

VERB MEANINGS AND THEIR EFFECTS ON SYNTACTIC BEHAVIORS :
A STUDY WITH SPECIAL REFERENCE TO ENGLISH AND JAPANESE
ERGATIVE PAIRS

By

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To Chieko with love and gratitude

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Ergative alternation is a process of valency shift observed cross-linguistically in which verbs alternate in transitivity with little or no change in form. Verbs that participate in the ergative alternation in English have been investigated from syntactic and semantic perspective. Japanese ergative pairs, on the other hand, are characterized not only by valency shift but also by their derivational oppositions between transitive and intransitive alternants. Given such characteristics, previous research has mainly focused on describing the derivational patterns and classifying ergative pairs accordingly. This in turn results in insufficient attention to semantic aspects of Japanese ergative pairs.

The major research goal of this dissertation is to investigate whether verbal meanings determine the alternating behaviors of ergative verbs. Under the framework of lexical semantics, this dissertation presents a semantic analysis of ergative pairs in Japanese. I propose to utilize research findings reported in works on English ergative

pairs to explicate the cause of the alternating behaviors of Japanese ergative pairs. One crucial finding is that semantic properties of verbs such as change of state and specification of causation are key factors both in English and Japanese in differentiating verbs that undergo the alternation from those which do not. Nevertheless, my research shows that there is some significant disagreement between English and Japanese in terms of the ergative alternatability of verbs. I suggest that such discrepancy results in part from lexical idiosyncrasies in each language. More importantly, however, I propose that different alternating behaviors may reflect the way native English and Japanese speakers perceive certain events differently. The implication of this observation will be that other different syntactic behaviors between English and Japanese may reflect people's different perception of events.

CHAPTER 1 INTRODUCTION

This dissertation presents a contrastive analysis of transitive/intransitive verb pairs in English and Japanese. The primary goal is to investigate under the framework of lexical semantics how semantic aspects of verbs affect the alternatability of Japanese verbs. The transitive/intransitive verb pair, which I refer to as *ergative pair*¹ throughout this dissertation, is described either as a single verb which is used both transitively and intransitively, as in English, or as a pair of morphologically related verbs, as in Japanese, which respectively describe a transitive and intransitive situation (Levin 1985:19-20). The transitive and intransitive member of the ergative pair is referred to as *ergative transitive* and *ergative intransitive*, respectively. Examples of English and Japanese ergative pairs include:

| (1) TRANSITIVE | | INTRANSITIVE | |
|----------------|-----------------|----------------|-----------------|
| <i>English</i> | <i>Japanese</i> | <i>English</i> | <i>Japanese</i> |
| break | war- | break | ware- |
| sink | sizume- | sink | sizum- |
| bend | mage- | bend | magar- |
| melt | tokas- | melt | toke- |
| bake | yak- | bake | yake- |

¹ Depending on the approaches adopted by linguists, “ergative” is also referred to as “unaccusative.” In Government-Binding theory, the term ergative is most commonly used (Burzio 1986). In Relational Grammar, on the other hand, unaccusative is widely used (Perlmutter 1978). Following Roberts (1987), I restrict the term ergative to verbs like *break* and *open* which have transitive counterparts. This allows me to distinguish ergative verbs from unaccusative verbs like *come* and *appear* which lack transitive counterparts. As will be discussed in detail in Chapter 2, the distinction between ergative and unaccusative is crucial to the present research.

Ergative pairs are also characterized by change in argument structure. Consider the following typical case of English ergative alternation.

- (2) a. Tom broke the vase.
 b. The vase broke.

