_{tran}-PST
 ‘Taro blew up the balloon.’ [causative accomplishment]
- b. Taroo wa huusen ga hukuramu-yoona nanika o si-ta
 Taro TOP balloon NOM blow.up-as something ACC do-PST
 ‘Taro did something that would lead to the state
 such that the balloon would blow up.’
- dakara hukuran-da
 therefore blow.up-PST
 ‘Therefore, it blew up.’

If the verb is non-causative, the construction introduces an extra argument *zibun* ‘self’ as shown in (45b), and the paraphrase is awkward.

- (45) a. Taroo ga hon o yon-da
 Taro NOM book ACC read-PST
 ‘Taro read a book.’ [activity]
- b. ? Taroo wa zibun niyotte hon ga yoma-reru-yoona
 Taro TOP self by book NOM read-PASS-as
 nanika o si-ta
 something ACC do-PST
 ‘Taro did something that would lead to the state
 such that the book will be read by himself.’
- dakara yom-are-ta
 therefore read-PASS-PST
 ‘Therefore, it was read.’

Though the tests presented in this section may not be perfect independently, in combination, they should be able to distinguish the Aktionsart classes of Japanese predicates.

2.6.7. Summary of the diagnostic tests

Table 2.2 presents the results of the diagnostic tests, which identify the Aktionsart classes in the sense of Van Valin and LaPolla (1997).

Table 2.2: Diagnostic tests for predicate classes in Japanese

	Test 1 <i>-te-i-ru</i> test	Test 2 citation form test	Test 3 <i>for</i> test	Test 4 <i>in</i> test	Test 5 <i>finish</i> test	Test 6 <i>slowly</i> test	Test 7 <i>zyozyo- ni</i> test	Test 8 <i>dan- dan</i> test	Test 9 caus. para. test
state	No or un- necessary	present	No	No	No	No	No	No	No
achieve- ment	static state	future	No	No	No	No	No	No	No
(Kindaichi's fourth class)	static state (<i>-te-i-ru</i> obligatory)	future but odd	No	No	No	No	No	No	No
accomplish- ment	static state	future	No	Yes	No	Yes for a subset	Yes	Yes	No
activity	progressive	future	Yes	No	No	Yes	No	No	No
active accomplish- ment	progressive	future	No	Yes	Yes	Yes	No	No	No
causative achieve- ment	progressive (causing action)	future	Yes (itera- tive)	Yes (itera- tive)	Yes (itera- tive)	No (Yes for causing action)	No	No	Yes
causative accomplish- ment	progressive	future	No	Yes	Yes	Yes (ambig- uous)	Yes	No	Yes
causative activity	progressive	future	Yes	No	No	Yes (ambig- uous)	No	No	Yes
causative active accomplish- ment	progressive	future	No	Yes	Yes	Yes (ambig- uous)	No	No	Yes

2.6.8. Aktionsart classes of Japanese verbs

Applying the diagnostic tests, Table 2.3 shows examples of Aktionsart classes of Japanese verbs with their logical structures.

Table 2.3: Aktionsart classes of Japanese verbs

Class	Verbs (in citation form)	LOGICAL STRUCTURE (LS)
State	iru 'exist' sinziru 'believe' ⁹ iru 'need'	be-at ((y), x) believe (x, y) need ((x), y)
Activity	naru 'ring' yureru 'shake _{intran} ' mawaru 'spin'	do (x, [ring (x)]) do (x, [shake (x)]) do (x, [spin (x)])
Causative activity	narasu 'ring _{tran} ' yurasu 'shake _{tran} ' mawasu 'spin _{tran} '	[do (w, ∅)] CAUSE [do (x, [ring (x)])] [do (w, ∅)] CAUSE [do (x, [shake (x)])] [do (w, ∅)] CAUSE [do (x, [spin (x)])]
Achievement	tuku 'arrive' mitukeru 'find' kowagaru 'become terrified'	INGR be-at ((y), x) INGR known (x, [be-at ((y), z)]) INGR feel (x, [terrified])
Causative achievement	otosu 'drop' miseru 'show' odorokasu 'frighten'	[do (w, ∅)] CAUSE [INGR fallen (x)] [do (w, ∅)] CAUSE [INGR see (x, y)] [do (w, ∅)] CAUSE [INGR feel (x, [terrified])]
Accomplishment	tokeru 'melt' kawaku 'dry' tidimu 'shrink'	BECOME melted (x) BECOME dried (x) BECOME shrunk (x)
Causative accomplishment	tokasu 'melt' kawakasu 'dry' tidimeru 'shrink'	[do (w, ∅)] CAUSE [BECOME melted (x)] [do (w, ∅)] CAUSE [BECOME dried (x)] [do (w, ∅)] CAUSE [BECOME shrunk (x)]
Active accomplishment	soko made tobu there as far as fly _{intran} 'fly as far as there'	do (x, [fly (x)]) & BECOME be-at (soko, x)
Causative active accomplishment	soko made tobasu there as far as fly _{tran} 'fly it as far as there'	[do (x, ∅)] CAUSE [do (y, [fly (y)])] & BECOME be-at (soko, y)]

2.7. Notes on Japanese verbs

There are a few more points we need to be aware of about Japanese verbs. First, Japanese has a number of morphologically related intransitive-transitive pairs. The

derivational relation can be classified into roughly 20 patterns on the basis of the form of the root (cf. Jacobsen 1992, Morita 1990), though the form itself does not convey the status of transitivity (cf. Kitagawa and Fujii 1999). For example, *-e-* and *-Ø-* can occur as both an intransitive/transitive and a transitive/intransitive opposition, as in *tat*_{intran} ‘stand’ vs. *tat-e*_{tran} ‘make stand’, as opposed to *ur-e*_{intran} ‘sell_{intran}’ vs. *ur*_{tran} ‘sell_{tran}’.

I observe that the majority of the intransitive/transitive distinctions correspond to non-causative/causative Aktionsart classes. Not all, however, fall into this relation, as illustrated in (46) (Examples are taken from Jacobsen (1992)).

(46) Contrast in the root
(intran/tran)

Intransitive verbs

Transitive verbs

Achievement/Causative Achievement

a.	re/s	kaku-re-	‘hide _{intran} ’	kaku-s-	‘hide _{tran} ’
b.	i/os	ot-i-	‘fall’	ot-os-	‘drop’
c.	Ø/as	odorok-	‘become surprised’	odorok-as-	‘scare’
d.	ar/e	at-ar-	‘touch’	at-e-	‘cause to touch’

Accomplishment/Causative Accomplishment

e.	e/Ø	hag-e-	‘peel _{intran} off’	hag-	‘peel _{tran} off’
f.	Ø/e	ak-	‘open _{intran} ’	ak-e-	‘open _{tran} ’
g.	ar/e	ag-ar-	‘rise’	ag-e-	‘raise’
h.	ar/Ø	tog-ar-	‘become sharp’	tog-	‘sharpen’
i.	i/as	nob-i-	‘become extended’	nob-as-	‘extend’

Activity/Causative Activity

j.	Ø/as	hikar-	‘shine _{intran} ’	hikar-as-	‘shine _{tran} ’
k.	Ø/as	nar-	‘ring _{intran} ’	nar-as-	‘ring _{tran} ’
l.	r/s	mawa-r-	‘turn _{intran} ’	mawa-s-	‘turn _{tran} ’
m.	r/s	koroga-r-	‘roll _{intran} ’	koroga-s-	‘roll _{tran} ’

Achievement (One-place)/Achievement (Two-place)

n.	ar/e	mituk-ar-	‘be found’	mituk-e-	‘find’
----	------	-----------	------------	----------	--------

Activity (One-place)/Activity (Two-place)

⁹ Verbs can belong to more than one class. For example, the state verb *sinziru* ‘believe’ has an achievement sense ‘become a believer of’.

- o. Ø/e tuzuk- ‘continue_{intran}’ tuzuk-e- ‘continue_{tran}’

The examples from (46a) through (46m) illustrate that the intransitive/transitive distinction mirrors the non-causative/causative distinction. On the other hand, the examples in (46n) and (46o) show that the distinction is reflected in the difference in the number of the arguments but not in the non-causal/causal opposition. The latter case is atypical, but exists. This cautions us from using the morphological information solely to identify the causative classes.

The second point concerns with the causative state verbs. One may have noticed that none of the results of the diagnostic tests list the causative state class. This is because it is not evident that there is a non-derived causative state class in Japanese. Example (47) shows examples of intransitive state verbs. Some of them can have transitive forms with *-(s)as* (47a-c), whereas others cannot (47d-f).

- (47) a. *i-* ‘exist (animate)’ *i-sas-u* ‘make stay (animate)’ future
 b. *niow-* ‘smell’ *niow-as-u* ‘perfume’ future
 c. *kikoe-* ‘be audible’ *kikoe-sas-u* ‘make hear’ future
 d. *ir-* ‘need’ **ir-as-*
 e. *ar-* ‘exist (inanimate)’ **ar-as-*
 f. *itam-* ‘hurt’ **itam-as-*

The point is that the forms with *-(s)as* in (47a-c) denote events in the future in citation form. Recall that the state class is to yield the present tense interpretation in citation form. The inability to express the present tense in its citation form of the causative verb in (47a-c) seems to be contradictory to the static nature of the state class irrespective of it as a caused state. Note also that the translation equivalents of English causative state verbs are not causative states in Japanese. For example, English ‘be surprised’ is a state

verb, **feel**_ (x, [**surprised**_ (x)]), and ‘surprise’ is its causative counterpart [...] CAUSE **feel**_ (x, [**surprise**_ (x)]). Consider (48).

- (48) a. Hanako wa odoroi-ta
 Hanako TOP become.surprised-PST
 ‘Hanako became surprised.’
- b. Hanako wa odoroi-te-i-ru
 Hanako TOP become.surprised-LINK-exist-NPST
 ‘Hanako is surprised.’
- c. Taro ga Hanako o odorokasi-ta
 Taro NOM Hanako ACC surprise-PST
 ‘Taro scared Hanako.’

In Japanese, the state of being surprised is denoted by *odoroi-te-i-ru* ‘be surprised’, as shown in (48b). The form *odoroi-te-i-ru* in (48b) is derived from *odorok-* ‘become surprised’ of (48a). As we discussed, the resultative state is derived from a telic verb by combining *te-i-ru* (LINK-exist) and a telic verb. Because *odorok-* ‘become surprised’ is an achievement verb, *odorok-as-* ‘scare’ must be a causative achievement verb, not a causative state. Other psych-verbs as well enter into this achievement/causative achievement opposition (e.g., *okor-* ‘become angry’ vs. *okor-as* ‘anger’; *kanasim-* ‘become sad’ vs. *kanasim-as-* ‘sadden’).

2.8. Summary

This chapter has introduced the framework of Role and Reference Grammar. It has also developed eight diagnostic tests to determine the Japanese Aktionsart classes. It was pointed out that Japanese has a mechanism to derive ‘state’ by means of combining *te-i-* (LINK-exist) and an achievement or accomplishment verb, and a lexical rule, (24) repeated as (49), was proposed.

- (49) achievement/accomplishment + *-te-i-* → state
INGR/BECOME **pred_ (y)** → **pred_ (y)**

CHAPTER 3

Descriptive Characteristics

This chapter presents a descriptive analysis of compound verbs, making observations about compound verbs gathered from texts (see the text references). It considers the second question raised at the outset of Chapter 1; namely, to what degree are the properties of the components maintained in the predicate, and as a result of being combined together, what property emerges? Section 3.1 discusses which kind of verbs enter into the compound in terms of their ability to occur as an independent verb. It also discusses the maintenance of meaning of the verb as an independent verb in the compound. Section 3.2 examines the transitivity of compounds. We examine the transitivity structure of compound verbs quantitatively based on Jacobsen's (1992) observation of 'transitivity parity'. We also examine the function of the transitivity alternation in V2 position. Section 3.4 presents the results of frequency counts, namely, which particular component verb is more frequently combined with another.

This chapter treats the compounds as a single class, as an entity that has the morphological shape of V-V, excluding a compound with *-(s)ase* 'causative' or *-(r)are*

‘passive’. It makes no assumptions concerning the status of compounding, whether it is lexical or syntactic.

3.1. The component’s ability to occur as an independent verb

3.1.1. The types

This section discusses the component verb’s ability to occur as an independent verb. I observe that the Japanese compound verbs pattern analogously to the English ‘-berry’ compounds, and for that reason I model the grouping of the English ‘-berry’ compounds below.

English ‘-berry’ compounds can be divided into three types on the basis of their ability to occur as an independent word (cf. Anderson 1985, Spencer 1991). The examples of each type are: (i) *blueberry*; *blackberry*, (ii) *strawberry*; *raspberry* (iii) *cranberry*; *loganberry*; *huckleberry*. Since they have not been labeled, I will refer to them as (i) the *blue*-type, (ii) the *straw*-type, and (iii) the *cran*-type for the purpose of the ease of the exposition.

The *blue*-type (e.g., *blue* of *blueberry*) refers to a morpheme which has an independent occurrence as a word, while maintaining the original sense of the independent word in the compound. Although the compound *blueberry* as a whole denotes a particular species of fruit, and the meaning is not obtained compositionally (i.e., it is not the case that *blueberry* denotes a *berry* that bears the property of *blue*), the original sense of the color seems to be fairly transparent and is well preserved in the compound.

The next class is the *straw*-type (e.g., *straw* of *strawberry*). In Modern English, *straw* denotes ‘the dried stem of a plant’. According to an etymological dictionary (Hoad 1986: 465), *straw* is the archaic form corresponding to Modern English *strew* (*str_aw* in Old English); the dictionary (ibid.) also states that the reason this name was given is unknown. The Oxford English Dictionary (Murray et al. 1989: 860) states “[t]he reason for the name has been variously conjectured. One explanation refers ... [to] a particle of straw or chaff, a mote describing the appearance of the achenes scattered over the surface of the strawberry; another view is that it designates the runners.” If we assume that *scattering* is the sense of *straw* in *strawberry*, which is distinct from its main sense in modern day, we may characterize the *straw*-type as a morpheme which has an independent occurrence as a word but has a distinct sense in the compound from the original sense as an independent word.

The *cran*-type (e.g., *cran* of *cranberry*) refers to a morpheme which has no independent occurrence as a word. *Cran* of *cranberry* is an unattested word in English.¹⁰ It can demonstrate its function as a morpheme only after it is combined with *-berry*.

Now, the component verbs in the Japanese compound verbs can be classified in a similar fashion. The first type of Japanese compound verbs is the *blue*-type (occurring as an independent word, maintaining the original sense in the compound), such as in (1).

- (1) kan o nigiri-tubusi-ta
 can ACC squeeze-crush-PST
 ‘He crushed the can by squeezing.’

Both component verbs, *nigir*- ‘squeeze’ (V1) and *tubus*- ‘crush’ (V2) are of the *blue*-type because they both occur independently as a verb, and the original sense of each verb (*nigir*- ‘squeeze’ and *tubus*- ‘crush’) is maintained fairly transparently in the compound

(*nigiri-tubusu* ‘crush by squeezing’), although the relation of the components (i.e., V1 expresses the means of V2), must be specified in association with the construction of V-V.

The second type is the *straw*-type. These component verbs occur as an independent word, but the original sense is lost in the compound. They bear a compound-specific meaning which is distinct from any of the senses as an independent word. An example of this type is shown in (2).

- (2) a. ame ga huri-dasi-ta
 rain NOM fall-let.exit(begin)-PST
 ‘It began to rain.’
- b. * ame ga dasi-ta
 rain NOM let.exit-PST
 (Intended) ‘The rain started (falling).’

In (2), the second member *das-* ‘let exit’ (V2) occurs independently as a word. When it occurs as V2, it displays a compound-specific meaning ‘begin’. It is a distinct sense from the original sense ‘let exit’. The fact that it cannot denote ‘begin’ as an independent word is shown in the unacceptability of (2b). This shift in meaning is observed to be the manifestation of ‘semantic bleaching’ (Givon 1979: 316), in which a concrete conception shifts toward abstractness. *Das-* denotes a concrete spatial notion of letting something out, which involves crossing a boundary. I speculate that this physical boundary is extended to mean a temporal boundary, which corresponds to the onset of an event, and hence crossing the temporal boundary is metaphorically used as inception. The point here is the *straw*-type verbs bear a meaning in a compound which is distinct from the original sense as an independent verb.

¹⁰ According to Jensen (1990: 100), the morpheme *cran* is derived from Low German *kraan* ‘crane’.

The third type is the *cran*-type. These component verbs are not non-words in a strict sense. They are not attested in present-day Japanese but are full-fledged verbs in pre-modern Japanese. Sentence (3) shows an example of this type.

- (3) subete o kanaguri-sute-ta
 all ACC (grasp hard and pull)-throw.away-PST
 ‘He flung away everything.’

The V2 *sute*- ‘throw away’ occurs as a verb. In contrast, the V1 *kanagur*- (‘to grasp and pull something violently’ in Old Japanese) can be found only in a compound in present-day Japanese.

Strictly speaking, there is one more type of Japanese compound verbs. I consider them to be a subset of the *blue*-type, where one of the peripheral senses of a component as an independent word is employed in the compound. An example is shown in (4).

- (4) keeki ga yaki-agat-ta
 cake NOM bake-rise-PST
 ‘The cake is completely baked.’

The main sense of the second member V2 *agar*- is *to rise*, while it means *completion* in the compound. The meaning of *completion* originates in one of the senses of *-agar*, which can be seen in contexts such as (5).

- (5) a. mondaisyuu ga agat-ta
 collection.of.problem NOM complete-PST
 ‘The book consisting of problems is completed.’
- b. ame ga agat-ta
 rain NOM complete-PST
 ‘The rain stopped.’

Thus, the *blue*-type refers to a component verb which occurs as an independent word, bearing the original sense in the compound, the main sense or a peripheral sense. The *straw*-type refers to the component verb that also occurs as an independent word, while it does not maintain the original sense of the verb in the compound. The *cran*-type corresponds to cases in which a component verb has no independent occurrence in present-day Japanese.

3.1.2. Distribution of forms

Classifying the component verbs into *blue*-, *straw*-, and *cran*- types yields nine possible combinations shown in table 3.1 (labeled from (a) through (i)). The combinations from (a) through (g) can be readily exemplified, while the combinations of (h) and (i) seem to have no examples.

Table 3.1: Distribution of forms

	Combination	V1-V2		
a.	blue - blue	keri-taosu naki-sakebu	kick-make fall cry-shout	‘make fall by kicking’ ‘shout while crying’
b.	blue - straw	mi-naosu tabe-makuru	look-fix eat-turn up	‘reexamine’ ‘eat and eat’
c.	blue - cran	yase-sarabaeru kure-nazumu	lose weight-(become bony) get dark-(make progress)	‘become skinny’ ‘linger in the evening’
d.	straw - blue	tati-sawagu tori-kimeru	stand-make a fuss take-decide	‘make a fuss’ ‘decide’
e.	straw - straw	oti-tuku mori-kaesu	fall-arrive heap up-return	‘calm down’ ‘regain one’s strength’
f.	cran - blue	obiki-yoseru makari-tooru	(attract)-gather (go)-pass	‘lure’ ‘pass unremarked’
g.	cran - straw	nigari-kiru makusi-tateru	(feel.disgusted)-cut (turn up)-let stand	‘look sour’ ‘keep talking’
h.	straw - cran	?		
i.	cran - cran	?		

Note: The parentheses indicate that the verb does not occur as an independent verb in contemporary Japanese.

morpheme is used with the same content in both compound and non-compound uses (e.g., *nak-* ‘cry’ in *naki-dasu* ‘begin to cry’), whereas specialization of meaning starts as we move toward the right. The *straw*-type verbs that occur in V2 position are located somewhere in the middle. Though their meanings may be bleached, they contribute some meaning to the compound. The *straw*-type verbs in V1 position, on the other hand, sit at the right end, adding only formality in register (e.g., *tati-sawagu* stand-make.a.fuss ‘make a fuss’).

3.2. Transitivity

3.2.1. Introduction

This section discusses the transitivity of compound verbs. Transitivity can be defined on the basis of valency. Valency specifies the number of arguments taken by a verb (Tesnière 1953, 1959). If the verb takes a single argument, the verb is said to be intransitive, whereas if the verb takes two arguments, it is said to be transitive. Valency may be determined on either semantic or syntactic grounds. Semantic valence is concerned with the number of arguments that necessarily participate in the scene denoted by the verb, whereas syntactic valence is concerned with the required number of arguments that are morphosyntactically encoded. These two may not necessarily coincide with each other. The English sentence *It rains* can provide an immediate sense of this distinction between syntactic and semantic valence. The verb *rain* requires one syntactic argument *It*, while *It* is not the semantic argument of the verb (i.e., the verb takes no semantic argument); therefore, the syntactic valence of this verb is one, whereas the semantic valence is zero, and hence, the verb *rain* is syntactically intransitive.