Crucially, it is observed that the syntactic object (*vase*) of the ergative transitive (*break*) corresponds to the syntactic subject of the ergative intransitive. This type of configurational correlation characteristic of the ergative pair is specifically referred to as *ergative alternation*.²

In Western linguistics, the ergative alternation has been investigated for more than three decades within theoretical frameworks such as Case Grammar (Fillmore 1968b, 1970), Generative Semantics (Lakoff 1968a, 1970), Government and Binding Theory (Burzio 1986), Cognitive Grammar (Langacker 1991), and Lexical Semantics (Levin 1993, Levin and Rappaport Hovav 1994, 1995). In particular, Fillmore (1970) focuses not only on verbs that participate in the ergative alternation but also on verbs that do not, attempting to account for the cause of the difference semantically. What is striking about Fillmore is that he laid the foundation for the subsequent lexical semantic approaches to this issue. Building on a more in-depth analysis by Smith (1978) of the ergative alternatability of verbs, Levin and Rappaport Hovav (1995) devote a whole chapter (Chapter 3) to investigating the semantics-syntax interface involved in the English ergative alternation (Levin and Rappaport Hovav refer to it as “causative alternation”),

² The ergative alternation is also referred to as causative alternation (Haspelmath 1993, Levin and Rappaport Hovav 1995), transitivity alternation (Hale and Keyser 1987), and unaccusativity alternation (Kiparsky 1998), among others.

arguing that whether a given verb participates in the alternation depends to a great extent on the semantic properties lexically inherent in the verb.

In Japanese linguistics, on the other hand, previous research on ergative pairs has mainly focused on their distinct suffixal forms as shown in (1) above, proposing a range of classifications accordingly (Sakuma 1936, Teramura 1982, Shibatani 1990, Jacobsen 1992). This may partly explain why there have been only sporadic and incomplete semantic analyses provided for Japanese ergative pairs (cf. Okuda 1978, Jacobsen 1982a, 1992, Hayatsu 1987, Mitsui 1992, Kageyama 1996). With a thorough lexical semantic approach presented in the present study it will be shown that Japanese ergative pairs can be semantically characterized to a large extent. This in turn suggests the possibility that the alternatability of a verb will be better accounted for in reference to the semantic properties of the verb. Furthermore, such a lexical semantic approach will suggest a need to propose a morpho-semantic classification distinct from the morphology-based classifications proposed in the past (cf. Hayatsu 1989).

One question that has been continuously addressed in the literature on lexical semantics over the decades is whether the syntactic behaviors of verbs are predictable from the semantics of the verbs (Perlmutter 1978, Wasaw 1985, Pinker 1989:104ff, Levin 1993a, Levin and Rappaport Hovav 1995:1, 1998, Ono 1997).³ In particular, researchers have sought to uncover semantically coherent verb classes which are fairly constant with respect to argument structure. Under this verb-class model, let us consider the English

³ As for the view that the relationship between the lexical-semantics and syntax is not necessarily consistent, see S.T. Rosen (1996), Lemmens (1998), and Rosen and Ritter (1998). See also Chapter 6 of the present dissertation.

verbs *happen* and *cut*. The verb *happen* belongs to a semantic verb class called ‘verbs of occurrence’ and can only occur in intransitive constructions (cf. Levin 1993a:260-261):

- (3) a. The accident happened yesterday.
 b. *My brother happened the accident yesterday. (On the interpretation that ‘My brother caused the accident yesterday’)

By contrast, the transitive verb *cut*, which belongs to the semantic class ‘verbs of cutting,’ fails to occur in ergative intransitive constructions (Levin 1993a:156).

- (4) a. The butcher cut the meat.
 b. *The meat cut. (On the interpretation that ‘The meat got cut’)

Given the correlation between verbs and their syntactic behaviors just described, Levin and Rappaport Hovav (1994, 1995) conduct detailed analyses of the semantics of English ergative pairs, seeking to determine which semantic properties contribute to verbs’ alternability. Drawing on a representation of verb meaning referred to as predicate decomposition, Levin and Rappaport Hovav (1995:94) propose the following lexical semantic representation template for ergative verbs:

- (5) [[x DO-SOMETHING] CAUSE [y BECOME *STATE*]]

Accordingly, the ergative verb *break* is represented as follows (Levin and Rappaport Hovav 1995:83):

- (6) *break*: [[x DO-SOMETHING] CAUSE [y BECOME *BROKEN*]]

One key feature in the representation in dealing with the issue of the lexical semantic-syntax interface, according to Levin and Rappaport Hovav, is the primitive BECOME. On their view, this primitive represents the semantic property ‘change of state,’ which Levin and Rappaport Hovav view as one of the crucial elements which have to do with the

ability of verbs to alternate in transitivity (for detailed discussion of this issue, see Chapter 3).⁴

In Japanese the ergative alternation is typically represented as follows:⁵

- (7) a. Taroo-wa kabin-o wat-ta. (< war- + ta)
 Taro-TOP vase-ACC break-PAST
 ‘Taro broke the vase.’
- b. Kabin-ga ware-ta.
 vase-NOM break-PAST
 ‘The vase broke.’

One characteristic associated with the Japanese ergative alternation in comparison to the English equivalent is that the former marks the difference in transitivity morphologically, as readily observed in the contrast between *war-* and *ware-* (Tsujimura 1990b:938). Since there are a number of distinct suffixal forms associated with ergative transitives and intransitives, one primary research goal researchers have attempted to achieve is to classify this particular group of verbs based on their derivational features (cf. Chapter 2; see also Shimada 1979 for a detailed outline of previous studies).

Compared to the rich tradition of morphological research on verb classifications involving ergative pairs, their syntactic and semantic aspects have not received much attention from researchers. As for syntactic characterization of ergative pairs, Okutsu (1967) first introduced the so-called dynamic (*dootai-teki*) approach to the derivational verbal morphology based on generative grammar. The dynamic approach differs from the

⁴ Another key assumption of the template is that the underlying semantic structure of *break* is a transitive one. On this view, the ergative intransitive use of the verb is derived by virtue of detransitivization, a completely opposite process to causativization which is widely held to account for the ergative alternation in general. See Chapter 2 for more discussion of this issue.

⁵ In this dissertation the following abbreviations are used: ACC=accusative particle, ASP= *te-iru* aspect marker, DAT=dative, EMP=emphatic marker, GEN=genitive, GER=gerund, INF=infinitive, NEG=negation marker, NOM=nominative particle, OBL=oblique, PAST=past tense marker, PRG=progressive, TOP=topic particle.

(1967) first introduced the so-called dynamic (*dootai-teki*) approach to the derivational verbal morphology based on generative grammar. The dynamic approach differs from the so-called static (*seitai-teki*) approach in that, according to Okutsu, the former approach explores the syntactic derivation of transitive verbs (i.e., transitivity) and intransitive verbs (i.e., intransitivity) mediated by the addition of derivational suffixes, while the latter approach focuses on classifications of ergative pairs based solely on morphological distinctions. Most importantly, Okutsu adopts the idea of ‘embedding’ from generative syntax, arguing that ergative transitive constructions are bi-clausal structures where an intransitive clause is embedded into a transitivity clause containing the transitivity suffix *-as*. Inoue (1976) further develops a generative syntactic approach to ergative pairs in Japanese.

With the growing interest in lexical semantics over the past three decades, researchers have investigated the relationship between verbs’ ability to alternate in transitivity and their meanings. Okutsu (1967) is among the first scholars who point to the significance of semantic-based analyses and encourage further research along these lines. Following the earlier attempts by Miyajima (1972) and Nishio (1978), a series of work by Hayatsu (1987, 1989, 1995) attempts to determine the semantic properties of verbs that have to do with the verb’s ability to alternate in transitivity. As with English, one semantic property thus isolated is change of state that is brought about on a Theme argument. Furthermore, Hayatsu notes that the subjects of ergative intransitives have a strong tendency to be inanimate. In other words, ergative intransitives containing animate Themes are most likely to resist alternating with transitive counterparts in Japanese.

Overall, Hayatsu's approach is notable in that it is comparable to the lexical semantic approach that has been intensively discussed in the Western linguistics.