3.2.2. Transitivity parity

As introduced in Chapter 2, a number of Japanese verbs appear in morphologically related intransitive-transitive pairs (e.g., *hitar-* ‘soak_{intran}’ vs. *hitas-* ‘soak_{tran}’ and *toke-* ‘melt_{intran}’ vs. *tokas-* ‘melt_{tran}’). Jacobsen (1992) points out that some of the intransitive-transitive pairs can appear as V2 individually. For example, V1-*agaru*_{intran} ‘rise’ has a transitive counterpart V1-*ageru*_{tran} ‘raise’; or V1-*deru*_{intran} ‘come out’ has a transitive counterpart V1-*dasu*_{tran} ‘take out’. Jacobsen also points out that the paired V2s in transitivity tend to occur with a V1 that has the same transitivity as its own; in other words, tendentially, an intransitive V1 is compounded with an intransitive V2 (e.g., *deki*_{intran}-*agaru*_{intran} ‘become completed’), whereas a transitive V1 is compounded with a transitive V2 (e.g., *si*_{tran}-*ageru*_{tran} ‘complete’). Jacobsen terms this pattern **transitive parity**. He also notices the existence of the counter pattern, which he terms **transitive imparity**. For example, in *suri*_{tran}-*agaru*_{intran} ‘come off the press’, a transitive V1 is compounded with an intransitive V2, where there is a mismatch in transitivity between V1 and V2.

Based on Jacobsen’s observation, in the following two sub-sections, I examine (i) why some V2 verbs occur in an intransitive-transitive pair and (ii) whether the observation of ‘transitivity parity’ can be quantitatively supported on the basis of frequency counts.

3.2.3. Motivation for morphological distinction in V2 position

Why do some V2 verbs show up in a morphologically related pair? To answer this question, we examine: (i) whether alternation of transitivity in V2 position brings

about any change in the compound as a whole, and if it does, (ii) what changes it brings about. As I discuss those points, I refer to the notion of ‘parameters of transitivity’ proposed by Hopper and Thompson (1980), who posit that transitivity is an amalgamation of a number of parameters.¹¹ The parameters that are immediately relevant to the current discussion are: ‘participants’ and ‘agency’, which are defined as follows in Hopper and Thompson (1980: 252).

- (7) Participants: No transfer [of an action] at all can take place unless at least two participants are involved.
- Agency: It is obvious that participants high in Agency can effect a transfer of an action in a way that those low in Agency cannot. Thus the normal interpretation of *George startled me* is that of a perceptible event with perceptible consequences; but that of *The picture startled me* could be completely a matter of an internal state.

It is my interpretation that ‘participants’ refers to the presence of two participants or one at the scene of the event; and ‘agency’, whether the event involves an ‘effector’ (Van Valin and Wilkins 1996) which can bring about the transfer of an action.

I base the majority of the discussion on ‘the intransitive-transitive minimal pairs’ which illustrate the differences clearly. By ‘the intransitive-transitive minimal pairs’, I mean a pair of compound verbs which has the same V1 but contrasts in transitivity in V2 position such as (8).

V2-pair minimal pair ([V1-V2_{intransitive}] vs. [V1-V2_{transitive}])

- | | | | |
|-----|--|-------------------|---------------------------|
| (8) | a. [hari _{tran} -tuku _{intran}] _{intran} | paste-be attached | ‘be attached’ |
| | a_. [hari _{tran} -tukeru _{tran}] _{tran} | paste-attach | ‘attach by pasting’ |
| | b. [kiri _{tran} -nukeru _{intran}] _{intran} | cut-come off | ‘fight one’s way through’ |

¹¹ The parameters are: (A) participants, (B) kinesis, (C) aspect, (D) punctuality, (E) volitionality, (F) affirmation, (G) mode, (H) agency, (I) affectedness of O[bject], and (J) individuation of O. See Hopper and Thompson (1980) for their definitions.

b_. [kiri_{tran}-nuku_{tran}]_{tran} paste-pull ‘cut out’

Returning now to the motivation for the transitivity distinction in V2 position, I notice that there are two clear-cut cases; namely, (i) the V2’s transitivity determines the transitivity of the entire compound, affecting the number of the participants; and (ii) the difference of V2’s transitivity affects the meaning of the compound. It is also noticed that there is one not very obvious case; namely, the distinction neither changes the transitivity/number of participants nor the (truth-conditional) meaning of the compound. These points are elaborated below.

3.2.3.1. Change in number of participants

The first case is where the intransitive-transitive distinction in V2 position corresponds to the transitivity of the compound as a whole. Having the same V1, the transitive-intransitive distinction directly affects the transitivity of the compound, affecting the number of participants of the event. One instance is exemplified in (9), whose sentential examples are shown in (10) and (11) respectively.

- (9) a. [suri_{tran}-heru_{intran}]_{intan} rub-reduce_{intran} ‘wear.out_{intran}’
 b. [suri_{tran}-herasu_{tran}]_{tran} rub-reduce_{tran} ‘wear.off_{tran}’

- (10) kutu no soko ga [suri_{tran}-het_{intran}]_{intan}-ta
 shoe GEN sole NOM rub-reduce_{intran}-PST
 ‘The soles of the shoes wore out.’

- (11) Tomoko ga kutu no soko o [suri_{tran}-herasi_{tran}]_{tran}-ta
 Tomoko NOMshoe GEN sole ACC rub-reduce_{tran}-PST
 ‘Tomoko wore off the soles of the shoes.’

Example (9) illustrates that the compound pair occurs with the same transitive V1, while contrasting in transitivity in V2 position. Given that the transitivity of the compound as a

whole matches that of V2's and that the meaning of the two are parallel except for the number of participants of the event (compare involvement of NOM-marked argument in (10) but NOM-marked and ACC-marked arguments in (11)), it seems safe to conclude that the transitivity of V2 affects the number of the participants in this case.

Example (12) shows more examples.

(12)	a.	[ori _{tran} -kasanaru _{intran}] _{intan}	fold-pile up _{intran}	'overlap _{intran} '
	a_.	[ori _{tran} -kasaneru _{tran}] _{tran}	fold-pile up _{tran}	'overlap _{tran} '
	b.	[moti _{tran} -agaru _{intran}] _{intan}	hold-rise	'lift _{intran} '
	b_.	[moti _{tran} -ageru _{tran}] _{tran}	hold-raise	'lift _{tran} '
	c.	[ate _{tran} -hamaru _{intran}] _{intan}	hit-fit _{intran}	'apply to'
	c_.	[ate _{tran} -hameru _{tran}] _{tran}	hit-fit _{tran}	'apply'
	d.	[kaki _{tran} -kieru _{intran}] _{intan}	scratch-disappear _{intran}	'disappear'
	d_.	[kaki _{tran} -kesu _{tran}] _{tran}	scratch-make disappear _{tran}	'make disappear'
	e.	[oti _{intran} -tuku _{intran}] _{intan}	fall-attach _{intran}	'calm down'
	e_.	[oti _{intran} -tuku _{tran}] _{tran}	fall-attach _{tran}	'calm down oneself'

Notice that the semantic involvement of V1 can vary. In the first two pairs in (12), the meaning of V1 is more or less transparent. The (a/a_) examples denote an event of piling up where V1 provides a sense of layering. The (b/b_) examples denote a lifting event and V1 specifies that one lifts an object while holding it. On the other hand, what specific contribution V1 makes is vague in the (c/c_) and (d/d_) examples. A completely unanalyzable case is the examples of (e/e_). The compound as a whole has a lexicalized meaning, and the pair simply presents a transitivity opposition for the given meaning.

Thus, in these examples, irrespective of the transparency of the meaning of the component verbs, the intransitive-transitive distinction in V2 position determines the transitivity of the compound, altering the number of the participants of the events. The eventhood of the two compounds is precisely parallel except for the number of the

participants.

3.2.3.2. Change in meaning

The second motivation for the intransitive-transitive choice is the change of meaning. This can be further subdivided into two cases.

The first case is where each compound (as a whole) takes on a distinct meaning.

Consider (13).

- (13) a. [nomi_{tran}-tubureru_{intran}]_{intan} drink-be.crushed_{intran}
 ‘become dead drunk’
- a_. [nomi_{tran}-tubusu_{tran}]_{tran} drink-crush_{tran}
 ‘drink away one’s fortune’
- b. [huri_{intran}-komu_{intran}]_{intan} fall-be.enter_{intran}
 ‘(rain) comes into (the house)’
- b_. [huri_{intran}-komeru_{tran}]_{tran} fall-let.enter_{tran}
 ‘be confined to one’s room due to rain’

The first point to note is the distribution of the transitivity. The pattern is exactly the same as the previous case (in (12)); each pair occurs with the same V1, while contrasting in transitivity at V2, and the transitivity of the compound as a whole matches V2’s transitivity. The crucial difference from the previous case is that these examples in (13) involve a change of meaning. Although (a) and (a_) examples are related to drinking, and (b) and (b_) are related to raining, the literal meaning of V2 is completely integrated in a unique way to the compound as a whole, which produces two compounds with distinct meanings (see the English translation in (13)).

The second case is where one of the V2s takes on a distinct meaning from the original sense as an independent word, which brings about a difference in meaning.

Consider (14) and (15).

- (14) a. [ne_{intran}-sugiru_{intran}]_{intran} sleep-pass ‘sleep too much’
- (15) a. [ne_{intran}-sugosu_{tran}]_{intran} sleep-let pass ‘oversleep’
 b. [nori_{intran}-sugosu_{tran}]_{intran} ride-let pass ‘miss a train’
 c. [yari_{tran}-sugosu_{tran}]_{tran} do-let pass ‘let something go past’
 d. [kiki_{tran}-sugosu_{tran}]_{tran} listen-let pass ‘take no notice of what others say’

The compound with *-sugiru_{intran}* (e.g., 14a) is highly productive and the meaning of the V2 is transparent; specifically, it expresses *excessiveness* (see Chapter 5). On the other hand, the occurrence of the compound with its transitive counterpart *-sugosu_{tran}* (e.g., 15a) is quite limited, and the meaning of *sugosu* is unanalyzable, although the examples in (15) all seem to bear the sense related to ‘passing’. Thus, the divergence of meanings in a pair such as (14a) and (15a) seems to be caused by one of the member’s taking on a grammaticalized meaning.

Additionally, it seems possible to have a combination where each V2 takes on a specialized meaning, which results in a pair with a distinct meaning. However, this type of minimal pair was not found, although (16) shows an example from a non-minimal pair.

- (16) a. [sizumari_{intran}-kaeru_{intran}]_{intran} become quiet-return_{intran} ‘become quiet completely’
 b. [hohoemi_{intran}-kaesu_{tran}]_{intran} smile-return_{tran} ‘smile back at someone’

Kaer- and *kaes-* means to ‘return’ as an independent verb. In (16), V2s contrast in transitivity and they respectively take on a specialized meaning: *completeness* in (a), and *reversed action* in (b).

Though the last possibility could not be confirmed, this section has exemplified the cases where the difference in transitivity in V2 position changes the meaning of the compound. In one type, each compound acquires an idiosyncratic meaning, whereas in the other, at least one of the V2s takes on a specialized meaning, thus yielding a difference in meaning.

3.2.3.3. No change in transitivity or denotation

There is also a case where the transitivity distinction neither changes the transitivity of the compound nor the (truth-conditional) meaning. A few examples are shown below. Note that the compounds consist of intransitive V1, and intransitive V2 in the (a) examples and intransitive V1 and transitive V2 in the (b) examples, but the transitivity of compound as a whole is intransitive for all the examples.

- (17) a. kekkan ga ude ni [uki_{intran}-de_{intran}]_{intran}-te-iru
vein NOM arm to float-exit-LINK-exist
'The veins stand out on her arm.'
- b. too ga ao-zora ni [uki_{intran}-dasi_{tran}]_{intran}-te-iru
tower NOM blue-sky to float-let.exit LINK-exist
'The tower stands out in the blue sky.'
- (18) a. yoru nemuru toki ni mo ame wa [huri_{intran}-tuzuke_{tran}]_{intran}-te-i-ta
night sleep when DAT FOC rain TOP fall-continue-LINK-exist-PST
'Even before I went to bed, it was continuing to rain.'
- b. ame wa moo mikka mo [huri_{intran}-tuzui_{intran}]_{intran}-te-i-ta
rain TOP already three-CL FOC fall-continue-LINK-exist-PST
'It had been raining three days already.' (Text: Murakami)
- (19) a. soto wa yooyaku [kure_{intran}-kakat_{intran}]_{intran}-te-i-ta
outside TOP at.last get.dark-be.hooked-LINK-exist-PST
'Outside was finally starting to get dark.' (Text: Matumoto)
- b. moo hi wa [kure_{intran}-kake_{tran}]_{intran} . . .
already the.sun TOP get.dark-hook (and)
'It is starting to get dark already (and)...' (Text: Murakami)

In (17), the two examples are on a par with respect to their eventuality because they both involve a single inanimate entity, while depicting a state of standing out. Speculatively, dimensionality differs between the two: the intransitive form depicts a two-dimensional scene where saliency is expressed in terms of color (the purple veins standing out on the

background of her fair skin), while the transitive form portrays a three-dimensional scene where the tower stands out on the background of the blue sky.

The example in (18) differs from the example in (17) in that the transitive form is extremely productive (see Chapter 6), whereas the intransitive form *-tuzuk_{intran}* can occur only with a few intransitive V1s. However, the eventuality expressed by the sentences in (18) is quite parallel in that they both depict a scene where it continued to rain. The difference cannot be agency since the sole argument in both cases is inanimate which cannot bring about the transfer of an action.

In (19) as well, the compounds depict quite a parallel scene, both expressing an event of *almost getting dark*. Himeno (1979) makes note of two differences between *-kakar* and *-kake*. First, virtually all of the verbs that occur with the intransitive form *-kakar_{intran}* can be replaced by the transitive form *-kake_{tran}* but not vice versa. For example, *kie_{intran}-kakar_{intran}* ‘disappear almost’ can be restated as *kie_{intran}-kakeru_{tran}* ‘disappear almost’. However, *tukuri_{tran}-kakeru_{tran}* ‘make almost’ cannot be restated as **tukuri_{tran}-kakar_{intran}*. Second, the intransitive *-kakar_{intran}* tends to occur with ‘instantaneous’ intransitive verbs (i.e., achievement), which typically requires a non-agent subject. For example, in *kie-kakar_{intran}* ‘almost disappear’, *kie-* ‘disappear’ takes a non-agent subject. On the other hand, the intransitive form does not tend to occur with ‘continuation verbs’ (i.e., activities and causative classes) as it is indicated by the impossibility of **tukuri-kakar_{intran}*. Though there exist such differences in terms of compounding ability with V1, it is not clear what differences exist on eventuality between the two examples in (19). The specific functions of intransitive-transitive distinction assumed in V2 position in the examples (17) through (19) must be studied in

the future.

3.2.4. Examination of transitivity parity

This section examines Jacobsen’s (1992) observation on ‘transitivity parity’ (see section 3.2.2) on the basis of frequency counts. My method of calculation is as follows. First, compound verbs that contained either the intransitive or the transitive verb in an intransitive-transitive pair in V2 position (shown in Appendix A) were selected from the compound verbs gathered from the texts cited in text references (total of 2,490 types of compound verbs). Then, transitivity for each component and the compound as a whole was recorded based on the criteria of the case marking properties discussed in section 3.2.1. For example, *kiri-toru* cut-take ‘cut off’ is recorded as [transitive-transitive]_{transitive} (i.e., a transitive V1 and a transitive V2 are combined to form a transitive compound). The verbs which have both intransitive and transitive use (e.g., *tozi-* ‘close_{intran}’ / ‘close_{tran}’) were removed from the entries because which transitivity is employed in a particular compound is unidentifiable. This has left us with the total of 1,464 entries, for which the distribution of transitivity was examined. Table 3.2 shows the results.

Table 3.2: Pattern of transitivity

Relation	Parallel		Distinct		Follows from V1		Follows from V2		Total
Pattern	A	B	C	D	E	F	G	H	
[V1-V2]	[I-I] _I	[T-T] _T	[I-I] _T	[T-T] _I	[I-T] _I	[T-I] _T	[I-T] _T	[T-I] _I	
Type	355	678	0	4	166	156	10	95	1,464
Ratio to the total	24.2%	46.3%	0%	0.3%	11.3%	10.7%	0.7%	6.5%	100%
Total % per relation	70.5%		0.3%		22.0%		7.2%		100%

Note: ‘I’ stands for Intransitive and ‘T’ stands for Transitive.

The second row shows that there are eight logical possibilities of transitivity (labeled as A through H) to combine an intransitive verb and a transitive verb into a compound verb. The third row presents the composition of transitivity. For example, Pattern A, [I-I]_I, represents instances when the components, V1 and V2, are both intransitive, and the compound as a whole is also intransitive; Pattern E, [I-T]_I, represents that V1 is intransitive and V2 is transitive whereas the compound as a whole is intransitive. The first row interprets the relation of transitivity. In the A and B patterns, the transitivity of the compound matches that of each component verb and is therefore labeled as *parallel*. In the C and D patterns, the transitivity of the compound differs from that of the respective component verbs and is therefore labeled as *distinct*. In the E and F patterns, transitivity follows from V1 and is therefore labeled as *follows from V1*. Lastly, in the G and H patterns, transitivity follows from V2, and is hence labeled as *follows from V2*. The numbers in the fourth row (type) show the actual number of types of compounds. The fifth row shows the ratio of occurrence of that particular pattern to the total (1,464 entries). The number in the last row shows the sub-total of the percentage of the particular relation.

The percentage in the fifth row indicates the following. First, the most prevalent pattern of combination to form a compound is Pattern B (46.3%), in which a transitive V1 is compounded with a transitive V2, resulting in a transitive compound. Though much lower in percentage, Pattern A (an intransitive V1 is compounded with an intransitive V2, forming an intransitive compound) constitutes almost a quarter of the total combination (24.2%). Secondly, there exist no instances of Pattern C (i.e., an intransitive V1 with an intransitive V2 resulting in a transitive compound), whereas the

reverse pattern, Pattern D, in fact, exists (i.e., a transitive V1 combined with a transitive V2, resulting in an intransitive compound), though limited in occurrence (0.3%). Thirdly, when the transitivity of the two component verbs is distinct, there are more cases in which the transitivity of the compound as a whole follows from that of V1 than that of V2. This contrast can be seen in comparing patterns E (11.3%) and G (0.7%), and between patterns F (10.7%) and H (6.5%).

The figures in the last row indicate that (i) 70.5% of the compounds in the data appear in parallel patterns in which there is a correspondence in transitivity between the component verbs and the compound; (ii) a very limited number of compounds (0.3%) appear in distinct patterns where the transitive component verbs form an intransitive compound verb; and (iii) when transitivity follows from only one of the component verbs, there are more verbs that follow from V1 (22.0%) than from V2 (7.2%).

Examples of each pattern are shown in (20).

(20) A ([I-I] _I):	[kake _{intran} -modoru _{intran}] _{intan} [umare _{intran} -kawaru _{intran}] _{intan}	run-return be born-be changed	‘run back’ ‘be reborn’
B ([T-T] _T):	[haki _{tran} -atumeru _{tran}] _{tran} [tumami _{tran} -ageru _{tran}] _{tran}	sweep-gather pick-raise	‘gather by sweeping’ ‘pick up’
D ([T-T] _I):	[hami _{tran} -dasu _{tran}] _{intran} [osi _{tran} -kakeru _{tran}] _{intran} [kiri _{tran} -kakeru _{tran}] _{intran} [toki _{tran} -okosu _{tran}] _{intran}	eat-let exit push-hook cut-hook explain-let happen	‘go over’ ‘throng to a place/ call on uninvited’ ‘attack with a sword’ ‘(lecture) be started’
E ([I-T] _I):	[saki _{intran} -hazimeru _{tran}] _{intran} [hie _{intran} -kiru _{tran}] _{intran}	bloom-begin become cold-cut	‘begin to bloom’ ‘become cold completely’
F ([T-I] _T):	[tokasi _{tran} -komu _{intran}] _{tran} [mi _{tran} -mawaru _{intran}] _{tran}	melt _{tran} -be crowded look-go around	‘let enter by melting’ ‘patrol’

G ([I-T] _T):	[oti _{intran} -tukeru _{tran}] _{tran} [nori _{intran} -dasu _{tran}] _{tran}	fall-attach ride-let out	‘calm one’s mind’ ‘lean forward’
H ([T-I] _I):	[kaki _{tran} -kieru _{intran}] _{intran} [kesi _{tran} -tobu _{intran}] _{intran}	scratch-disappear extinguish-fly	‘disappear’ ‘vanish’

Pattern D ([T-T]_I) is an interesting case where two-argument components are combined to form a single-argument predicate. Jacobsen (1992) has already noted that these kinds of mismatched compounds exist. He gives two examples, *tume-kakeru* fill-hook ‘throng to a place’ and *osi-kakeru* push-hook ‘call on uninvited’. In the first compound, however, *tume-* has an intransitive use, meaning to ‘approach’ and to ‘be stationed’. Thus, this compound turns out not to exhibit Pattern D. The second example indeed seems to belong to Pattern D: in [osi_{tran}-kakeru_{tran}]_{intran} push-hook ‘throng to a place/call on uninvited’, two components are transitive but the entire compound is intransitive.

In brief, the results presented in Table 3.2 corroborate Jacobsen’s (1992) observation on transitivity parity that component verbs tend to have a matched transitivity. The pairs that are parallel in transitivity are much more numerous (A+B+C+D= 70.8%) than pairs that are not parallel (E+F+G+H=29.2%).

3.3. Frequency counts

This section discusses a verb’s ability to compound with another verb based on frequency counts. Yamamoto (1983) and Morita (1990) independently examined how many distinct verbs a verb can be compounded with based on the compound verbs found in texts. For example, a V2 verb *-nagas* ‘let flow’ may have occurred with five different V1s (e.g., *araw-* ‘wash’, *os-* ‘push’, *kik-* ‘hear’, *tare-* ‘drip’, and *yom-* ‘read’) in a given

set of data. Yamamoto (1983) culled roughly 2,000 compound verbs from texts (nine novels and essays), whereas Morita (1990) gathered 2,644 compound verbs (the sources are not specified). Himeno (1999) reports a result of frequency counts for V2s on the basis of the data presented in Nomura and Ishii (1987), who gathered approximately 7,500 compound verbs from various sources.

Following Yamamoto's (1983) approach, I gathered 2,490 types of compound verbs from texts cited in the text reference (different from Yamamoto's), and counted the number of verbs with which a given verb occurred.¹² The following two sub-sections show the results of the frequency counts.

3.3.1. V2s of high counts

Table 3.3 shows the V2s of high counts. The cut-off line for listing verbs was arbitrarily set at 15 verbs. The figures on the right most column indicates the number of V1s that are compounded with the V2, and the figures in parentheses indicate the ranking.

¹² Yamamoto (1983) does not separate the count for distinct senses. For example, *-kakar* can express a direction of action (e.g., *motare-kakaru* lean-hook 'lean over something'), or phase (e.g., *kure-kakaru* become.dark-hook 'get dark almost'). To make it comparable with Yamamoto's data, the distinct senses of a verb were not separated.

Table 3.3: The V2s of high counts on the ability to compound

	-V2	Transitivity		Meaning as a full verb	Meaning as V2	Number of V1s (ranking)
		Tr.	Intr.			
1	-hazime	*		begin	begin	156 (1)
2	-kom		*	crowded	enter, hard	134 (2)
3	-das	*	(#20)	let exit	begin, let out	127 (3)
4	-tuzuke	*		continue	continue	106 (4)
5	-aw	(#17)	*	fit	reciprocally, distributively	87 (5)
6	-kake	*	(#22)	hook	be about to, direction	76 (6)
7	-age	*	(#13)	raise	move upward, completely	76 (6)
8	-tuke	*	(#14)	attach	hard, toward, fix	60 (8)
9	-kir	*	(#29)	cut	completely	47 (9)
10	-sugi		*	exceed	excessively	46 (10)
11	-tate	*	(#30)	let stand	hard	38 (11)
12	-naos	*		fix	do something again	36 (12)
13	-agar	(#7)	*	rise	upward, completely	35 (13)
14	-tuk	(#8)	*	attached	stay, fix	35 (13)
15	-kaes	*	(#21)	return	do the action again	34 (15)
16	-tor	*		take	take, remove	33 (16)
17	-awase	*	(#5)	merge	put together	32 (17)
18	-makur	*		roll up	keep doing on and on	29 (18)
19	-ir	(#25)	*	enter	enter, hard	25 (19)
20	-de	(#3)	*	exit	come out	24 (20)
21	-kaer	(#15)	*	return	hard	23 (21)
22	-kakar	(#6)	*	hook	be about to, direction	22 (22)
23	-mawas	*	(#24)	turn	do something all over the place	22 (22)
24	-mawar	(#23)	*	go round	do something all over the place	20 (24)
25	-ire	*	(#19)	let enter	let enter	19 (25)
26	-nuk	*		take out	let through, completely	19 (25)
27	-otos	*		drop	let off, fail to do something	19 (25)
28	-kane	*		serve as	unable, unwilling, reluctant to	17 (28)
29	-kire	(#9)	*	be cut	be able to do something fully	16 (29)
30	-tat	(#11)	*	stand	hard	16 (29)
31	-sar		*	leave	leave	15 (31)

Note: The transitivity of V2 is indicated by the asterisk mark ‘*’. The ‘#’ mark indicates that the verb has a morphologically related form, which is listed under the number next to the ‘#’ mark (e.g., No. 3 *-das* is transitive, which has an intransitive pair in No. 20 *-de*).

Four observations can be made concerning the V2s in Table 3.3. First, there exist ten morphologically related intransitive-transitive pairs among them. This means that approximately 65% (10x2/31) of the verbs with high frequency counts appear in

intransitive-transitive pairs. The counts for transitive V2s tend to be higher than their intransitive counterparts. For example, the transitive *-kake* ‘be about to/suspend’ is compounded with 76 verbs, whereas the intransitive counterpart, *-kakar* ‘be about to/suspend’ is compounded with 22 verbs; likewise, the transitive *-age* ‘raise’ is compounded with 76 verbs, whereas the intransitive *-agar* ‘rise’ appeared with 35 verbs. The pairs that exhibit the counter pattern (with intransitive counts higher than transitive counts) are *-aw* (intran.) ‘fit’ (87) vs. *-awase* (tran.) ‘merge’ (32), and *-ir* (intran.) ‘enter’ (25) vs. *-ire* (tran.) ‘let enter’ (19).

Secondly, many of the V2s in Table 3.3 express a compound-specific meaning, which is distinct from their main sense as independent verbs. There seems to be no single unified category that can characterize these verbs. The common semantic categories are (a) aspect-related (e.g., *-kake* ‘hook (be about to),’ *-naos* ‘fix (re-do),’ *-makur* ‘roll up (do something repeatedly, on and on),’ (b) motion and/or direction (e.g., *-kom* ‘crowded (enter),’ *-age* ‘raise (mover forward),’ *-de* ‘exit (come out),’ and (c) degree or intensity (e.g., *-kir* ‘cut (completely),’ *-age* ‘raise (completely),’ *-tate* ‘let stand (hard)’).

Thirdly, there are two kinds of V2s in terms of ‘productivity’. Productivity can be roughly defined as the degree to which a verb can be employed in formation of a new compound verb. For a verb to be productive, it should be able to compound with another element in a regular and predictable way. The top two V2s, *-hazime* ‘begin’ and *-kom* ‘crowded’, in Table 3.3 make a sharp contrast: *-hazime* ‘begin’ can be characterized as productive, while *-kom* ‘crowded’ cannot. *-Hazime* ‘begin’ can occur with virtually any verb as long as the event is non-static. Moreover, when a verb has synonyms, *-hazime* is

not restricted to compound with a particular verb among the synonyms. For example, *okonaw-*, *yar-*, and *su-* all mean to ‘conduct/do’. *-Hazime* can occur with all three, maintaining a synonymous meaning (i.e., the meaning of the compound is obtained compositionally) as in *okonai-hazimeru*, *yari-hazimeru*, *si-hazimeru-*, all meaning ‘begin to do/conduct’. On the other hand, it is quite easy to find a word which cannot be compounded with *-kom* ‘crowded’ (e.g., **tabe-kom* eat-crowded, **mituke-kom* find-crowded, **hagasi-kom* peel-crowded). Furthermore, if a verb has synonyms, which verb *-komu* can be combined with among them is restricted. For example, *-komu* can occur with *si-* (*si-komu* ‘train’) but not with its synonyms, *yar-* (**yari-komu*) or *okonaw-* (**okonai-komu* ‘conduct/do’). Note also that the sense of ‘do’ is lost in the compound *si-komu* ‘train’, which shows that the meaning is no longer transparent in the compound. In this regard, the V2s that can be considered productive among the top ten are: *-hazime* ‘begin’, *-das* ‘begin’, *-tuzuke* ‘continue’, *-aw* ‘fit (reciprocal)’, *-kake* ‘hook (be about to)’, and *-sugi* ‘excessively’.

Fourth, a comparison of the ranking with previous studies indicates that the results presented in Table 3.3 are fairly similar to the ranking presented in Yamamoto (1983) and Himeno (1999). Morita’s (1990) ranking differs somewhat from the others. It is probably the case that Morita’s data only come from a dictionary, which tends not to list compound verbs whose meaning can be predicted from the meaning of the components. Nine verbs of the top ten V2s in Table 3.3 overlap with nine of Yamamoto’s top ten (*-hazime* ‘begin’; *-kom* ‘be crowded’; *-das* ‘let exit’; *-aw* ‘meet’; *-tuzuke* ‘continue’; *-age* ‘raise’; *-kake* ‘hook’; *-kir* ‘cut’; and *-tuke* ‘attach’ [-*sugi* ‘excessively’ ranks eleventh in Yamamoto, and Yamamoto’s tenth is *-tuk* ‘be attached’]).

Similarly, nine verbs of the top ten V2s in Table 3.3 overlap with nine of Himeno's top ten (*-das* 'let exit'; *-hazime* 'begin'; *-aw* 'meet'; *-kake* 'hook'; *-kom* 'be crowded'; *-kir* 'cut'; *-sugi* 'excessively'; *-tudoku* 'continue'; and *-tuke* 'attach' [*-age* 'raise' ranks eleventh in Himeno]). One major difference from Himeno's results is that *-e* (*~-u*) 'obtain' ranks first in Himeno's study whereas it had only six instances in my count. *-E* is used in a stylistically very formal context (see Chapter 5 for the discussion of this morpheme). The texts I consulted were not written in a markedly formal style, whereas Himeno's data seem to come from a wider range of sources including newspapers and research papers, and accordingly, the discrepancy of the results seems to be due to the differences in sources.

3.3.2. V1s of high counts

In an analogous fashion, the number of V2s which occurred with a V1 was counted, and Table 3.4 shows the results.

Table 3.4: The V1s of high counts on the ability to compound

	V1	Transitivity		Meaning as a full verb	Meaning as V1	Number of V2s (ranking)
		Tr.	Intr.			
1	tor-	*		take	take, emphasis	72 (1)
2	mi-	*		look	look	61 (2)
3	iw-	*		say	say	55 (3)
4	hik-	*		pull	pull, emphasis	50 (4)
5	ut-	*		hit	hit, emphasis	35 (5)
6	kak-	*		write	write	34 (6)
7	os-	*		push	push, emphasis	33 (7)
8	kir-	*		cut	cut	30 (8)
9	kik-	*		listen	listen	29 (9)
10	sas-	*		point	point, emphasis	28 (10)
11	tat-		*	stand up	stand, emphasis	28 (10)
12	hur-	*		shake	turn, shake	27 (12)
13	omow-	*		think	think	27 (12)
14	hum-	*		step on	step on	23 (14)
15	tob-		*	fly	fly	23 (14)
16	huk-	*		blow	blow	21 (16)
17	yom-	*		read	read	21 (16)
18	kuw-	*		eat	eat	21 (18)
19	nor-		*	ride	ride	19 (19)
20	tuk-	*		poke	poke	19 (19)
21	ow-	*		chase	chase	19 (19)
22	kak-	*		scratch	scratch, emphasis	18 (22)
23	kaw-	*		buy	beat, emphasis	16(23)
24	nak-		*	cry	cry	16 (23)
25	mot-	*		possess	possess	15 (25)

The results of the ranking are fairly similar to Morita's (1990). Nine verbs of the top ten V1s in Table 3.4 overlap with nine of Morita's top ten (*mi-* 'look'; *tor-* 'take'; *iw-* 'say'; *hik-* 'pull'; *ut-* 'hit'; *kir-* 'cut'; *kik-* 'listen'; *kak-* 'write'; and *os-* 'push' [*sas-* 'point' ranks thirteenth in Morita, and Morita's tenth is *tat-* 'stand']). Himeno (1999) does not discuss the V1s of high counts. Yamamoto (1983) provides just twelve verbs, eleven of which appear within the top 23 V1s in Table 3.4.

The V1s of high counts differ from the V2s of high counts in that: (i) the majority of the V1s are transitive (21/25=84%); (ii) no intransitive-transitive pairs appear as V1, and (iii) the majority of V1s are expressed in their original sense as an independent verb in the compound.

The verbs that appeared in both Table 3.3 and Table 3.4 were *kir-* ‘cut’ and *tat-* ‘stand’ and *tor-* ‘take’. *Kir-* ‘cut’ presents a typical picture of a Japanese compound verb. As a V1, the main sense ‘cut’ is employed as in *kiri-makuru* cut-turn.up ‘cut and cut’, while as a V2, it provides a special sense of completeness as in *kawaki-kiru* dry-cut ‘dry completely’. *Tat-* ‘stand’ is atypical in that it can provide modificational information in both positions: namely, as V1 it adds formality in register (e.g., *tati-iku* stand-go ‘go’), whereas as V2, it expresses intensity (e.g., *moe-tatu* burn-stand ‘burn hard’). *Tor-* ‘take’ is like *tat-* ‘stand’ at V1, expressing formality in register (e.g., *tori-kimeru* take-decide ‘decide’), while as V2, it denotes its original sense (e.g., *musiri-toru* pluck-take/remove ‘remove by plucking’).

On the whole, the results of frequency counts replicated the results of the previous studies by Yamamoto (1983) and Himeno (1999) for V2, and Morita (1990) for V1. Previously unmentioned is the fact that morphologically related verbal pairs are rather widespread among frequently occurring V2 verbs.

3.4. Summary

This chapter has examined compound verbs descriptively. First, how much of the original sense as a full-fledged verb was maintained in the compound was discussed in comparison with English *berry*-compounds. It was suggested that the degree to which a

verb maintains the original sense in the compound forms a continuum. Secondly, the transitivity of compound verbs was examined based on Jacobsen's (1992) observation regarding 'transitivity parity'. In my data, roughly 70% of the compounds (out of 1,464 compound verbs) match on transitivity between the component verbs and the compound as a whole. The rare pattern was two transitive verbs resulting in an intransitive compound, though the reverse pattern (two intransitive verbs resulting in a transitive compound) was not found. We also discussed the function of transitivity alternation at the V2 position. Two apparent reasons were to change the number of participants of the events and to change the meaning of the compound. As for the transitivity structure of compounds, there were three cases: (i) the original transitivity is maintained in both components (e.g., [kake_{intran}-modoru_{intran}]_{intan} run-return 'run back': [haki_{tran}-atumeru_{tran}]_{tran} sweep-gather 'gather by sweeping'); (ii) one component does not participate in constituting the valence of the compound verb as a whole (e.g., [hie_{intran}-kiru_{tran}]_{intran} become cold-cut 'become cold completely'; [kaki_{tran}-kieru_{intran}]_{intran} scratch-disappear 'disappear'); and (iii) the compound as a whole exhibits a distinct transitivity from the components' transitivity ([hami_{tran}-dasu_{tran}]_{intran} eat-let exit 'go over'). Lastly, we dealt with productivity of compounds based on frequency counts (see Table 3.3 and Table 3.4). The results were overall consistent with the results by Yamamoto (1983) and Himeno (1999) for V2s, and the results by Morita (1990) for V1s.

CHAPTER 4

Syntactic versus Lexical Compounds

How syntactic phenomena are distinguished from lexical phenomena differs from theory to theory. This chapter aims to lay out my theoretical assumptions with regard to this demarcation. Section 4.1 presents the criteria to distinguish lexical from syntactic phenomena in RRG. Section 4.2 reviews the diagnostic tests employed to distinguish lexical from syntactic compounds in Tagashira (1978) and Kageyama (1989, 1993) and Matsumoto (1992, 1996). Section 4.3 reviews subtypes of syntactic compounds in Kageyama (1993) and in Matsumoto (1992, 1996). Section 4.4 introduces the diagnostic tests I employ to examine the juncture-nexus types of compound verbs. And Section 4.5 presents a summary.

4.1. Lexical versus syntactic phenomena in RRG

In RRG, whether a phenomenon is lexical or syntactic is determined by examining the steps in linking syntax and semantics. Consider Figure 4.1 (Van Valin and LaPolla 1997, p. 318), which shows a schematic representation of linking between syntax and semantics.

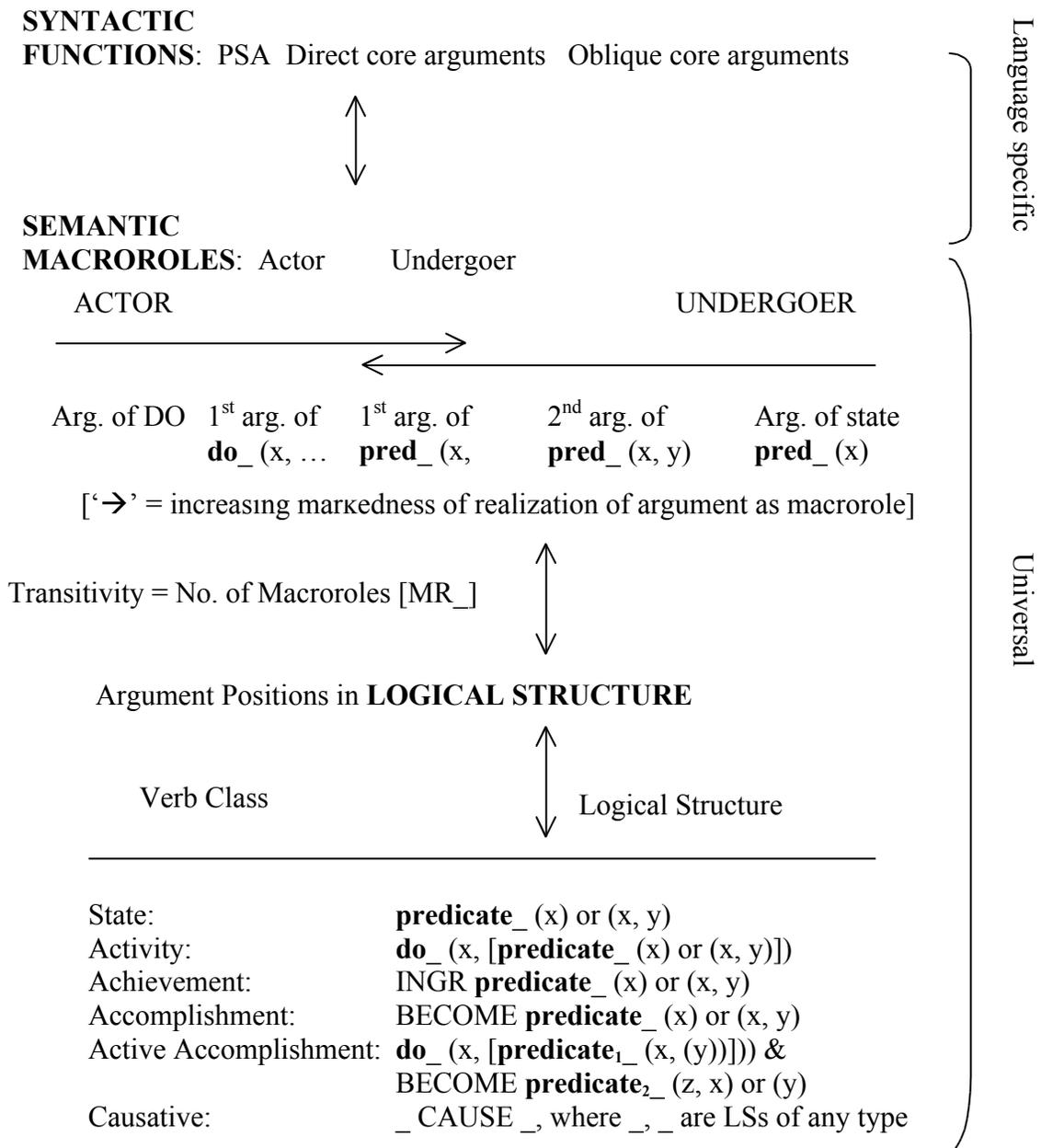


Figure 4.1: System linking semantic and syntactic representations

(Van Valin and LaPolla 1997:318)

The very first step in linking from semantics to syntax is to select a lexical entry of the predicate; for example, a causative accomplishment verb ‘break’ [**do_** (x, Ø)] **CAUSE**

[*BECOME broken* _ (*y*)]. Second, the variable slots in the logical structure are filled by the referring expressions as in [*do* _ (*John*, \emptyset)] CAUSE [*BECOME broken* _ (*wall*)]. Third, the macrorole status of the referring expressions is determined, following the Actor-Undergoer Hierarchy. In [*do* _ (*John*, \emptyset)] CAUSE [*BECOME broken* _ (*wall*)], *John* is selected as an actor because *John* is the first argument of *do* _ (...), and the *wall* is selected as an undergoer because the *wall* is the sole argument of the state predicate.