Drawing more on the findings in lexical semantics in Western linguistics, Kageyama (1996) extends a long discussion about the relationship between verb meanings and the syntactic realizations of their argument structures. In keeping with Lexical Conceptual Structure (LCS) analogous to Levin and Rappaport Hovav's lexical semantic representation as in (5) above, Kageyama conducts a comparative analysis of the English and Japanese ergative alternations. On his terms, the alternation is not only a morphological or/and syntactic phenomenon but also a semantically explicable process. Kageyama basically agrees with other scholars like Smith, Haspelmath, and Levin and Rappaport Hovav, among others, in arguing that a given verb participates in the ergative alternation when a Theme argument is perceived to bring about a change on its own without any intervention of an external causer or agent (Kageyama 1996:158ff). What is noteworthy about Kageyama, however, is that he attempts to fuse Western lexical semantic approaches and traditional affix-based approaches together to account for Japanese ergative pairs and their alternating behaviors. Specifically, Kageyama assumes that the extent to which a given event is perceived to occur spontaneously or to be intervened by an external causer or agent is signaled in a fairly consistent manner by (the) suffixal forms added to Japanese ergative verb pairs.

Another line of semantic approach to the Japanese ergative pairs is proposed and discussed in Jacobsen (1982a, 1992). Under the assumption that there are regular correlations between morphological markedness and semantic markedness, Jacobsen associates morphological patterns shown by ergative pairs with speaker's empirically-

based event views. Based on his markedness theory, Jacobsen argues that if one member of a transitive-intransitive pair is more marked than the other, then the morphological markedness reflects the atypicality of a change-event.⁶ For instance, if an intransitive member is more marked than its transitive counterpart, the change of state denoted by the intransitive verb is perceived to occur less naturally in an autonomous situation than in a coerced situation. Furthermore, Jacobsen defines the “typical realization of a concept” (1992: 10) as prototype, maintaining that in spite of some major historical changes in verbal morphology, fairly regular markedness patterns observed in many of the Japanese transitive/intransitive verb oppositions still reflect a strong correlation between morphology and semantics. In short, Jacobsen holds that morphological and semantic markedness is a reflection of universal linguistic principles, suggesting the universality of prototype held among human beings.

It has been noticed in the literature that verbs that alternate in transitivity in one language are likely to undergo the same phenomenon in other languages (1993:92, Hale and Keyser 1998:89). Cross-linguistically, for instance, verbs equivalent to the English *break* undergo the ergative alternation, whereas verbs equivalent to the verb *laugh* do not (Pinker 1989:134). Given this observation, this dissertation research purports to

⁶ Jacobsen’s position that the correlation between formal markedness and semantic markedness observable among ergative pairs is based on the idea of prototype rather than that of accumulation of information is notable when compared to the general principle that languages show formal markedness patterns which reflect proportional accumulation of semantic information (Dowty 1979:46). In this general principle, a formally marked lexical item or grammatical structure is provided with more semantic properties than a formally unmarked counterpart is. Cross-linguistically, for instance, plural nouns are formally more marked than singular nouns since they, in addition to the basic category ‘nominal,’ contain ‘plurality,’ which is seen as a more marked feature than ‘singularity’ (Greenberg 1963, Haspelmath 1993:87).

supplement data from Japanese for further research on the lexical-semantic and syntax relationship. Furthermore, in view of insufficient cross-linguistic data in this area of research (Levin 1985:61), a study of the Japanese alternation that this dissertation presents from a lexical semantic point of view will serve to further explicate the mechanism of the lexical-semantic and syntactic interface cross-linguistically.

The organization of the dissertation is as follows. In Chapter 2, I first outline characteristics of ergative alternations in English and Japanese. Then, I discuss unaccusativity and middle constructions, which are assumed to be relevant to ergative alternations. I analyze morphological oppositions which characterize the Japanese ergative alternation. In particular I focus on the issue of the direction of derivation regarding the alternation. I will suggest that the directions of Japanese ergative pairs basically follow morphological markedness patterns.