A lexical phenomenon in RRG affects any process up to this step. To be more specific, a lexical phenomenon includes (i) a process that alters the argument structure of the predicate (e.g., the process changes valency of the verb); (ii) a process that alters the Aktionsart class (e.g., from achievement to causative achievement); (iii) a process that alters the logical structure of the predicate (e.g., the process affects the meaning); and (iv) a process that changes the canonical assignment of the arguments of the logical structure to the actor or undergoer (e.g., an argument that is normally not an undergoer becomes an undergoer). An example of a lexical phenomenon is the alternation of an Aktionsart class in Lakhota. In Lakhota, a causative achievement class (e.g., *ka-t'a* ‘cause to die’) is obtained by adding an instrumental prefix (e.g., *ka-* ‘by striking’) to an achievement stem (*-t'a*) (Van Valin and LaPolla 1997: 181). Since an addition of the instrumental prefix changes the Aktionsart class, this shows an instance of a lexical phenomenon.

On the other hand, a syntactic phenomenon in RRG affects the linking of macroroles to the morphosyntactically coded arguments. A clear-cut instance of a syntactic phenomenon is (direct) passivization in English, because voice alternation affects the selection of the privileged syntactic argument, affecting the linking between macroroles and the morphosyntactically coded arguments. In addition to this

fundamental demarcation, RRG assumes a traditionally observed general tendency (cf. Wasow 1977). In syntax, combining predicates should result in combining the logical structures in a regular and in a predictable way. On the other hand, combining two elements lexically can result in idiosyncratic meanings.

Application of these criteria indicates that Japanese compound verbs consist of both lexical and syntactic compounds, as summarized in (1).

(1)

I. Lexical compounds

(A) V1 makes barely no semantic contribution to the compound as a whole

- | | | | |
|----|-------------|---------------------|---------------|
| a. | tati-sawagu | stand-make a fuss | ‘make a fuss’ |
| b. | tori-kimeru | take-decide | ‘decide’ |
| c. | kaki-kureru | scratch-become dark | ‘become dark’ |

(B) The semantic composition is unanalyzable or the meaning of the compound is not strictly compositional

- | | | | |
|----|---------------|-------------------|-------------------------------|
| a. | oti-tuku | fall-arrive | ‘calm down’ |
| b. | hiraki-naoru | open-be.corrected | ‘assume a defiant attitude’ |
| c. | mori-kaesu | heap.up-return | ‘regain one’s strength’ |
| d. | kiki-nagasu | listen-let.flow | ‘take no notice of’ |
| e. | tori-kobosu | take-spill | ‘lose an easy match’ |
| f. | saki-koboreru | bloom-spill | ‘bloom in profusion’ |
| g. | ake-watasu | clear-transfer | ‘evacuate a place, surrender’ |
| h. | kui-tubusu | eat-crush | ‘run through one’s fortune’ |
| i. | nori-tugu | ride-succeed | ‘connect to another vehicle’ |

(C) The compound contains a verb from pre-modern Japanese

- | | | | |
|----|--------------|-----------------------|-------------------|
| a. | nigari-kiru | (feel.disgusted)-cut | ‘look sour’ |
| b. | meri-komu | (decrease)-be crowded | ‘become hollow’ |
| c. | obiki-yoseru | (attract)-gather | ‘lure’ |
| d. | makari-tooru | (go)-pass | ‘pass unremarked’ |
| e. | hesi-oru | (press)-bend | ‘break off’ |

- (D) Both component verbs maintain the main sense of the verb as an independent verb in the compound. The case marking and transitivity of the compound is predictable from the component verbs. However, combinatory possibilities are unpredictable.

Means-result (transitive-transitive)

a.	osi-akeru	push-open	‘open something by pushing it’
b.	ori-mageru	fold-bend	‘bend something by folding it’
c.	haki-atumeru	sweep-gather	‘gather something by sweeping’
d.	sibori-dasu	squeeze-let.exit	‘squeeze out’
e.	naguri-korosu	hit-kill	‘kill someone by beating him up’

Means-result (intransitive-intransitive)

f.	turi-sagaru	hang-be.lowered	‘hang down’
g.	ukabi-agaru	float-rise	‘float up’
h.	kogoe-sinu	freeze-die	‘freeze to death’
i.	suberi-otiru	slide-fall	‘slide down’
j.	nagare-deru	flow-exit	‘flow out’

- (E) V1 maintains the main sense of the verb as an independent verb in the compound, whereas V2 employs a peripheral sense of the verb or a specialized meaning as an independent verb. The case marking and transitivity of the compound is predictable from the component verbs (Namely, V2 does not participate in determining the case marking or transitivity). The meaning of the entire compound is compositional in that V2 adds specification to the event denoted by V1. However, V2 adds a special meaning which is understood to affect the logical structures of V1.

Degree

a.	-kir	‘cut (completely)’
b.	-nuk	‘let.through (completely)’
c.	-kom	‘be.crowded (do things sufficiently)’
d.	-agar _{intran}	‘rise (completely)’
e.	-age _{tran}	‘raise (completely)’
f.	-hos	‘dry (completely)’
g.	-toos	‘let.through (completely)’
h.	-tukus	‘exhaust (completely)’

Intensity

i.	-tate	‘let.stand (vigorously/intensely)’
j.	-ir	‘enter (intensely)’
k.	-kaer _{intran}	‘return (intensely)’
l.	-mawa _{tran}	‘turn (intensely)’

Direction

m.	-mawa _{intran}	‘turn (around)’
n.	-tiras	‘scatter (do an action all over)’

o. -watar 'cross (throughout)'

Repeated action

p. -naos 'fix (redo)'

Distributed action

q. -aw 'fit/match (distributively)'

Reversed action

r. -kaes 'return (do things back)'

II. Syntactic

Phase

- a. -hazime 'begin'
- b. -das 'let.exit (begin)'
- c. -tuzuke 'continue'
- d. -kake/-kakar 'hook/be.hooked (be about to)'
- e. -owar 'finish_{intran/(tran)}'
- f. -owe 'finish_{tran}'

Degree

g. -makur 'roll up (repetitively)'

Psych action

h. -nare 'be accustomed to/be used to'

Excessiveness

i. -sugi 'excessive'

Modality related

- j. -kane 'serve both as (unable/unwilling/reluctant)'
- k. -e (~u) 'obtain (possible)'

Our next task is to examine the juncture-nexus types of syntactic compound verbs. In order to do so, I employ some of the diagnostic tests employed in previous studies, which are introduced in the following section.

4.2. Diagnostic tests employed in previous research

Tagashira (1978), Kageyama (1989, 1993), and Matsumoto (1992, 1996) have independently worked on compound verbs comprehensively, offering various insights. Tagashira (1978) seems to assume a version of Transformational Grammar, Kageyama works within the framework of P&P, and Matsumoto works within the framework of LFG. They all assume that Japanese compound verbs consist of syntactic and lexical compounds. They all employ diagnostic tests to distinguish between lexical from syntactic compound verbs. In what follows, we review their diagnostic tests.

4.2.1. Tagashira (1978)

Tagashira (1978) distinguishes lexical from syntactic compounds (in her terms, ‘compounds’ vs. ‘complex phrases’, respectively) on the basis of three phenomena, although she does not provide a theoretical rationale for selecting them. First, if the compound is syntactic, the passive morpheme *-(r)are* and the causative morpheme *-(s)ase* can appear between the two verbal morphemes, as shown in the (2b) and (2c) examples below.

- (2) a. *kaki-hazimeru* [syntactic]
write-begin
‘begin to write’
- b. *kak-are-hazimeru*
write-PASS-begin
‘begin to be written’
- c. *kak-ase-hazimeru*
write-CAUS-begin
‘begin to make write’

On the other hand, if the compound is lexical, the passive or causative morpheme cannot be sandwiched between the two morphemes as shown in (2e) and (2f).

- (2) d. suri-agaru [lexical]
 print-rise
 ‘be printed completely’
- e. * sur-are-agaru
 print-PASS-rise
- f. * sur-ase-agaru
 print-CAUS-rise

The second phenomenon is concerned with the stratum of words. Japanese words have been described as consisting of four strata (McCawley 1968): native words, onomatopoeic words, *Sino*-Japanese words, and loan words from non-*Sino* languages. Tagashira (1978) argues that the distinction among word strata is one factor that determines the well-formedness of compounds. In other words, V2 in a syntactic compound such as *tuzuke*- ‘continue’ or *hazime*- ‘begin’ can be preceded readily by a non-native verb such as *soodan-si*- consultation-do ‘consult’ (*Sino*-Japanese) or *sabor*- ‘to sabotage’ (a loan word from French), as shown in (3).

- (3) a. soodan-si-hazimeru [syntactic]
 consultation-do-begin
 ‘begin to consult’
- b. sabori-hazimeru [syntactic]
 sabotage-begin
 ‘begin to sabotage’

On the other hand, V2s of a lexical compound are restricted to co-occur with a native V1 only, as shown in (4).

- (4) a. * soodan-si-agaru [lexical]
 consultation-do-rise
 (intended) ‘be consulted completely’

4.2.2. Kageyama (1993)¹³

Kageyama (1993) employs five diagnostic tests to determine whether a compound is syntactic, working within the framework of the Principles and Parameters approach. The first test is to examine the possibility of replacing V1 (of V1-V2) by *soo-suru* ‘do so’. This is based on the general assumption that a segment internal to a word is referentially opaque, and therefore, a part of a lexical compound alone cannot participate in anaphoric referencing. For example, a lexical nominal compound *hon-dana* bookshelf ‘a bookshelf’ or *yama-nobori* mountain-climbing ‘mountain-climbing’ cannot be referred to by **sore-tana* that-shelf or **soko-nobori* there-climbing (i.e., the entire compound must be referred to as *sore* ‘it’ or *soko* ‘there’). Analogously, the event denoted by the V1 of a lexical compound verb cannot be referred back to by *soo-suru* (so-do) ‘do so’; for example, *osi-akeru* (push-open) ‘open by pushing’ or *naki-sakebu* (cry-shout) ‘shout while crying’ cannot be restated as **soo si-akeru* (so do-open) ‘open by doing so’ or **soo si-sakebu* (so do-shout) ‘shout by doing so’. On the other hand, a syntactic compound allows this replacement, as shown in (7).

- (7)
- | | | | | |
|----|------------------------|----------------|---------------------|-------------|
| a. | <i>sirabe-oweru</i> | check-finish | ‘finish checking’ | [syntactic] |
| → | <i>soo si-oweru</i> | so do-finish | ‘finish doing so’ | |
| b. | <i>tabe-sugiru</i> | eat-exceed | ‘overeat’ | [syntactic] |
| → | <i>soo si-sugiru</i> | so do-exceed | ‘overdo so’ | |
| c. | <i>dasi-wasureru</i> | turn in-forget | ‘forget to turn in’ | [syntactic] |
| → | <i>soo si-wasureru</i> | so do-forget | ‘forget to do so’ | |

Kageyama’s second test is to examine whether a discontinuous honorific form *o-*verb-*ni nar* can intervene between V1 and V2. Japanese has a discontinuous honorific form *o-*verb *ni nar* (*o* ‘honorific prefix’; *ni* ‘DAT’; *nar-* ‘become’). It marks an

¹³ Kageyama (1989) employs three diagnostic tests: anaphora, honorifics, and passive. Since they

asymmetric social relation between the speaker and one of the referents in the clause, traditionally identified as ‘subject’ (Harada 1976). The sentences in (8) show the contrast between the unmarked verb *yom* ‘read’ and the honorific-marked counterpart (since the form in its entirety marks honorific, it will be glossed as *H*(onorific)-*verb HH*).

- (8) a. Tanaka sensee ga sono hon o yon-da
 Tanaka professor NOM that book ACC read-PST
 ‘Professor Tanaka read the book.’
- b. Tanaka sensee ga sono hon o o-yomi ni nat-ta
 Tanaka professor NOM that book ACC H-read H H-PST
 ‘Professor Tanaka read the book.’

Truth-conditionally, (8a) is identical to (8b), as the English translation indicates. While (8a) neutrally depicts the scene of the reading event, the honorific-marked sentence in (8b) implies that the speaker shows respect to *Professor Tanaka* given the speaker’s social relation to the professor. Kageyama assumes that the honorific form is a syntactic entity, and therefore a lexical compound should not allow it to be separated by the honorific marking, as it violates its lexical integrity. Syntactic compounds, on the other hand, should readily allow a syntactic entity to appear between V1 and V2. And this is borne out in (9) and (10). A lexical compound cannot be honorifisized as in (9), whereas a syntactic compound can as in (10).

- (9) a. kaki-komu write-be crowded ‘write in’ [lexical]
 → *o kaki ni nari-komu
- b. uke-toru receive-take ‘receive’ [lexical]
 → *o uke ni nari-toru
- c. naki-sakebu cry-shout ‘shout while crying’ [lexical]
 → *o naki ni nari-sakebu

overlap with those in Kageyama (1993), we focus on Kageyama (1993).

- (10) a. utai-hazimeru sing-begin ‘begin to sing’ [syntactic]
 → *o utai ni nari-hazimeru*
- b. syaberi-tuzukeru talk-continue ‘continue to talk’ [syntactic]
 → *o syaberi ni nari-tuzukeru*
- c. nori-sokoneru ride-damage ‘fail to catch (train)’ [syntactic]
 → *o nori ni nari-sokoneru*

The third test is to examine whether the passive morpheme *-(r)are* can occur between V1 and V2. The passive morpheme *-(r)are* cannot occur between V1 and V2 in lexical compounds but can in some syntactic compounds, as shown in the contrast in (11) and (12).

- (11) a. kaki-komu [lexical]
 write-be crowded
 ‘write in’
- a_ *kak-are-komu
 write-PASS-be crowded
- b. osi-akeru [lexical]
 push-open
 ‘open by pushing’
- b_ *os-are-akeru
 push-PASS-open
- (12) a. yobi-hazimeru [syntactic]
 call-begin
 ‘begin to call’
- a_ yob-are-hazimeru
 call-PASS-begin
 ‘begin to be called’

b. aisi-tuzukeru [syntactic]
love-continue
'continue to love'

b_. ais-are-tuzukeru
love-PASS-continue
'continue to be loved'

The fourth test is to examine whether the V2 can occur in reduplicated construction such as (13).

- (13) a. nomi ni non-da
 drink DAT drink-PST
 'I drank and drank.'
- b. naki ni nai-ta
 cry DAT cry-PST
 'I cried and cried.'

Some Japanese verbs can be reduplicated as shown in (13). Kageyama notes that the passive or causative morpheme can appear in this construction, as shown in (14), in which both the base verb and the reduplicated base must be passivized or causativized.

- (14) a. naguri ni naguru
 hit DAT hit
 'hit and hit.'
- b. nagur-are ni nagur-are-ru
 hit-PASS DAT hit-PASS-NPST
 'be hit and be hit'
- c. nagur-ase ni nagur-ase-ru
 hit-CAUS DAT hit-CAUS-NPST
 'make (him) hit and make (him) hit'

Since passivization and causativization is assumed to be a process in syntax, it follows that the reduplicated sequence is a syntactic entity. If a V1 can be reduplicated and V2 can still follow the reduplicated sequence, it shows that the compound formation takes

place in syntax, and otherwise in the lexicon. This is borne out in the contrast in (15) and (16)(from Kageyama (1993: 91)).

- (15) a. sagasi-aruku look for-walk ‘go around to look for something’[lexical]
 →* sagasi ni sagasi-aruku look for DAT look for-walk
- b. kati-nuku win-pull out ‘win all the games (till the end)’ [lexical]
 →* kati ni kati-nuku win DAT win-pull out
- (16) a. hasiri-komu run-be crowded ‘practice running a lot’ [syntactic]
 → hasiri ni hasiri-komu run DAT run-be crowded
 ‘practice running and running’
- b. kitae-nuku train-pull out ‘train well/completely’ [syntactic]
 → kitae ni kitae-nuku train DAT train-pull out ‘train and train’

(Note: *-nuku* ‘pull out’ in (15b) is analyzed as lexical, while the one in (16b) is analyzed as syntactic in Kageyama.)

These examples show that the lexical compounds in (15) disallow reduplication, while the syntactic compounds in (16) can be reduplicated.

The last test examines whether V1 itself can be complex. By complex is meant another kind of verbal compound, which consists of a non-native deverbal nominal and a verbalizer *suru* ‘do’ such as *tyoosa-suru* investigation-do ‘investigate’. (This test is equivalent to one of Tagashira’s (1978) diagnostic tests.) Example (17) shows that lexical compounds are unable to take a non-native V1, whereas (18) shows that the syntactic compounds can.

- (17) a. *settyaku-si-tukeru gluing-do-attach [lexical]
 (hari-tukeru stick-attach ‘stick’)
- b. *zyanpu-si-kosu jump-do-cross [lexical]
 (tobi-kosu jump-cross ‘skip over’)
- (18) a. mi-tuzukeru watch-continue
 ‘continue to watch’ [syntactic]
 a_. kenbutu-si-tuzukeru watching-do-continue

			‘continue to watch’	
b.	sirabe-tukusu	investigate-exert	‘investigate completely’	[syntactic]
b_.	tyoosa-si-tukusu	investigation-do-exert	‘investigate completely’	

4.2.3. Matsumoto (1992, 1996)

Working within the framework of LFG, Matsumoto (1992) employs four phenomena to examine the subtypes of syntactic compounds: (i) passivization (whether PATIENT can be successfully mapped onto SUBJ, following the Mapping Principles.), (ii) honorification, (iii) adjunct interpretation, and (iv) verbal anaphora. Matsumoto (1996) furthermore employs (v) desiderativization as an additional diagnostic test. Here, we briefly sketch out what kind of phenomena Matsumoto refers to, without going into a detailed distinction among the subtypes. Since passivization, honorification, and verbal anaphora with *soo suru* ‘do so’ coincide with Kageyama’s diagnostic tests, we turn to the remaining two tests, desiderativization and adjunct interpretation.

Desiderativization can be seen in the case marking of the undergoer argument of V1. In Japanese, the second argument of a predicate is typically marked by ACC in an active sentence. However, it has been noted that the second argument of stative verbs is marked by NOM (e.g., Kuno 1973), as in (19).

- (19) a. Zyon wa nihongo ga dekiru
 John TOP Japanese NOM do.able
 ‘John can understand Japanese.’
- b. watasi wa kuruma ga hosii
 I TOP car NOM want
 ‘I want a car.’

The desiderative construction consists of a verb plus the morpheme *-tai* ‘want to’, which attaches to the *renyookee* ‘linking form’ of the verb, as in *nomi-tai* ‘want to drink’.

Because *-tai* ‘want to’ follows the conjugation pattern of an adjective, the verb-*tai* sequence denotes a state. Interestingly, the undergoer of the predicate can be marked by either NOM or ACC as shown in (20).

- (20) banana ga(/o) tabe-tai!
 banana NOM (/ACC) eat-want
 ‘I want to eat a banana!’

The NOM-marking is disallowed with one group of syntactic compounds, as shown in (21).

- (21) Boku wa kono hon {*ga/o} yomi-owari-takat-ta (Type I)
 I Top this book Nom/Acc read-finish-want-Past
 ‘I wanted to finish reading this book.’ (Matsumoto 1996: 178 *sic*)

It is argued that the NOM-marking is unacceptable since the entire predicate consists of two words at f-structure, and therefore, *kono hon* ‘this book’ is an argument of *yom-* ‘read’ but not of the entire stative predicate. Though it is not specified in Matsumoto, lexical compounds (one word at a-, f- and c-structure) are assumed to allow this alternation between the NOM-marking and the ACC-marking, because they are single lexical words.

The next test, the adjunct interpretation, is to consider the interpretation when an adverbial phrase is employed with the compound. If the predicate consists of a lexical compound (one word at a-, f- and c-structure), it does not yield any ambiguity provided that it is one word at f-structure. If the compound consists of two words at f-structure, it can yield ambiguous readings. Consider the following example (22a) from Matsumoto (1996: 181).

- (22) a. Yuusyoku wa gozi to rokuzi no aida ni tabe-rare-hazime-ta
 supper TOP five and six GEN middle P eat-PASS-begin-PST
 ‘Supper was started between 5 and 6.’
 ‘The habit (situation) of eating supper between 5 and 6 began.’
- (cf.) b. Yuusyoku wa gozi to rokuzi no aida ni tabe-ta
 supper TOP five and six GEN middle P eat-PST
 ‘We ate dinner between five and six.’ (translation)
 = ‘We ate the dinner starting at five and finished at six.’
 or = ‘The commencement of dinner-eating was between five and six.’

According to Matsumoto, sentence (22a) is ambiguous between the two readings. This is because the phrase *gozi to rokuzi no aida ni* ‘between 5 and 6’ can modify either V1 (*tabe-* ‘eat’) or V2 (*hazime-* ‘begin’) given its biclausality at f-structure. On the other hand, such ambiguity should not arise with a lexical compound due to its full-fledged single word status, at both f- and a- structure.

Note that the interpretation of *go-zi to roku-zi no aida ni tabe-ru* ‘to eat between five and six’ itself is ambiguous, without ‘begin’ as indicated in (22b): in one reading, eating starts at five and ends at six, while in the other reading, it only indicates the commencement of eating, anytime between five and six. Although this particular example does not seem to demonstrate what Matsumoto intended to show, the diagnostic test itself is valid, since adjuncts are sensitive to the layered structured of the clause.

4.3. Subtypes

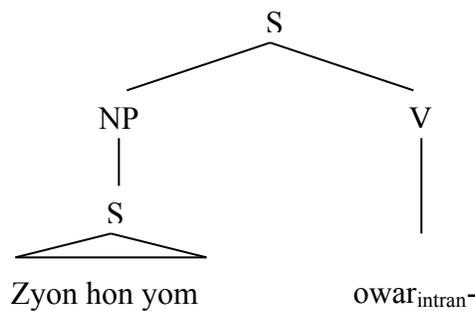
In this section, we discuss the subtypes of syntactic compounds in Kageyama (1993) and Matsumoto (1992, 1996) (Tagashira (1978) does not propose subtypes of syntactic compounds). Kageyama (1993) proposes two types of syntactic compound verbs, and he further subdivides one of them into two subtypes. Matsumoto (1992)

proposes to classify syntactic compound verbs into two types. Later, Matsumoto (1996) renames the grouping and proposes that non-lexical compound verbs consist of three types. Though the results of sorting compound verbs (i.e., which verb belongs to which type) may not precisely coincide with each other's, Kageyama's and Matsumoto's groupings are similar in that they are fundamentally grounded on Shibatani's biclausal analysis of aspectual compounds, which is summarized below.

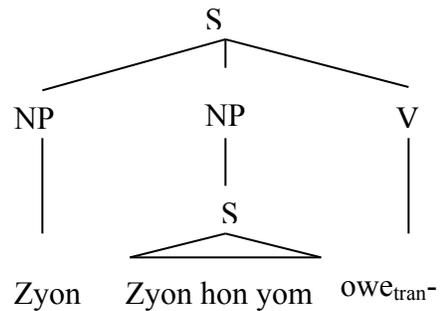
4.3.1. Shibatani (1973a)

Following the analysis of the English 'begin' by Perlmutter (1970) and Ross (1972), Shibatani (1973a) proposes that aspectual compound verbs in Japanese occur underlyingly in the intransitive and transitive structures, shown in (23) and (24) respectively (from Shibatani 1973a: 67).

(23) Intransitive Structure



(24) Transitive Structure



(25) a. Zyon ga hon o yomi-owat-ta
 John NOM book ACC read-finish-PST
 'John finished reading the book.'

b. Zyon ga hon o yomi-owe-ta
 John NOM book ACC read-finish-PST
 'John finished reading the book.'

The intransitive structure possesses a sentential subject, while the transitive structure possesses an independent NP as a subject, which is coreferential with the subject NP in the embedded clause. In the transitive structure, only an agentive subject can occur at the

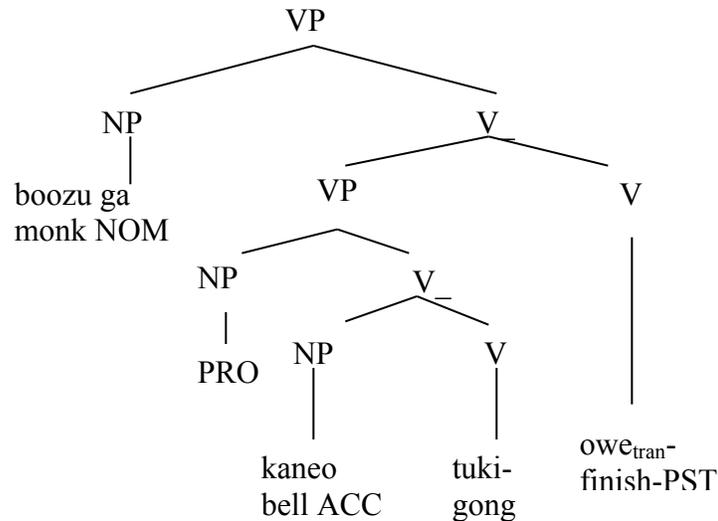
subject position, while the intransitive structure does not require agency of the subject's referent.

4.3.2. Kageyama (1993)

Kageyama (1993) attempts to capture the distinction between the intransitive vs. transitive structures in terms of raising vs. control constructions respectively, adopting the VP-Internal Subject analysis (Kitagawa 1986). According to Kageyama (1993), in the control construction, PRO is positioned in the lower [Spec, VP], which is coindexed with the NP at the higher [Spec, VP], as shown in (26₁), which is the representation of a simplified version of sentence (26) (adopted from Kageyama (1993:141)). He calls this structure the 'transitive-type complement structure'.

- (26) koboozu ga zyoyano kane o tuki-owe-ta
 small-monk NOM year-end bell ACC gong-finish-PST
 'The (boy) monk finished ringing the year-end bell.'

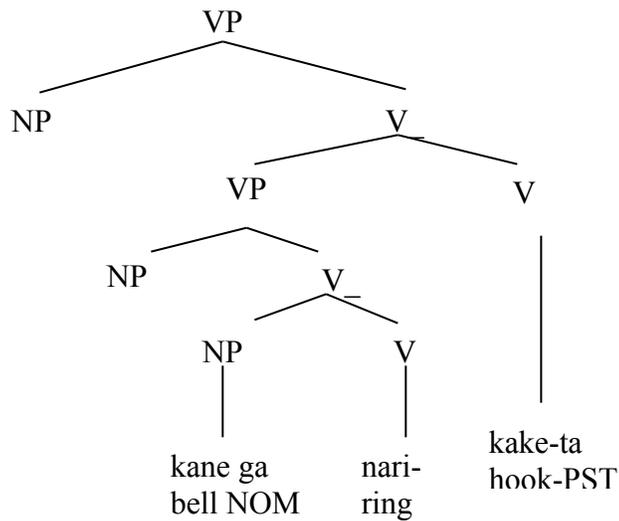
(26₁) Transitive-type complement structure



On the other hand, the raising construction requires no agentive subject, unlike the control construction. Consider sentence (27) and its representation in (27_).

- (27) kane ga nari-kake-ta
 bell NOM ring-hook-PST
 ‘The bell rang almost.’

(27_) Unaccusative-type complement structure



In (27), the V2 *-kake* ‘hook’ expresses an event that is about to take place. The higher [Spec, VP] is empty, because this matrix verb does not require an agentive subject. For Kageyama, *nar-* ‘ring’ is an unaccusative verb, and he calls this structure the ‘unaccusative-type complement structure’.

According to Kageyama, some V2 verbs can appear only in the transitive-type complement structure, or only in the unaccusative-type complement structure, while others can appear in both structures. Examples are shown in (28).

- (28) a. Transitive-type (control) : *-owe* ‘finish_{tran}’; *-tukus* ‘exert’; *-sobire* ‘miss’; *-sonzi* ‘fail’; *-sokonaw* ‘fail’; *-kane* ‘be reluctant’; *-okure* ‘be late’; *-wasure* ‘forget’; *-nokos* ‘leave’; *ayamar-* ‘mistake’; *-agune* ‘be at a loss’; *-toos* ‘let through’; *-naos* ‘redo’; *-tuke* ‘be accustomed to’; *-nare* ‘be used to’; *-aki* ‘get bored’; and *-aw* ‘distributively’
- b. Unaccusative-type (raising) : *-kake* ‘be about to’; *-das* ‘begin’; *-sugi* ‘miss’; *-e* ‘possible’
- c. Can occur in both structures : *-hazime* ‘begin’; *-owar* ‘finish_{intran}’; *-makur* ‘keep doing’; *-tuzuke* ‘continue’; *-kir* ‘cut’

Kageyama (1993) observes that the compounds of two types (i.e., (28a) and (28b)) behave differently when it occurs with the passive morpheme *-(r)are*. *-(R)are* can follow the transitive-type compound (V1-V2-*(r)are*), but not the unaccusative types of compounds (**V1-V2-(r)are*), as illustrated in (29).

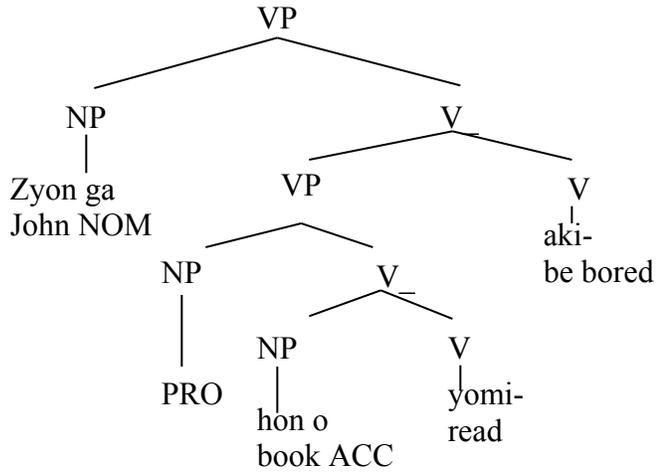
- (29) a. Transitive-type : V1-V2-*(r)are* is possible
(e.g., *kaki-owe-rareru* write-finish-PASS ‘be finished writing’;
nomi-wasure-rareru drink-forget- PASS ‘be forgotten to be taken’)
- b. Unaccusative-type : **V1-V2-(r)are*
(e.g., **kaki-kake-(r)areru* write-about.to-PASS ‘about to be written’;
**nomi-sugi-(r)areru* drink-exceed- PASS ‘be drunk excessively’)

Kageyama (1993) furthermore notes that *-(r)are* cannot follow a subset of transitive-type compounds, as shown in (30).

- (30) A subset of transitive-type: V1-V2-*(r)are* is impossible
- *kaki-aki-rare-ru* write-be bored-PASS-NPST
**kaki-kane-rare-ru* write-be reluctant- PASS-NPST

To account for the contrast in grammaticality among the transitive-type compounds, namely between (29a) and (30), Kageyama (1993) posits the following structural distinctions.

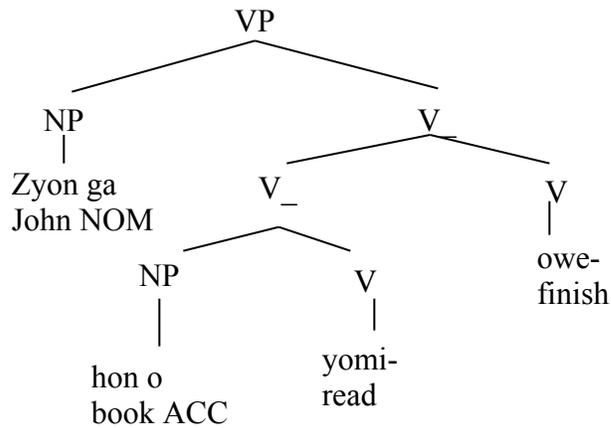
(31a) (*V1-V2-(r)are)



(31) b. Zyon ga hon o yomi-aki-ta
John NOM book ACC read-bored-PST
'John is tired of reading the book.'

c. *hon ga yomi-aki-rare-ta
book NOM read-be bored-PASS-PST

(32a) (V1-V2-(r)are)



(32) b. Zyon ga hon o yomi-owe-ta
John NOM book ACC read-finish-PST
'John finished reading the book.'

c. hon ga yomi-owe-rare-ta
book NOM read-finish-PASS-PST
'The book was finished to be read.'

The representation (31a) is the structure for transitive compounds that disallows passivization of the entire compound, in contrast to (32a), which allows the passivization. Note that the NP at the complement position to V is under a maximal projection in (31a), whereas it is under V₂ in (32a). Kageyama (1993) argues that the structure of (31a) disallows passivization since the higher V cannot assign a θ -role to the object of the internal V due to the existence of a maximal projection, whereas the structure in (32a) allows it since there is no VP which blocks θ -role assignment. This structural distinction is motivated by the semantic difference between the two. Kageyama observes that V2 verbs such as *akir*- ‘be bored’ in (31) do not make reference directly to the object NP but to the entire event of V1. On the other hand, V2 verbs such *owe*- ‘finish_{tran}’ in (32) places semantic restrictions on the interpretation of the object of V1, and hence he considers that not only V1 but also V2 assigns a θ -role to the object of V1. Though this violates the θ -criterion, which states that an NP must be assigned a single θ -role (Chomsky 1981), Kageyama stipulates that θ -roles can be assigned by multiple predicates if they function as a complex predicate. He is also aware that the two verbs may assign distinct θ -roles to the external argument position to VP. For example, in (33), V1 *das*- ‘send’ assigns it the θ -role of Agent to the external argument while V2 *-wasure* ‘forget’ assigns the θ -role of Experiencer.

(33) Zyon ga tegami o dasi-wasure-ta
 John NOM letter ACC send-forget-PST
 ‘John forgot to send the letter.’

In Kageyama’s interpretation, the θ -criterion is yet maintained because they are both assigning the θ -role which is for the external argument position.

In sum, Kageyama (1993) posits two main structural types of compounds, the

unaccusative type construction (raising) and the transitive-type construction (control), and the latter is further divided into two structural subtypes: the position adjacent to V2 is a VP headed by V1 in one, and V_ in the other.

4.3.3. Matsumoto (1996)

Matsumoto (1996) distinguishes lexical from syntactic compound verbs on the basis of complexity of woodhood at a-structure and f-structure. Lexical compound verbs are monoclausal at both a- and f-structure, whereas syntactic compounds are biclausal either at a-structure or at f-structure or at both a-structure and f-structure. He further classifies syntactic compounds into three types, which he calls Type I, Type II, and Type III. The distinctions of the three types are summarized in (34).

(34)

	<u>Type I</u>	<u>Type II</u>	<u>Type III</u>
a-structure	(e.g., ‘begin <EVENT>’)	(e.g., ‘initiate <AGENT, SUBEVENT>’)	(e.g., ‘be reluctant <EXPERIENCER, EVENT>’)
f-structure	biclausal	monoclausal	biclausal
Examples:	- <i>hazime</i> ‘begin’ (non-intentional) - <i>owar</i> _{intran} ‘finish’ - <i>sugi</i> ‘excessively’ - <i>kake</i> ‘be about to’ - <i>das</i> ‘begin’	- <i>hazime</i> ‘begin’ (intentional) - <i>owe</i> _{tran} ‘finish’ - <i>naosu</i> ‘redo’ - <i>makur</i> ‘repeat actively’ - <i>kir</i> ‘finish completely’ - <i>nuk</i> ‘finish completely’ - <i>wasure</i> ‘forget to do x’	- <i>kane</i> ‘reluctant’ - <i>sobire</i> ‘miss doing x’ - <i>sokonaw</i> ‘fail to do x’ - <i>toos</i> ‘do to the end’

F(unctional)-structure codes information on the grammatical functions of a sentence, while a(rgument)-structure specifies which thematic roles (e.g., AGENT, PATIENT) a predicate takes. In Type I compounds, the V2 takes EVENT only at a-structure (e.g., (non-intentional) *-hazime* ‘begin’) and it is biclausal at f-structure, taking a raising-type

bi-clausal f-structure. Type II corresponds to Shibatani's (1973a) transitive structure (e.g., (intentional) *-hazime* 'begin'). It is monoclausal at f-structure and the V2 takes an AGENT and SUBEVENT at a-structure. According to Matsumoto (1996:19), EVENT is 'semantically independent of the situation described by the upper structure' while SUBEVENT 'represent[s] one complex event' together with the event of the upper structure. In Type III, the compound is bi-clausal at f-structure, taking control (equi)-type structure. Unlike Type I, the V2 takes EXPERIENCER (or AGENT) and EVENT at a-structure. An example of Type III is *-kane* 'reluctant'.

Example (35) shows the compound verbs that are grouped as syntactic by Tagashira (1978), Kageyama (1993), and Matsumoto (1992, 1996). They include verbs that express aspect-related notions (a-f), failure (g), psych action (h-j), and excessiveness (k)).

(35)	a.	hanasi	-hazimeru	talk	-begin	'begin to talk'
	b.	tabe	-tuzukeru	eat	-continue	'continue to eat'
	c.	nomi	-oweru	drink	-finish _{tran.}	'finish drinking'
	d.	nomi	-owaru	drink	-finish _{intran.}	'finish drinking'
	e.	tore	-kakeru	come off	-hook	'be about to come off'
	f.	yari	-naosu	do	-fix	'redo'
	g.	iki	-sobireru	go	-miss chance to	'fail to go'
	h.	tukai	-nareru	use	-get used to	'be accustomed to use'
	i.	mi	-akiru	watch	-get bored	'be tired of watching it'
	j.	kaki	-wasureru	write	-forget	'forget to write'
	k.	ne	-suguru	sleep	-pass	'sleep too much'

4.3.4. Diagnostic tests not employed

Section 4.2 introduced several diagnostic tests employed in Tagashira (1978), Kageyama (1993) and Matsumoto (1992, 1996). I will employ some of their diagnostic tests to examine the juncture-nexus types of the compound verbs; namely, adjunct

sentence in (37d) predicts that the verb-*naos* is syntactic since it is impossible to restate (37c) with V2, which is contradictory to what was predicted by the possibility of restatement in (37b). I surmise that the possibility of restatement with V2 merely indicates that V2 happens to be able to occur independently with the arguments present in the sentence. For example, *musub-* ‘tie’ in (37a) can occur with an actor *Yooko* and an undergoer *himo* ‘string’, and *naos-* ‘fix’ happens to be able to occur with the two arguments independently as in (37b). However, this is not the case in (37d); namely, *naos-* ‘fix’ does not occur with a DAT-marked location, and being able to restate the sentence with V1 seems independent of whether a compound is lexical or syntactic.

4.3.4.2. Ability to compound with a *Sino*-Japanese verb

It is well known that some *Sino*-Japanese verbs allow an alternation involving ACC case *o*, such as (38a) and (38b).

- (38) a. Tomu ga nihongo o benkyoo-suru
 Tom NOM Japanese ACC studying-do
 ‘Tom will study Japanese.’
 a_. **do_** (Tomu, [**study_** (Tomu, nihongo)])
- b. Tomu ga nihongo no benkyoo o suru
 Tom NOM Japanese GEN studying ACC do
 ‘Tom will study Japanese.’
 b_. **do_** (Tomu, [**study_** (Tomu, nihongo)])
- c. benkyoo + suru → benkyoo-suru
 studying + do → studying-do

The situation denoted by (38a) and (38b) is equivalent as indicated in the identical logical structure of (38a_) and (38b_). The question is the direction of derivation. Is it the case that the [deverbal.nominal-*suru*] in (38a) is derived (i) from [deverbal.nominal *o suru*]

such as (38b), or (ii) by suffixing *suru* ‘do’ to the deverbal nominal lexically as in (38c)? Grimshaw and Mester (1988) postulate that the verb-*suru* ‘do’ in (38a) is a ‘light verb’ and that the transfer of $_$ -roles takes place from the deverbal nominal to the light verb. This seems to suggest that the direction of derivation is from [deverbal.nominal *o suru*](38b) to [deverbal.nominal-*suru*](38a). Kageyama (1993), who employs the phenomena of deverbal nominals as a diagnostic test to distinguish lexical from syntactic compounds seems to assume this is the right direction. If it is the case, it seems reasonable to view the -*suru*-suffixed deverbal nominal (38a) as a syntactic entity, because it is derived from a construction composed syntactically. It would then follow that if a V2 can follow the -*suru*-suffixed deverbal nominal *V1(deverbal.nominal-si)-V2*, the compound *V1-V2* must also be combined syntactically.