Chapter 3 deals with semantic aspects of ergative pairs. I first discuss semantic properties of English and Japanese verbs that appear to be responsible for the syntactic expressions of arguments occurring with the verbs. Then, I demonstrate that a given change-of-state verb is paired with the transitive/intransitive counterpart when a means or an instrument responsible for the change of state is unspecified. In this view, lack of the intransitive counterparts of Japanese transitive verbs like *kar-* ‘cut (with a sickle, scissors, etc.)’ and *hik-* ‘grind, mince’ will be accounted for on the basis of the fact that both verbs lexically specify a means or an instrument whereby the events are brought about.

In Chapter 4, I review in detail the classification of ergative pairs presented by Jacobsen (1992). Adopting the concept of semantic transparency (Aronoff 1976), I propose that the ergative pairs under the classification of Jacobsen be separated into those

which are semantically transparent and those which are not. Drawing on the theory of Distributed Morphology (Halle and Marantz 1993), I argue that ergative pairs that are semantically transparent are derived post-lexically, whereas those which are semantically opaque are listed as separate lexical items in the lexicon.

In Chapter 5, I turn to the issue of aspect of the Japanese ergative pairs. I first illustrate that intransitive members of ergative pairs have a perfect meaning and transitive members have a progressive meaning, respectively, in combination with the aspectual marker *-te iru*. I propose that the type of an argument in the syntactic subject position determines the aspectual realization of a predicate suffixed by *-te iru*. Furthermore, given that certain intransitive members can be interpreted as progressive in *-te iru* constructions, I suggest that the semantic property ‘change of state’ should be sub-categorized according to ‘length of time’ and ‘definite endpoint’ necessary for a change to be completed.

CHAPTER 2 ERGATIVE ALTERNATION

2.1 Introduction

In Western linguistics, the phenomenon of alternation has been regarded as one of the prominent syntactic behaviors regarding verbs and their co-occurring arguments. In a broad sense, the ergative alternation is classified under the macro-category called *diathesis alternation*. Diathesis alternations are concerned with “alternations in the expression of the arguments of verbs” (Levin 1993b:80), subsuming, in addition to the ergative alternation, other types of alternations such as *locative alternation* and *dative alternation*.

- (1) *Locative Alternation:*
Jack sprayed paint on the wall.
Jack sprayed the wall with paint. (Levin 1993a:51)

- (2) *Dative Alternation:*
Bill sold Tom a car.
Bill sold a car to Tom. (Levin 1993a:46)

One characteristic that differentiates the ergative alternation from the dative and locative alternations is a change in valency. As evident in (1) and (2), the dative and locative alternations have to do with a change in the syntactic arrangement of arguments of verbs. On the other hand, the ergative alternation involves not only a change in the arrangement of verbs' arguments but also a change in the number of syntactically-realized arguments, as shown in (4) in Chapter 1, repeated here below:

(3) a. Tom broke the vase.

b. The vase broke.

In addition to the fact that the Theme *vase* is post-verbal in (3a) but pre-verbal in (3b) in relation to *break*, the transitive ergative predicate typically occurs with two arguments (i.e., dyadic), whereas the intransitive ergative predicate occurs with a single argument (i.e., monadic). In this respect, the ergative alternation is also characterizable as a valency-shift alternation.

The ergative alternation is observed cross-linguistically (Nedyalkov and Silnitsky 1973, Haspelmath 1993) and has been extensively investigated in languages such as English (Levin and Rappaport Hovav 1994, 1995), French (Labelle 1992), Japanese (Okutsu 1967, Jacobsen 1992, Kageyama 1996), and Korean (Croft 1990), among others. In this chapter, I first outline the ergative alternation in English and Japanese, focusing on differences and similarities in the ways in which it is represented in both languages. Then I go on to discuss unaccusativity with respect to alternatability of verbs. Finally, I discuss the issue of direction of derivation regarding the Japanese ergative alternation.