However, as noted in Miyagawa (1987, 1989), there exists a class of *Sino*-Japanese verbs that does not have the alternation involving *o* as shown in (39).

- | | | | | | |
|------|----|---------------|---------------|---------------------------|---------------------|
| (39) | a. | kaitoo-suru | ‘to defrost’ | →* <i>kaitoo o suru</i> | defrosting ACC do |
| | b. | tanzoo-suru | ‘to be born’ | →* <i>tanzoo o suru</i> | being.born ACC do |
| | c. | zyoohatu-suru | ‘to vaporize’ | →* <i>zyoohatu o suru</i> | vaporization ACC do |

If there is a complete set of deverbal nominals which do not have the *o*-marked form, it must be that [deverbal.nominal-*suru*] is derived lexically by suffixing *suru* ‘do’ to the deverbal nominal. If this class is derived lexically, it is more consistent to posit that the deverbal nominals which have the *o*-marked counterparts such as (38b) are also derived lexically from the deverbal nominal by suffixing *suru*. I assume that the entire class of [deverbal.nominal-*suru*] is derived lexically. Therefore, the ability to be combined with a *Sino*-Japanese deverbal nominal does not guarantee that [*deverbal.nominal-si*]-*V2* is syntactically formed.

4.3.4.3. *Soo suru* ‘do so’

Consider the relevant examples from Matsumoto (1996: 183) with some modifications.

- (40) a. Zyon wa hon o yomi-hazime-ta. Marii mo soo si-hazime-ta.
John TOP book ACC read-begin-PST Mary too so do-begin-PST
‘John began to read a book. Mary began to do so, too.’
- b. Zyon wa isi o moti-age-ta. *Marii mo soo si-age-ta.
John TOP stone ACC have-raise-PST Mary too so do-raise-PST
‘John held the stone up, and Mary did so, too.’

Since *soo suru* ‘do so’ constitutes a core in RRG term, and if there is evidence that V2 takes the entire core in its scope, it is likely that the V2 is syntactic. In this respect, this diagnostic test seems valid. However, one point that needs to be noted is that when *suru* occurs as an independent verb with *o*-marked NP, it functions as a full-fledged activity verb which requires an agent (i.e., in *soo suru* ‘do so’ it is an activity verb)(Toratani 1998). Then, it is possible that if a V2 is incompatible with an activity V1 or does not take an agent, the compound will fail the test. Take *-kir* ‘cut (completely)’, for example, which is treated as syntactic in both Matsumoto (1996) and Kageyama (1993). Example (41a) shows that the compound with *-kir* ‘cut(completely)’ fails the test, but the reason seems semantic; namely, it does not co-occur with a plain activity verb. Sentence (41b) is an example with a non-agent subject (see Chapter 7 for the discussion of this morpheme).

- (41) a. Zyon wa konwaku-si-kit-ta. *Marii mo soo si-kit-ta.
 John TOP being.at.a.loss-do-cut-PST Mary too so do-cut-PST
 ‘John became at a loss completely. Mary did so completely, too.’
- b. koori ga toke-kit-ta. *tyokoreeto mo soo si-kit-ta.
 ice NOM melt-cut-PST chocolate FOC so do-cut-PST
 ‘The ice melted completely. The chocolate did so completely too.’

Thus, the reason why a compound fails the test may be independent of whether the compound is formed lexically.

4.3.4.4. Case alternation in desiderative

There appears to have been no work done on the Japanese desiderative construction in RRG. However, there is some evidence to suggest that the alternation is motivated by an interaction with information structure (cf. Yanagida 1985), rather than by a syntactic distinction, because the distance of the NP in question from the verb affects the acceptability, as indicated in (42).

- (42) a. uti de san-zi ni banana ga(o) tabe-tai!
 home at three-o'clock at banana NOM (/ACC) eat-want
 ‘At home, I want to eat a banana at three o'clock!’
- b. banana o/?ga uti de san-zi ni tabe-tai!
 banana ACC/NOM home at three-o'clock at eat-want
 ‘At home, I want to eat a banana **at three o'clock!**’

It is assumed that the immediately preverbal position is the default focus position in Japanese (Kuno 1978, Kim 1988). In (42a), the narrow focus (see Van Valin LaPolla, 1997: 208-210) is on *banana*, as opposed to *san-zi* ‘three o'clock’ in (42b). In the former case, the nominative marking is allowed, whereas it is very awkward in the latter.

Further study is necessary to determine whether this case-marking alternation is relevant to a structural distinction, and therefore, I will not employ the possibility of case alternation in desiderative construction as a diagnostic test.

4.2.4.5. Honorific form *o__ni naru*

Recall that *o__ni naru* is a discontinuous honorific form (repeated as (43b)). It is argued (e.g., Kageyama 1993) that the compound is lexical if the entire compound can be marked by this form (compare (d) and (e)).

- (43) a. Tanaka sensee ga sono hon o yon-da
 Tanaka professor NOM that book ACC read-PST
 ‘Professor Tanaka read the book.’
- b. Tanaka sensee ga sono hon o o-yomi ni nat-ta
 Tanaka professor NOM that book ACC H-read H H-PST
 ‘Professor Tanaka read the book.’
- c. kaki-komu write-be crowded ‘write in’ [lexical]
- d. → *o kaki-komi ni naru* H-write-be.crowded-H-H ‘write in’
- e. → * *o kaki ni nari-komu* *H-write-H-H-be.crowded

In contrast to the previous account (e.g., Kageyama 1993), there appears to be no strong evidence to support the idea that honorificizing with *o__ni naru* is a syntactic phenomenon in RRG terms. Let us elaborate on this point. Consider (44) which shows the contrast of the LS for the plain verb as opposed to the honorific-marked form.

- (44) a. Tanaka sensee ga hon o yon-da
 Tanaka professor NOM book ACC read-PST
 ‘Professor Tanaka read a book.’
- a_ **do_** (Tanaka, [**read_** (Tanaka, hon)])

- b. Tanaka sensee ga hon o o-yomi ni nat-ta
 Tanaka professor NOM book ACC H-read H H-PST
 ‘Professor Tanaka read a book.’
- b_. **do’** (Tanaka, [**read**_ (Tanaka, hon)])

Notice that the logical structures in (44a_) and (44b_) are identical. This means that honorificizing is incapable of affecting the logical structure in any way. Notice also that the honorific-marked sentence in (44b) implies that the speaker respects *Professor Tanaka*, but the speaker *per se* is not an argument of the predicate *yom* ‘read’ and that the speaker cannot be realized as an argument within the sentence in any way, just as the speaker is not realized in (44a). Since honorificizing does not modulate the status of the privileged syntactic argument, the linking between syntax and semantics remains unaffected. Therefore, it is difficult to conclude that it is a syntactic phenomenon.

It is also worth pointing out that honorificizing with *o__ni nar* is subject to various restrictions. Kikuti (1994) notes several restrictions: First, a one-mora long word cannot occur as the base verb (**o-ki ni nar* H-dress HH). Second, if a lexicalized honorific form exists, it does not occur in the honorificizing form (*kure-* ‘give’ has an honorific form *kudasar-*, and the honorific-marked form **o-kure ni nar* is non-existent). Third, it cannot occur with a loan or onomatopoeic word (**o-doraibu-si ni nar* H-drive-do HH). Fourth, only a human or groups consisting of humans can be the subject of the construction (**ame ga o-huri ni naru* rain NOM H-fall HH). Fifth, words with a negative connotation or slang cannot occur (**o-boke ni naru* H-become.senile HH). Sixth, many ‘compound verbs’ sound awkward with the honorific, though it is not specifically explained what characteristics of the compounds make them sound awkward: **o-sagasi-dasi ni nar* look.for-let.exit ‘find out’, **o-yomi-susume ni nar* read-advance ‘go on reading’. Lastly, Kikuti states that V2s such as *-hazime* ‘begin’, *-tuzuke* ‘continue’, and -

owar/-owe ‘finish’ must follow *o*-verb *ni nar* (e.g., *kak-* ‘write’; *o-kaki ni nari-hazimeru*, *o-kaki ni nari-tuzukeru*) and the sandwiched forms (e.g., **o-kaki-hazime ni nar*, **o-kaki-tuzuke ni nar*) are awkward. Kikuti’s judgments are distinct from those of Kuno (1987), who allows both marking patterns. The judgments seem to vary among native speakers, which is perhaps due to the markedness of a doubly-marked predicate with phase and honorific, which seems rarely encountered in natural speech. In addition to the indeterminable status of honorificizing with *o__ni nar*, these restrictions make it inappropriate to employ honorificizing with *o__ni nar* as a diagnostic test.

This subsection discussed why I do not employ some of the diagnostic tests employed in Tagashira, Kageyama and Matsumoto. The following section turns to the diagnostic tests which I will employ as a diagnostic test to examine the juncture-nexus types; namely, adjunct interpretation, passivization and causativization.

4.4. Diagnostic tests

4.4.1. Interpretation of adjuncts

Adjuncts enter into a scope relation with a certain component of the layered structure of the clause. Interpretation of an adjunct can be used as a diagnostic test to examine what juncture level is involved in a construction: nuclear, core, or clause. An aspectual adverb (e.g., *kanzen-ni* ‘completely’) modifies the predicate in the nucleus. A temporal adjunct PP (e.g., *zyuu-zi ni* ‘at ten o’clock’) and a peripheral bare NP adverb (e.g., *kinoo* ‘yesterday’, *asita* ‘tomorrow’) modify cores. Epistemic (e.g., *osoraku* ‘probably’) and evidential adverbs (e.g., *akiraka-ni* ‘evidently’) are modifiers of a clause. Examples for each will be seen as the discussion progresses.

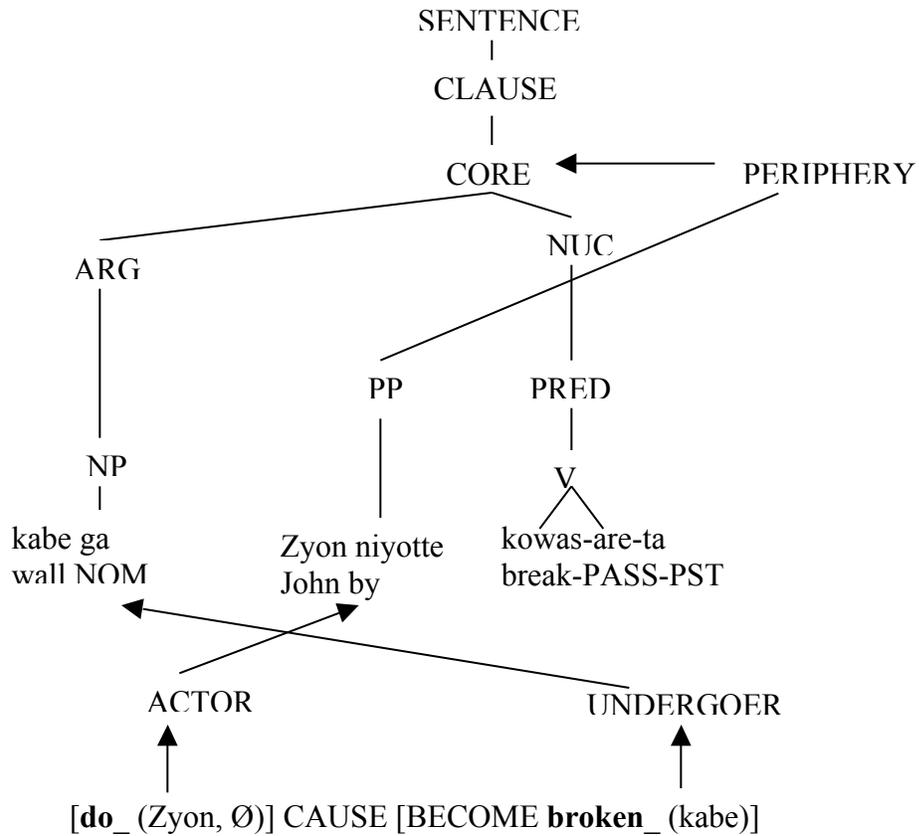
4.4.2. Passivization

4.4.2.1. Direct passive

In section 4.1, it was mentioned that the direct passive in English is a syntactic process. Like English, direct passivization in Japanese must be a syntactic process because it affects the linking of the macroroles to the NPs within the sentence. Example (45a) is the active voice sentence, (45b) is the direct passive sentence, and (45c) shows the representation for the passive linking.

- (45) a. Zyon ga kabe o kowasi-ta
 John NOM wall ACC break-PST
 ‘John broke the wall.’
 a’. [**do_** (Zyon, Ø)] CAUSE [BECOME **broken_** (kabe)]
- b. kabe ga Zyon niyotte kowas-are-ta
 wall NOM John by break-PASS-PST
 ‘The wall was broken by John.’
 b’. [**do_** (Zyon, Ø)] CAUSE [BECOME **broken_** (kabe)]

(45c)



The juncture level of the predicate to which *-(r)are* affixes ought to be a core, because direct passivization affects the linking of the arguments that belong to the base verb. Accordingly, in (45b), *kowas-are* break-PASS must take a core of its own. If any verbal element can follow it, then the additional suffix must be housed under a separate core from the core that houses verb-*(r)are*, or an operator that takes the entire sequence in its scope, because the passive morpheme is virtually inseparable from the base verb in that the passive morpheme can demonstrate its function only after it is combined with the base verb.

In brief, we can employ direct passivization as a diagnostic test to identify a core juncture.

4.4.2.2. Indirect passive

It is well known that Japanese has two kinds of passivization processes, direct and indirect. The indirect passive, also known as ‘adversative passive’, is used for expressing one’s affected state in reaction to a certain event. The semantic effect seems to be shared with English *on me* phrase in *The dog died on me*. Examples of Japanese indirect passive are shown in (46b) and (46f). The sentences in (46a-c) contain an intransitive base verb. The examples in (46d-g) contain a transitive base verb. Example (46a) is the active voice sentence with an intransitive verb *hur* ‘(rain) fall(s)’, and (46d) is the active voice sentence with a transitive verb *nagur-* ‘hit’.

- (46) a. ame ga hur_{intran}-ta
 rain NOM fall-PST
 ‘It rained.’
- b. Kazue ga ame ni hur_{intran}-rare-ta
 Kazue NOM rain DAT fall-PASS_{INDIRECT}-PST
 ‘Kazue got rained on.’
- c. * ame ga Kazue o hur-ta
 rain NOM Kazue ACC all-PST
- d. sensee ga Tomoko o nagut_{tran}-ta
 teacher NOM Tomoko ACC hit-PST
 ‘The teacher hit Tomoko.’
- e. Tomoko ga sensee ni nagu_{tran}-rare-ta
 Tomoko NOM teacher by hit-PASS_{DIRECT}-PST
 ‘Tomoko was hit by the teacher.’
- f. Taroo ga Tomoko o sensee ni nagu_{tran}-rare-ta
 Taro NOM Tomoko ACC teacher DAT hit-PASS_{INDIRECT}-PST
 ‘Taro was affected by the teacher’s having hit Tomoko.’
- g. * sensee ga Taroo o Tomoko o nagut_{tran}-ta
 teacher NOM Taro ACC Tomoko ACC hit-PST

Indirect passive and direct passive differ on the following. First, the indirect passive can occur with an intransitive verb such as *huru* ‘fall’ as in (46b). Second, indirect passives do not have active voice counterparts. In the direct passive construction, the active voice counterpart can be obtained by changing the case marking of the arguments in the direct passive sentence from *ga* to *o*, from *ni* to *ga*, and by deleting *rare* as it can be seen in the contrast between (46d) and (46e). If we apply this to the intransitive verb+*rare* in (46b), we obtain (46c), which is ungrammatical. This shows that (46b) does not have an active counterpart. Similarly, if we apply the same case marking alternations to a transitive verb+*rare* in (46f), we obtain (46g), which is also ungrammatical. This again shows that (46f) does not have an active counterpart. Third, the indirect passive sentences contain an extra argument in comparison to their non-passive counterparts (compare (46a) and (46b), and (46d) and (46f)). This extra argument is marked by NOM, and the referent of this argument is the entity that is affected by the event denoted by the base verb. In (46f), native speakers would understand that *Taro* and *Tomoko* are in a special relation (e.g., family members) such that *Tomoko*’s being hit by the teacher would affect *Taro*. Moreover, Shibatani (1990: 327) points out that the emoter who is affected cannot be directly involved in the scene of the event toward which the emoter holds attitudes, as it is clear in (46f); namely, *Tomoko*’s being hit by the teacher does not involve *Taro* in the hitting scene. Lastly, Van Valin and LaPolla (1997: 389-391) argue that the *ni*-marked argument belongs to a unit that is structurally distinct from the one in the direct passive; namely, the *ni*-marked argument in the indirect passive is a core argument, while that of the direct passive is a peripheral adjunct. They support their analysis by presenting

sentences which involve the interpretation of the antecedent of *zibun* ‘self’ based on Kuno’s (1973) sentences. First consider the English sentences in (47).

- (47) a. Sally talked to Harry about herself/himself.
 b. Sandy gave the flowers to herself.
 c. *The flowers were given to herself by Sandy.
 d. *The flowers were given by Sandy to herself.

In English, a core argument can be the antecedent of the anaphor (e.g., *Harry* in (47a)), while a peripheral adjunct cannot (e.g., *Sandy* in (47d)). Now consider Japanese sentences, (48a) with direct passive, and (48b) with indirect passive.

- (48) a. yakuza wa Hanako ni zibun no uti de koros-are-ta
 gangster TOP Hanako by self GEN house in kill-PASS-PST
 ‘The gangster_i was killed by Hanako_j in self_{i/*j}’s house.’
- b. Taro wa Hanako ni zibun no uti de
 Taro TOP Hanako DAT self GEN house in
 nekom-are-ta
 become.bedridden-PASS-PST
 ‘Taro_i was affected by Hanako_j’s becoming bedridden in self_{i/j}’s house.’

Example (48a) shows that *Hanako* in the direct passive cannot antecede *zibun*. On the other hand, *Hanako* in the indirect passive can antecede *zibun* as shown in (48b). This is argued to be the case because *Hanako* is a core argument in the indirect passive but not in the direct passive (where it is an adjunct).

Now that we have observed the fundamental characteristics of indirect passivization, we will consider whether combining the base verb with the indirect passive *-(r)are* takes place in syntax or in the lexicon. Previously, two proposals have been made

in RRG. First, Van Valin and LaPolla (1997: 390-391) propose that it is a lexical process. Consider (49).

- (49) a. Hanako ga nekon-da
 Hanako NOM become.bedridden-PST
 ‘Hanako became bedridden.’
- b. Taroo wa Hanako ni nekom-are-ta
 Taro TOP Hanako DAT become.bedridden-PASS-PST
 ‘Taro was affected by Hanako’s becoming bedridden.’

Referring to the DAT-marked arguments in sentences such as (48b) and (49), Van Valin and LaPolla state that “the argument which would be the privileged syntactic argument in the normal form ... is not coded as the appropriate macrorole ... but rather as a non-macrorole direct core argument.” This suggests that the assignment of macroroles is affected, which in turn indicates that the indirect passivization process is lexical.

Imai (1998) offers another account, arguing that verb-(*r*)*are* (indirect) takes the juncture-nexus type of a nuclear coordination, suggesting that the process is syntactic. His conclusion is based on the observation that *-te-i* ‘LINK-exist’ of an aspectual operator can intervene between elements within the complex predicate, as shown in (50a).

- (50) a. Taro-ga Hanako-ni (yodoosi) oki-te-i-rare-ta¹⁴
 -NOM -DAT (all.night) stay.up-L-PROG-PASS-PAST
 ‘Taro was affected by Hanako’s staying up (all night).’(Imai 1998: 50 *sic*)
- b. [**do**_ (Hanako, [**stay-up**_ (Hanako))]] ^ [**feel-affected**_ (Taro)]
 ACT → DCA DCA=peak

¹⁴ This sentence originally comes from Sugioka (1985). Not all native speakers seem to agree that this sentence is acceptable. In fact, other contexts make it clear that verb-*te-i-rare* is completely unacceptable, as shown in (a) below.

- (a) * Taro ga tuma ni sin-de-i-rare-ta
 Taro NOM wife DAT die-LINK-exist-PASS-PST
 ‘Taro was affected by Hanako’s remaining dead.’

- c. Hanako ga oki-te-i-ru
 Hanako NOM stay.up-LINK-exist-NPST
 ‘Hanako is up (awake).’

Crucially, Imai analyzes *te-i-* in (50a) as a progressive marker, as the English gloss PROG indicates. Imai’s reasoning is that since the progressive marker is a nuclear operator and *-(r)are* occurs outside of it, sentence (50a) must be an instance of nuclear coordination.

Imai (1998: 20) furthermore proposes the Japanese case marking rules in (51), which account for the case marking patterns including the coding properties by indirect passive.

- (51) (p) Assign nominative case to the pragmatic peak.
 (a) Assign nominative case to the higher ranking macrorole core argument.
 (b) Assign accusative case to the other macrorole core argument.
 (c) Assign dative case to the other core argument as default (Direct Core Argument)
 (c_) The other core argument may take a postposition (Oblique Core Argument)

The term ‘pragmatic peak’ in rule (51p) originally comes from Van Valin and Foley (1980: 338), by which they refer to “[t]he pragmatically most salient NP in a clause.” This conception, in turn, originates in Zubin’s (1978) ‘focus of interest’, which refers to the participant whom the speaker treats as the most salient in the scene of the event. By ‘pragmatic peak’, Imai refers to such a participant in the sense of Zubin.¹⁵

The most significant part of these rules is that ‘pragmatic peak’ always receives the nominative case in Japanese. To account for the case assignment of the indirect passive, Imai (1998: 47-48) further stipulates the following two points:

- (52) The highest macrorole of the base sentence is ‘demoted’ to non-macrorole direct core argument status.
- (53) The lowest semantic argument in the LS (i.e. the affected participant) is assigned a non-macrorole direct core argument status.

Imai hypothesizes that if an argument is ‘demoted’, then it becomes pragmatically less salient, whereas the added argument is more salient than any other arguments; and therefore it qualifies as the ‘pragmatic peak’. Accordingly, in (54), the added argument *Hanako* receives NOM following (53) and (51p); and the highest ranking macrorole of the base verb *Taro* receives DAT because it is demoted to a core argument, according to rule (51c).

- (54) Hanako ga Taroo ni sin-are-ta
 Hanako NOM Taro DAT die-PASS-PST
 ‘Taro died on Hanako.’

Analogously, in (55), the added argument *Hanako* receives NOM, as it follows from rule (51p); and the highest ranking macrorole of the base sentence *Taro* receives DAT since it is demoted to a core argument, following rule (51c). The undergoer of the base verb receives ACC following (51b).

- (55) Hanako ga Taroo ni uta o utaw-are-ta
 Hanako NOM Taro DAT song ACC sing-PASS-PST
 ‘Hanako was affected by Taro’s singing a song.’

Imai’s proposal is problematic in two respects. One concerns the interpretation of *-te-i* and the other concerns his treatment of macroroles. Let us elaborate on each point.

First, Imai analyzes *-te-i* in (50), repeated as (56), as a progressive marker.

¹⁵ Shibatani (1994: 477) offers a similar account for the treatment of the added argument of *-(r)are*, saying that “the extra-thematic argument is pragmatically integrated into clausal structure on the basis

- (56) a. Taro-ga Hanako-ni (yodoosi) oki-te-i-rare-ta
 -NOM -DAT (all.night) stay.up-L-PROG-PASS-PAST
 ‘Taro was affected by Hanako’s staying up (all night).’ (Imai 1998: 50 *sic*)
- b. [do_ (Hanako, [stay-up_ (Hanako)])]^ [feel-affected_ (Taro)]
 ACT→DCA DCA=peak
- c. Hanako ga oki-te-i-ru
 Hanako NOM stay.up-LINK-exist-NPST
 ‘Hanako is up (awake).’

Note that the base verb *oki-* ‘get up’ is an achievement verb. As we discussed in Chapter 2, *-te-i* functions as a morphological device to derive a state when it occurs with a plain telic verb such as *oki-* ‘get up’. This means that the LS of *oki-te-i* is the state *awake_ (x)*. Since *-te-i* is not the progressive marker (i.e., it is not a nuclear operator), Imai’s hypothesis that verb plus indirect passive enters into nuclear coordination is untenable.

Second, Imai attempts to capture the indirect passivization phenomenon in terms of ranking of the arguments. One serious problem is that Imai treats the experiencer as the undergoer. For example, in the LS in (56b), *Taro* is an argument of a state predicate. This means that *Taro* is the undergoer. In this case, a sentence such as (55) would have two undergoers, and having two undergoers in a single core is theoretically impossible, as far as current RRG theory is concerned.

Imai (1998) provides this single example given in (56) to show his point. However, what he intended to demonstrate can be further tested by examining whether PROG marker *-te-i* can precede *-(r)are*. It turns out that the sequence *-te-i (r)are* (PROG-PASS) is unacceptable or marginal at best, as shown in (57).

- (57) a. akatyan ga ima nai-te-i-ru

of the notion of relevance....”

baby NOM now cry-LINK-exist(PROG)-NPST
'The baby is crying now.'

- b. * watasi ga akatyan ni nai-te-i-rare-ru
I NOM baby DAT cry-LINK-exist(PROG)-PASS- NPST
'The baby is crying on me.'

- c. Hanako ga ima aisukuriimu o
Hanako NOM now ice-cream ACC

tabe-te-i-ru
eat-LINK-exist(PROG)-NPST

'Hanako is eating ice-cream now.'

- d. * Taroo ga Hanako ni aisukuriimu o
Taro NOM Hanako DAT ice-cream ACC

tabe-te-i-rare-ru
eat-LINK-exist(PROG)-PASS-NPST

'Taro is affected by Hanako's eating the ice-cream.'

If *-te-i* of an aspectual operator cannot precede *-(r)are*, Imai's proposal cannot be maintained that verb-*te-i-(r)are* shows an instance of nuclear coordination.

Contrary to Imai's (1998) proposal, I claim that the indirect passive is a lexical process, following Van Valin and LaPolla (1997). My main argument is that combining *-(r)are* with the base verb affects the logical structure of the base verb. Since Van Valin and LaPolla (1997) do not discuss the specific mechanism of macrorole assignments for indirect passive in Japanese, I offer an account below, while adopting Imai's (1998) proposal on case marking rules.

We begin by considering the LS of the indirect passive *-(r)are*. I observe that Imai's representation does not capture the semantics of indirect passive adequately. His representation is repeated below in (58b).

- (58) a. Hanako-ga Taro-ni sin-are-ta
 -NOM -DAT die-PASS-PAST
 ‘Taro died on Hanako.’

- b. [INGR **be-dead**_ (Taro)] ^ [feel-affected_ (Hanako)] (Imai 1998: 48)

The representation in (58b) above includes the notation ‘^’ which is ordinarily used for “simultaneous changes of state” (Van Valin LaPolla 1997: 109), such as in (59).

- (59) a. The man carved the canoe out of a log.
 b. [do_ (man, [**carve**_ (man, log)))]CAUSE
 [BECOME NOT **exist**_ (log) ^ BECOME **exist**_ (canoe)]

The use of ‘^’ in (58b) seems to suggest a simultaneous occurrence of two events: *Taro*’s death and *Hanako*’s feeling affected. However, it captures the native speaker’s intuition more accurately to consider the meaning of indirect passive as ‘an event *x* exists such that there is a person *y*, who has feelings toward *x*.’ Accordingly, I hypothesize that the indirect passive *-(r)are* is a type of state verb since it expresses internal sensation. Further, I stipulate that *-(r)are* is macrorole-atransitive [MR0], and the lexical entry of *-(r)are* is proposed in (60).

- (60) *-(r)are*: **affected**_ (*x*, *y*) [MR0]
 (where *x* is the experiencer and *y* is a LS of the base verb)

This representation means that combining *-(r)are* with the base verb creates a new logical structure which utilizes the LS of the base verb as its component. Combining the base verb with *-(r)are* affects the valence of the base verb in an unusual way. Because it adds a new argument *x*, if the base verb is a one-place predicate, it becomes a two-place predicate and if the base verb is a two-place predicate, it becomes a three-place predicate. However, since *-(r)are* is [MR0], the resulting syntactic transitivity matches that of the

argument of [MR0], it is assigned no macrorole. The arguments in the LS of the base verbs are assigned canonically following the Actor-Undergoer hierarchy, namely, *Taro* is the actor and *pizza* is the undergoer. The second step is to link macroroles and the morphosyntactically coded arguments. Recall that the primary case-marking rule in Japanese is to assign NOM to the pragmatic peak. Since *Hanako* (*x* argument of **affected_** (...)) is the ‘pragmatic peak’, it receives NOM (rule (p) in (51)), marked as [2]. We furthermore need a stipulation analogous to Imai’s to account for the DAT case, which is stated in (62).

(62) Assign DAT to the highest ranking macrorole in the indirect passive construction.

This stipulation in (62) takes care of the actor being linked to the DAT-marked NP, and the remaining case marking remains unaffected -- the undergoer *pizza* ‘pizza’ receives ACC, following the rule (c) in (51), marked as [3].

Though we need two stipulations, one for DAT assignment and one for macrorole-atransitivity, this approach is preferred to Imai’s because it does not involve issues on the ranking of two undergoers; namely, it is theoretically impossible to have two arguments corresponding to two undergoers in a single core in current RRG.

What we have found about indirect passive is that it is not useful as a diagnostic test. Since it is lexical, it cannot be used to identify the juncture-nexus type. Since it is a state predicate, many verbs are incompatible with it. Furthermore, *-(r)are* may impose further semantic restrictions on the base verb (Klaiman 1987). Therefore, inability to co-occur with the indirect passive may be irrelevant to the lexical-syntactic distinction.

Table 4.1. shows the constructional template for the indirect passive construction.

Table 4.1: Constructional template for Japanese indirect passive construction

CONSTRUCTION
Japanese indirect passive construction
MORPHOLOGY
Suffix <i>-(r)are</i> to a verbal stem in the <i>renyookee</i> ‘infinitive’ form
Assign DAT to the highest ranking macrorole
SEMANTICS
Lexical entry of <i>(r)are</i> : affected _ (x, [y]) [MR0]
<i>x</i> feels affected toward the event of <i>y</i> .
The event of <i>y</i> must be punctual (Klaiman 1987).

4.4.3. Causative

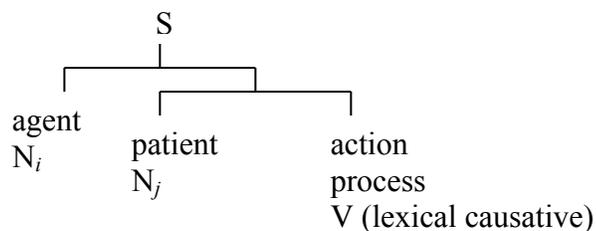
There seems to be very little work on Japanese causatives in RRG. Imai (1998) argues that the Japanese causative consists of two types: lexical and syntactic. This dichotomous view, however, basically follows Shibatani (1973b, 1976), who argues for distinct characteristics between the ‘lexical’ and the ‘affixal’ or ‘productive’ (i.e., syntactic) causative. Imai’s contribution is that he examined the juncture-nexus type of verb-*(s)ase*. First, we briefly outline Shibatani’s distinction of ‘lexical’ and ‘affixal’ causative, and then we turn to Imai.

4.4.3.1. Shibatani (1973b)

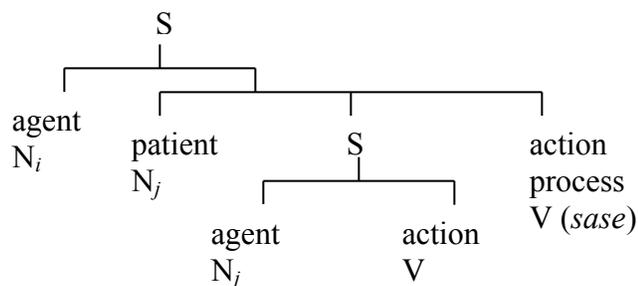
Shibatani (1973b) proposes that Japanese causatives express three types of causation, whose semantic distinction can be represented in three structural types shown in (63) (modified from Shibatani 1973b: 371-372, —subindices *i/j* added, and example sentences omitted).¹⁷

¹⁷ According to Shibatani, these representations are adopted from Chafe (1970) with modifications.

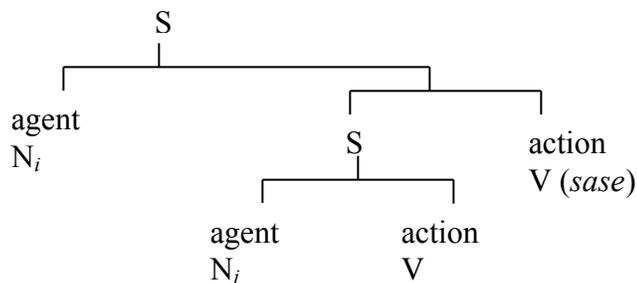
(63a) Lexical causative structure



(63b) *o*-causative structure



(63c) *ni*-causative structure



The three structures are first divided into two types; ‘lexical’ (63a) and ‘affixal’ (i.e., syntactic) causation, the latter of which is further divided into *o*-causative (63b) and *ni*-causative (63c).

According to Shibatani (1973b: 350), ‘the lexical causative’ refers to “the verb whose *morphological* makeup does not include a causative morpheme [i.e., (*s*)*ase*], while involving both agent and patient, the latter of which undergoes a change of state” (see

64a-d). On the other hand, ‘the affixal causative’ refers to the forms that contain the causative morpheme *-(s)ase* such as in (64e-h).

(64) Lexical causative

- a. age- ‘raise’
- b. tome- ‘stop’
- c. koros- ‘kill’
- d. ire- ‘put’

Affixal causative

- e. agar-ase- ‘make rise’
- f. tomar-ase- ‘make stop’
- g. sin-ase- ‘cause to die’
- h. hair-ase- ‘make one enter’

Shibatani notices several differences in the behavior of lexical and affixal causatives. We introduce two of them here; the interpretation of the *soo su-ru* ‘do so’ phrase, and the interpretation of the reflexive *zibun* ‘self’.

First, the affixal causative creates ambiguity with the *soo su-ru* ‘do so’ phrase, whereas the lexical causative does not. Consider (65) and (66).

- (65) a. Taroo ga Ziroo o tomar-ase-ru to
 Taro NOM Jiro ACC stop-CAUS-NPST when
- Hanako mo soo si-ta
 Hanako FOC so do-PST
- ‘When Taro made Jiro stop, Hanako did so, too.’ (translation)
 b. ‘When Taro made Jiro stop, Hanako also stopped.’ (paraphrase 1)
 c. ‘When Taro made Jiro stop, Hanako also made Jiro stop.’ (paraphrase 2)
- (66) a. Taroo ga Ziroo o tome-ru to
 Taro NOM Jiro ACC stop-NPST when
- Hanako mo soo si-ta
 Hanako FOC so do-PST
- ‘When Taro stopped Jiro, Hanako did so, too.’ (translation)
 b. * ‘When Taro stopped Jiro, Hanako also stopped.’ (paraphrase 1)
 c. ‘When Taro stopped Jiro, Hanako also stopped Jiro.’ (paraphrase 2)

Example (65) contains an affixal causative form *tomar-ase* ‘make stop’ whereas (66) contains a lexical causative form *tome-* ‘stop’. Since the affixal sentence is postulated to consist of a matrix predicate taking an embedded predicate (cf. 63b and 63c), the *soo-suru* ‘do so’ phrase can refer to two actions; the action of the base verb and the action of causing. Due to this, the affixal causative sentence can yield two interpretations as in (65b) and (65c). On the other hand, since lexical causatives consist of a single predicate (cf. 63a), the anaphora can refer only to a single action, resulting in a single interpretation of (66c).

Similarly, the affixal causative creates ambiguity in the interpretation of the controller of the reflexive *zibun* ‘self’, while the lexical causative does not, as illustrated in (67) and (68).

- (67) Taroo ga Hanako o zibun no heya ni hair-ase-ta
 Taro NOM Hanako ACC self GEN room to enter-CAUS-PST
 ‘Taro_i made Hanako_j enter his_i/her_j own room.’
- (68) Taroo ga Hanako o zibun no heya ni ire-ta
 Taro NOM Hanako ACC self GEN room to put-PST
 ‘Taro_i put Hanako_j into his_i/*her_j own room.’

It has been claimed that the antecedent of *zibun* ‘self’ in Japanese must be the ‘subject’ of the sentence (e.g., Kuno 1973). The affixal causative sentence has two subjects given the structures proposed in (63b) and (63c). Accordingly, both *Taro* and *Hanako* can serve as the controller of the reflexive in (67). On the other hand, the lexical causative contains a single subject (cf. (63a)), and therefore, only *Taro* functions as the controller in (68).

Shibatani (1973b) furthermore argues that the ‘affixal’ causative expresses two types of causation: *o*-causative and *ni*-causative, following Kuroda (1965). The labels *o*-

and *ni*- correspond to the case marking on the causee when the base verb is intransitive; *o* ‘accusative’ and *ni* ‘dative’ are shown in (69a) and (70a) respectively (adapted from Shibatani 1973b: 334).

- (69) a. Taroo ga tika^ozuku-de Ziroo o hasir-ase-ta
 Taro NOM forcibly Jiro ACC run-CAUS-PST
 ‘Taro forcibly caused Jiro to run.’
- b. ? Taroo ga tikaⁿⁱzuku-de Ziroo ni hasir-ase-ta
- (70) a. Taroo ga yasa^osiku iikikase-te Ziroo ni hasir-ase-ta
 Taro NOM (gently)(by persuading) Jiro DAT run-CAUS-PST
 ‘Taro caused Jiro to run by gently persuading him.’
- b. ? Taroo ga yasaⁿⁱsiku iikikase-te Ziroo o hasir-ase-ta

The distinction of case marking on the causee is argued to represent a semantic difference: i.e., *o*- is used when the causer enforces direct and coercive causation, whereas *ni*- is used when the causer implements more indirect causation. This semantic difference accounts for the awkwardness of *o*-marking (direct/coercive causation) with the phrase ‘by gently persuading’ in (70b), and *ni*-marking (indirect) with the phrase ‘forcibly’ in (69b), since the semantics of the adjunct contradicts the semantics of the causing act in each case.

One point worth mentioning is that the distinction of *ni* and *o* never emerges when the base verb is transitive. This is because double *o* marking is blocked in Japanese (Harada 1973). Accordingly, if the base verb is transitive, the causee always receives *ni*-marking. In this case, the sentence is ambiguous between the indirect causation (‘have’) reading and the direct causation (‘make’) reading, as shown in (71).

- (71) Taroo ga Hanako ni huku o ki-sase-ta
 Taro NOM Hanako DAT clothes ACC put.on-CAUS-PST
 (i) ‘Taro had Hanako put on clothes.’
 (ii) ‘Taro made Hanako put on clothes.’

Recall that Shibatani proposes distinct structures for *ni*-causative and *o*-causative (63b and 63c). When we consider the interpretation of verb-(s)*ase* with a temporal adverbial phrase such as *zyuuzi ni* ‘at 10 o’clock’, it becomes clear that the semantic difference ought to be captured by distinct syntactic representations. Consider (72).

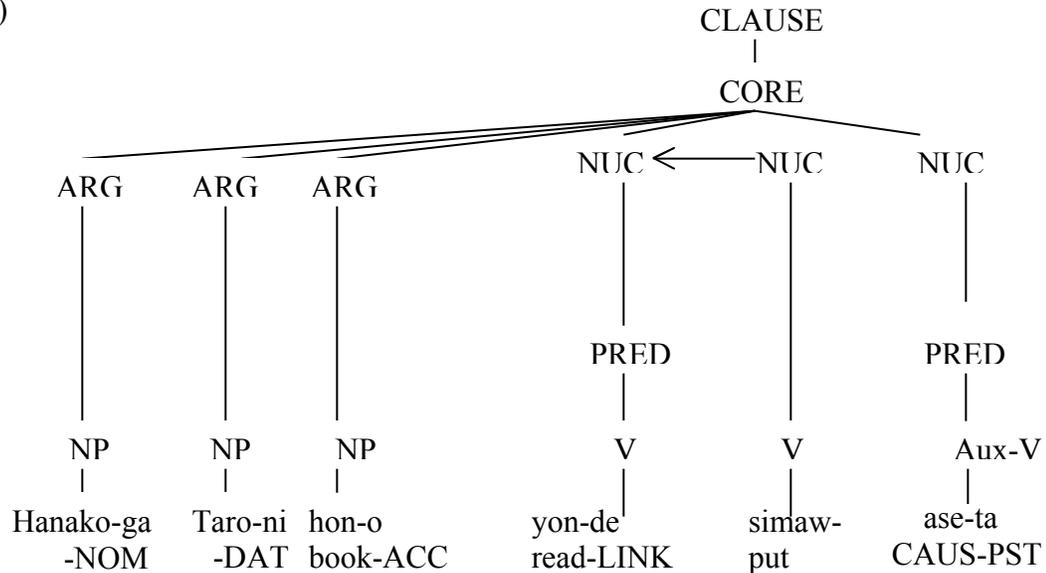
- (72) Taroo ga Hanako ni huku o zyuuzi ni ki-sase-ta¹⁸
 Taro NOM Hanako DAT clothes ACCten-o’clock at put.on-CAUSE-PST
 (i) ‘At ten o’clock, Taro had Hanako put on the clothes.’
 (ii) ‘Taro had Hanako put on the clothes at ten o’clock.’
 (iii) ‘Taro made Hanako put on the clothes at ten o’clock.’