2.2 English Ergative Pairs

2.2.1 Syntactic Aspects

It is well known that there are an enormous number of ergative verb pairs in English (Langacker 1991:387). As noted in Chapter 1, the English ergative alternation is expressed in a majority of cases by one single verb with no morphological change. Such identity in form between a transitive use and an intransitive use results in the fact that the distinction in transitivity regarding an ergative verb is discerned solely by virtue of the context where each member occurs (Nedyalkov and Silnitsky 1973:3). More specifically,

only a shift in the valency of verbs' argument structure indicates the difference in transitivity in English. The transitive use of *break* is a case of dyadic valency, consisting of an Agent and a Theme, while the intransitive use represents a monadic valency, taking a Theme argument only. Typologically, alternations in which no changes in verb forms occur between ergative transitives and intransitives are referred to as *labile alternations*. Other languages that predominantly show this alternating pattern include Chinese, German, German, and Greek (Teramura 1982:305, Haspelmath 1993:102).

In addition to the shift in valency just described, the ergative alternation needs to meet the following two conditions. Firstly, the object or “internal argument” of the transitive alternant should always be realized as the subject of the intransitive alternant (Comrie 1985:322). As evident in (3) above, the predicate *break* and the argument *vase* follow this constraint. The rationale for imposing such a constraint on the configurational relation between a predicate and its internal NP argument is that it is necessary to distinguish genuine ergative verb pairs from verbs which undergo the so-called unspecified object alternation (Levin and Rappaport Hovav 1994:37).

- (4) a. Tom smokes cigarettes.
 b. Tom smokes.

At first glance, *smoke* seems to undergo the ergative alternation, given that it alternates in transitivity without any morphological mediator, just like *break*. According to the constraint noted above, however, the transitive and intransitive uses of *smoke* are not eligible for an ergative pair in that the object (*cigarettes*) of the transitive use in (4a) is not realized as the subject of the intransitive use; rather, it is syntactically unexpressed or “unspecified” in the original object position.

Secondly, the object of the transitive alternant and the subject of the intransitive alternant should have an identical thematic role, a thematic and syntactic correlation that Langacker refers to as ‘ergative pattern’ (1991:387; cf. Levin and Rappaport Hovav 1995:79). In a sense, this constraint is self-explanatory given that while Theme arguments are syntactically realized differently, they are both base-generated as internal arguments. Again the internal argument of *break* in (3) meets this requirement: The object (*vase*) of the transitive use in (3a) and the subject of the intransitive in (3b) share the same Theme role. This thematic relation accounts for why *smoke* in (4) fails to constitute an ergative pair; the subject (*Tom*) of the intransitive construction is an Agent, while the object of the transitive is a Theme. Given these observations, the ergative alternation would be schematized as follows:

(5) a. NP₁ V_{tr} NP₂ (transitive construction)

b. NP₂ V_{intr} (intransitive construction)

In short, the process of ergative alternation will be summarized as (1) a shift in valency of the arguments of the verb (2) parallelism between the subject of the transitive construction and the object of the intransitive construction and (3) the preservation of the thematic role assigned to the verb’s internal argument.

2.2.2 Ergative Alternation and Other Similar Syntactic Operations

In the preceding section, we observed that the ergative alternation undergoes a series of syntactic operations such as valency shift and configurational parallelism of arguments. Note that such syntactic behaviors are not restricted to the ergative alternation; rather, they are readily observable in other transformational operations. In this section, we outline syntactic and semantic characteristics of passivization and middle

formation, demonstrating that in spite of striking similarities, the two syntactic formations should be distinguished from the ergative alternation.

2.2.2.1 Ergatives and passives

Passivization is characterized in general as transforming a transitive verb into an unergative (i.e., intransitive), along with advancement of the object of the transitive to the subject of the intransitive (Perlmutter 1978:181ff; cf. Shibatani 1985:822). Put more informally, passivization involves a NP movement from a transitive internal argument position into a passive external argument position whereby the syntactic subject of the passive corresponds to the syntactic object of the transitive. Given this description, Larson (1988:366) argues that passivization and ergative alternation share a crucial parallelism in terms of NP movement, as illustrated below (*t* stands for “trace”)

- (6) a. The boat was sunk *t*.
 b. The boat sank *t*.