In the ‘have’ reading, the temporal adverbial phrase *zyuuzi ni* ‘at 10 o’clock’ can refer to either the (indirect) causing event (i.e., It was 10 o’clock when *Taro*’s causing event took place.)(72i) or *Hanako*’s dressing event (i.e., It was 10 o’clock when *Hanako* put on the clothes)(72ii). On the other hand, in the ‘make’ reading (72iii), the time refers to *Hanako*’s dressing event only, since *Taro*’s causing action is concurrent with the dressing action.

To sum up this subsection, Shibatani (1973b) classifies Japanese causatives into three types: lexical causative, *o*-causative, and *ni*-causative. They express different degrees of causation. The most direct causation is expressed by the lexical causatives where the actor physically acts on the undergoer (e.g., *kowas-* ‘break_{tran}’); the *o*-causative expresses a situation where the actor directly acts on the causee to make him/her perform the action; and the *ni*-causative expresses a situation where the actor indirectly acts on the

¹⁸ The translation provided in Shibatani (1973b: 361) for the sentence in the main text is: (a) ‘At ten o’clock, Taro made Hanako put on the clothes.’ and (b) ‘Taro brought it about that Hanako put on the clothes at ten o’clock.’ Because ‘make’ suggests direct causation, I use the gloss ‘have’ for this sentence.

(74)



Imai's observation that *-(s)ase* can follow a nuclear operator is insightful, because it clearly indicates that one type of *-(s)ase* ought to be syntactic. However, there are two issues with Imai's analysis. First, it is not made clear which type of causation this representation in (74) corresponds to. In (73), Imai translates *-(s)ase* with *made/let*, which suggests that he recognizes different degrees of causation, which seem to correspond to Shibatani's distinction of *ni-* vs. *o-* causation. However, it is unclear whether there are two types of causative structures, and if so, which of them this particular representation corresponds to. Secondly, his argument for determining the level of juncture as nuclear is not convincing (i.e., no syntactic arguments can intervene between the two nuclei), because it is simply a morphological fact that *-(s)ase* occurs in a bound form, and no nominal phrases can occur in between.

Our task now is to re-examine the juncture-nexus type of *-(s)ase*. What we understood from Imai's analysis is that the juncture-nexus type of (one type of) *-(s)ase* must be nuclear coordination or looser (see the hierarchy of the juncture-nexus types in

(4), Chapter 2) since an aspectual operator *-te-simaw-* ‘LINK-PERFECT’ can intervene between the base verb and *-(s)ase*. To examine the levels of juncture, we can employ an adjunct interpretation as a diagnostic test, and to examine the nexus type, operator-dependency can be examined. First, consider (75), which includes a temporal adverbial phrase repeated from (72).

- (75) Taroo ga Hanako ni huku o zyuu-zi ni ki-sase-ta
 Taro NOM Hanako DAT clothes ACCten-o'clock at put.on-CAUSE-PST
 (i) ‘At ten o’clock, Taro had Hanako put on the clothes.’
 (ii) ‘Taro had Hanako put on the clothes at ten o’clock.’
 (iii) ‘Taro made Hanako put on the clothes at ten o’clock.’

The interpretation of (i) and (ii) consists of two temporally disjunctive events; *Taro*’s causing event and *Hanako*’s dressing event. On the other hand, in the reading of (iii), the causing and the dressing events take place concurrently and they are integrated as one event. Let us label the interpretation of (i) and (ii) as ‘jussive’ in the sense of Van Valin and LaPolla (1997: 479), “the expression of a command, request or demand,” (because most likely, (i) involves the causer’s verbal command or request to the causee), and the interpretation of (iii) as ‘causative’ in order to make clear the semantic difference between the former two and the latter.

Let us consider the ‘jussive’ reading first. With the adverbial phrase *zyuu-zi ni* ‘at ten o’clock’, sentence (75) can mean: (a) *Taro*’s command took place at ten o’clock’ or (b) *Hanako*’s dressing took place at ten o’clock.’ Then, since a temporal adverb is a core modifier, the structure for the ‘jussive’ reading must consist of two separate cores; namely, the base verb must be housed under its own core, which is distinct from the core which houses *-(s)ase*. This suggests that verb-*-(s)ase* is a type of core juncture. The question now is the nexus type. First, we can eliminate the possibility of core

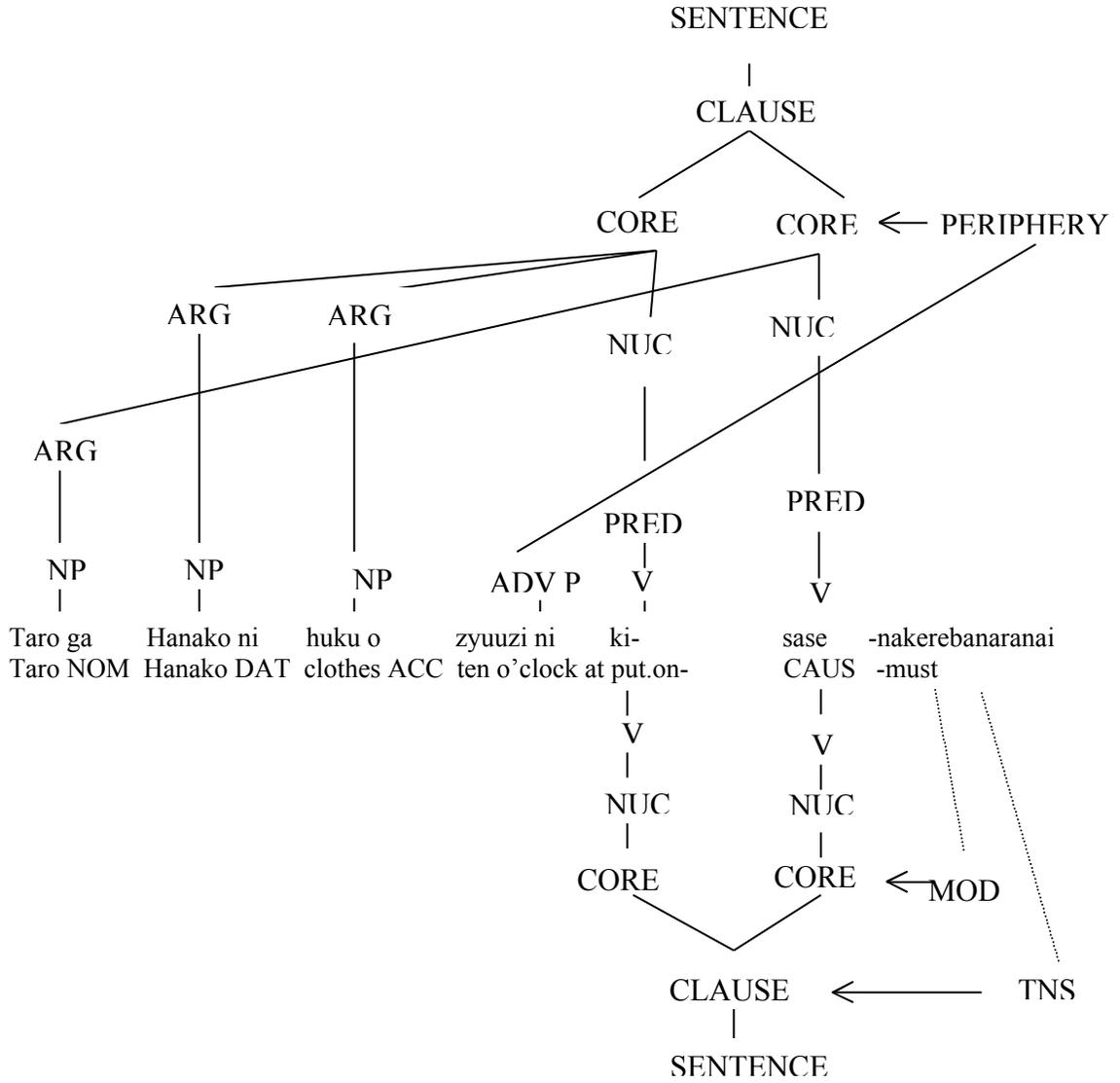
subordination. In core subordination, V1 functions as the argument of V2 and there are no arguments shared by the cores. Since verb-(s)*ase* shares at least one argument, it must be a non-subordinate core juncture. To determine whether the complex predicate is core cosubordination or coordination, we need to examine the scope of deontic modal, which is a core operator. If the scope of the modal is over two cores, the juncture-nexus type is core cosubordination (i.e., operator-dependent), and otherwise, core coordination (i.e., operator-independent). Consider (76).

(76) Taroo ga Hanako ni huku o zyuu-zi ni ki-sase-nakerebanaranai
 Taro NOM Hanako DAT clothes ACCten-o'clock at put.on-CAUSE-must

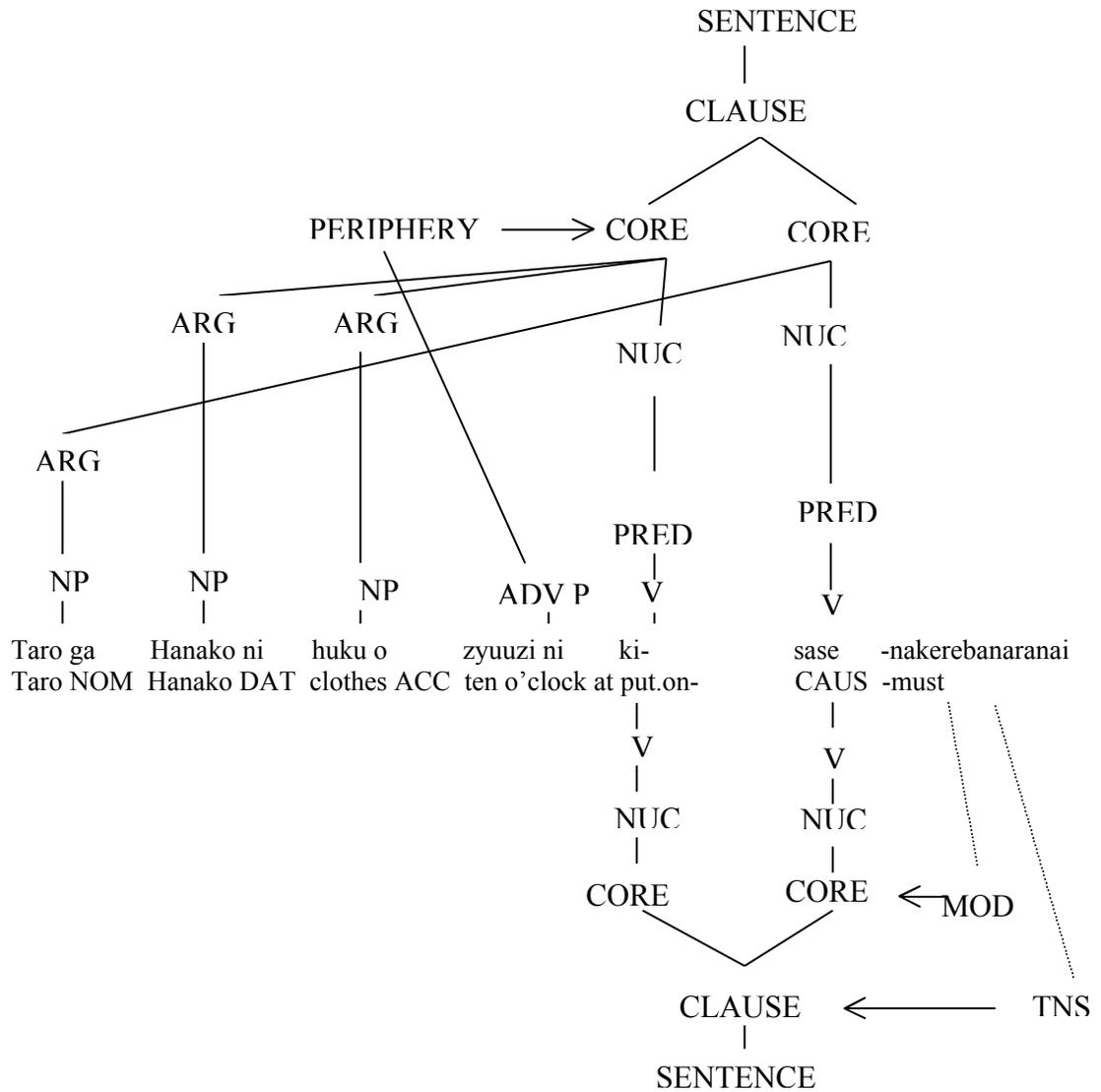
- (i) 'At ten o'clock, Taro must have Hanako put on the clothes.'
 = 'At ten o'clock, Taro is obliged to have Hanako put on the clothes.'
 * 'At ten o'clock, Taro is obliged to have Hanako be obliged to put on the clothes.'
- (ii) 'Taro must have Hanako put on the clothes at ten o'clock.'
 = 'Taro is obliged to have Hanako put on the clothes at ten o'clock.'

In (76), the scope of the deontic modal *nakerebanaranai* 'must' is over the causing event only; namely, 'Taro is obliged to have Hanako put on the clothes' and not 'Taro is obliged to have Hanako be obliged to put on the clothes'. This shows that the two cores under the 'jussive reading' are operator independent, which in turn shows that the juncture-nexus type is core coordination. Accordingly, the LSC for (76) is presented below. (76i_) is for the reading (76i), and (76ii_) is for the reading (76ii).

(76i_)



(76ii_)



We now turn to the 'cause' reading in (72), repeated as (77).

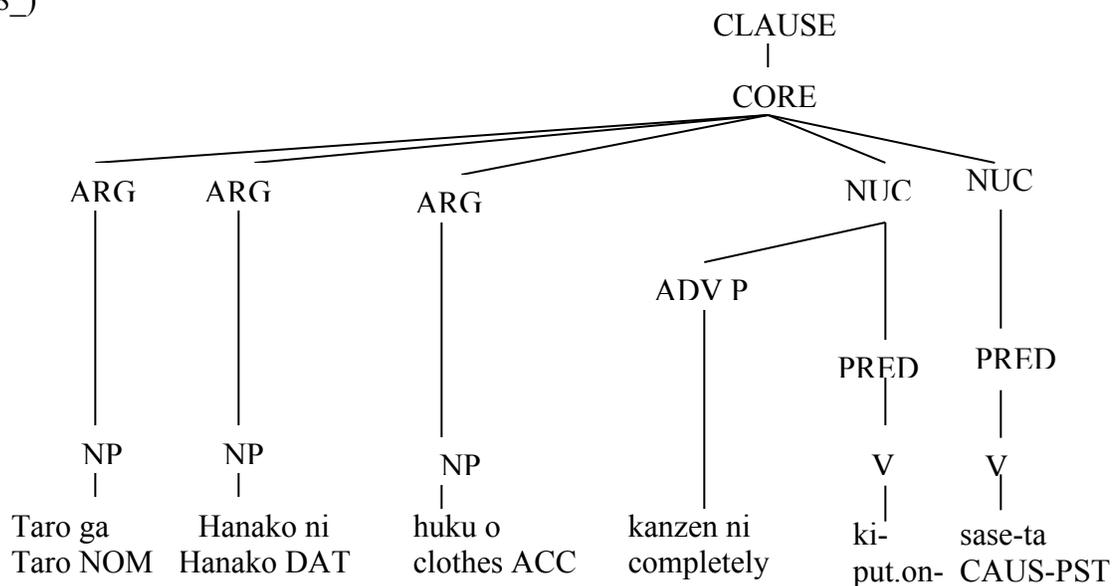
- (77) Taroo ga Hanako ni huku o zyuuzi ni ki-sase-ta
 Taro NOM Hanako DAT clothes ACC ten-o'clock at put.on-CAUSE-PST
 'Taro made Hanako put on the clothes at ten o'clock.'

Under the ‘cause’ reading, the temporal adverb refers to the caused event which takes place concurrently with the caused event. This suggests that the adverbial phrase modifies a single core which houses the entire sequence of event. This, in turn, suggests that the level of juncture must be nexus, which is housed under a single core. To further examine the nexus type, we consider the interpretation of the nuclear-level adverb *kanzen-ni* ‘completely’ in (78).

(78) Taroo ga Hanako ni huku o kanzen-ni ki-sase-ta
 Taro NOM Hanako DAT clothes ACC completely put.on-CAUS-PST
 ‘Taro made Hanako put on the clothes completely.’

In (78), the adverb *kanzen-ni* ‘completely’ can only refer to completeness of the dressing event (i.e., not the completeness of the directing or assisting action by the causer). This means that *ki-* ‘put on’ is housed under a separate nucleus from the one that houses *-(s)ase*. This, in turn, indicates that the juncture-nexus type is nuclear coordination, since the nuclear-level adverb independently modifies *-(s)ase*. Accordingly, the LSC for (78) is represented in (78_).

(78_)



In brief, Imai's (1998) conclusion that the Japanese syntactic causative takes nuclear coordination is supported but for a different reason. Furthermore, one more juncture-nexus type (namely, core coordination) must be proposed to account for the interpretations of the temporal adjunct which can modify both the causing and the caused events. The structural information of causatives is summarized in Table 4.2.

Table 4.2. Constructional template for Japanese causative constructions

CONSTRUCTIONS	
Japanese causative constructions	
SYNTAX Juncture: Nuclear Nexus: Coordination Construction type: compounding Linking: If the linked verb is intransitive, assign ACC to the causee; otherwise, default.	SYNTAX Juncture: Core Nexus: Coordination Construction type: compounding Linking: If the linked verb is intransitive, assign DAT to the causee; otherwise, default.
SEMANTICS The causee must be animate. ¹⁹ direct causation	SEMANTICS The causee must be animate. Jussive
MORPHOLOGY Combine <i>-(s)ase</i> with a verbal stem in the <i>renyookee</i> 'infinitive' form	
PRAGMATICS Illocutionary force: Unspecified Focus structure: Unspecified	

¹⁹ Shibatani (1973b, 1976) points out that an inanimate causee is disallowed in a causative construction. When the causee is inanimate, the sentence is unacceptable as in (a) and (b), whereas the sentence is acceptable when the causee is animate as in (c) (examples from Shibatani 1976: 33-34).

- a. * Boku wa isu o ugok-ase-ta
 I chair move-cause-past
 'I caused the chair to move.'
- b. * Boku wa hon o oti-sase-ta
 I book drop-cause-past
 'I caused the book to fall down.'
- c. Taroo wa Ziroo o taore-sase-ta
 fall-cause-past
 'Taro made Jiro fall down.'

4. 5. Summary

This chapter first presented RRG assumptions with regard to the demarcation between lexical and syntactic phenomena. Then, we reviewed the diagnostic tests to distinguish lexical from syntactic compounds employed in Tagashira (1978), Kageyama (1993), and Matsumoto (1992, 1996). The diagnostic tests I employ in order to examine the juncture-nexus types of syntactic compound verbs are (i) adjunct interpretations; (ii) direct passivization; and (iii) causativization. To which juncture level or nexus relation these diagnostic tests are concerned with are summarized in (79) through (81).

(79) Adjunct interpretations

- a. Epistemic and evidential adverbs: Clause-level modifier
e.g., *akirakani* ‘evidently’
- b. Temporal adverbial phrases: Core-level modifier
e.g., *zyuuzi-ni* ‘at ten o’clock’
- c. Aspectual adverb: Nuclear-level modifier
e.g., *kanzen-ni* ‘completely’

(80) Direct passivization

If *-(r)are* follows a predicate, the entire predicate including *-(r)are* must belong to a single core.

(81) Causativization

If *-(s)ase* denotes direct causation, V1-*(s)ase* enters into nuclear coordination. On the other hand, if *-(s)ase* denotes ‘jussive’ sense, V1-*(s)ase* enters into core coordination.

Chapter 5 and Chapter 6 discuss the specific juncture-nexus types of syntactic compound verbs and Chapter 7 discusses some of the lexical compound verbs.