I argue that the two syntactic processes should not be considered identical for the following two reasons. Firstly, English passivization necessarily involves an overt, regular morphological change in verbs, whereas the ergative alternation does not. Jaeggli (1986) maintains that in passivization, the role of the passive suffix *-en* is seen as ‘absorbing’ the external theta-role which is originally associated with the external argument of a transitive verb. In this respect, passivization is characterized as the interaction of morphological and syntactic process, while ergative alternation is simply a syntactic process in English.¹

¹ Not every scholar accepts Jaeggli’s formulation of the passive. See Miller (1993:186-8) for his pre-movement string analysis.

Secondly, the ergative alternation is distinct from passivization in that the latter always implies that an Agent that brings about an event can be syntactically indicated in passive structures (cf. Siewierska 1984:78, Roeper 1987:268, Haspelmath 1993:90, Ackema and Schoorlemmer 1994:69). Evidence for this claim is observed in the fact that passives can co-occur with a *by*-phrase, whereas ergative intransitives cannot.

(7) a. The boat was sunk by Bill.

b. *The boat sank by Bill. (Roeper 1987:268)

Even when no *by*-phrase is syntactically present, passives still imply that an Agent is present implicitly. This is exemplified in the following:

(8) a. The ship was sunk to collect the insurance.

b. *The ship sank to collect the insurance. (Roeper 1987:268)

In short, that the passive *be V-en* can co-occur with a purpose infinitive clause as in (8a) substantiates our view that passives invariably posit the presence of agentivity, whether it is overtly expressed or not.

2.2.1.2 Ergatives and middles

Middle formation is a process of suppressing the subject of a transitive and moving the object of the transitive into the subject position of a middle verb, as typically illustrated below (Hoekstra and Roberts 1993:183-184):²

(9) a. Someone bribed the bureaucrats.

b. Bureaucrats bribe easily. (Keyser and Roeper 1984:381).

² Ackema and Schoorlemmer (1995) claim that no movement takes place in middle formation. In their terms, the grammatical subject in middles are base-generated in the VP internal subject position.

(10) a. The butcher cuts the meat.

b. The meat cuts easily. (Levin 1993a:26)

In the examples, sentences (9b) and (10b) are middle constructions and the verbs (*bribe* and *cut*) occurring in these constructions are referred to as middle verbs or simply “middles.”

Numerous studies analyze middle formation in reference to ergative alternation (Fiengo 1980, Keyser and Roeper 1984, Hale and Keyser 1987, Fagan 1988, 1992, Condoravdi 1989, Fellbaum and Zribi-Hertz 1989, Levin 1993a, Fujita 1994, Kitazume 1996, Nakamura 1997). One syntactic characteristic of middle formation has to do with the application of the syntactic rule Move α to the internal argument of a transitive predicate so that the argument is externalized in the middle construction, as illustrated in (9) and (10) above. Furthermore, the thematic role of the internal argument remains the same whether it is in the transitive construction or in the middle construction. Recall that these are among the characteristics involved in the ergative alternation as well.³ Given such similarities, Hale and Keyser (1986, 1987, 1988) maintain that middle formation and ergative alternation are fundamentally identical, providing a single lexical rule for both middle and ergative formations (cf. Fujita 1994:73):

(11) *The Ergative-Middle Alternation*

[x cause [y “undergo change”], (by...)]

<----->

[y “undergo change”, (by...)]

(Hale and Keyser 1987:20)

³ Rapoport (1993:173-4) also points out a semantic similarity between ergatives and middles. Just like ergatives, middles can be observed in verbs which lexicalize a change of state (cf. Chapter 3, Section 3.4.1).

According to Hale and Keyser, the only distinction between the ergative alternation and the middle alternation is that the LCS of the latter contains a means clause as depicted by the parenthesized *by*-phrase (see Chapter 3, Section 3.5 for further discussion of the relationship between means clause and ergative alternatability).

In spite of the similarities just described, substantial evidence has been presented that middles and ergatives are essentially distinct from each other for reasons that follow. Firstly, as Keyser and Roeper (1984) note, middles are stative verbs, meaning that they cannot describe events. Ergatives, on the other hand, are event-verbs. This contrast is illustrated by the fact that middles cannot occur in progressive constructions, while ergatives can.

(12) a. The boat is sinking.

b. *Bureaucrats are bribing easily. (Keyser and Roeper 1984:385)

Keyser and Roeper also suggest that middles cannot occur in situations which describe particular events in time, whereas ergatives can. This is evident in the following example where the ergative *sink* occurs in the past tense, while the middle *bribe* does not.

(13) a. The boat sank in less than an hour.

b. ?Yesterday, the mayor bribed easily, according to the newspaper.

(Keyser and Roeper 1984:384)

Keyser and Roeper observe that (13b) is marginally grammatical since middles only describe situations which are generic or “held to be generally true” (1984:384).

It has been noted in the literature that while ergatives imply no Agent, middles always entail Agent implicitly (Fiengo 1980:57, Keyser and Roeper 1984:404-405, Hale and Keyser 1986:15-16, 1987:18, Condoravdi 1989, Nakamura 1997:119, Fujita

1994:87). By “implicit Agent” it is meant that the middle construction always implies an Agent in the eventuality denoted by the middle verb but the thematic role of Agent can have no phonetic or structural realization.⁴ Put differently, Agent is present semantically but absent syntactically in the middle construction (Nakamura 1997:123; see also Ackema and Schoorlemmer 1994:69).⁵ One way of illustrating that middles express the existence of Agent implicitly but not syntactically is to see if they may co-occur with agent-oriented adjuncts like a *by*-phrase or a *to*-infinitive phrase. The ungrammaticality of the following sentences points to the validity of this statement.⁶

(14) a. *The official bribes easily by managers. (Keyser and Roeper 1984:406)

b. *Bureaucrats bribe easily to keep them happy.

(Keyser and Roeper 1984:407)

In short, the presence of an Agent at the underlying semantic level of middles may crucially differentiate middles from ergative intransitives, which are assumed to involve

⁴ Miller (1993:178) suggests that the implicit argument in middles may well be interpreted as a Benefactive rather than Agent.

⁵ Stroik (1992:131) argues that the Agent role in middles can be expressed syntactically, mainly in an adjunct position as illustrated below:

(i) a. That book read quickly *for Mary*.

b. No Latin text translates easily *for Bill*.

⁶ Keyser and Roeper (1984:407) attribute the ungrammaticality to the notion of “control.” That is, the implicit Agent of middle cannot control the lower clause, making the whole sentence ungrammatical, while the implicit Agent in passive as in (i) below, which is optionally expressible (i.e., *by Bill*), controls the lower clause, making the whole sentence grammatical (Keyser and Roeper 1984:407).

(i) The bureaucrats were bribed (by Bill) to keep them happy.

Given the optionality of *by*-phrase in passives, Keyser and Roeper consider the notion “implicit” to have a different implication for middles and passives, respectively (1984:406).

no identifiable external Agent (Pinker 1989:130; cf. Marantz 1984:180; see Chapter 3 for more detailed discussion of agentivity and ergative verbs).

In summary, we observed that although the ergative alternation resembles passivization and middle formation in a number of ways, the former is crucially distinct from the latter in terms of the presence or/and implication of agentivity. Accordingly, the ergative alternation investigated in the present study exclusively refers to the pattern schematized in (5) above.

2.2.2 Semantic Aspects

Another aspect that needs to be analyzed regarding ergative pairs is a semantic distinction between transitive and ergative members. The semantic relation between ergative pairs has often been represented through the schemata called Lexical Conceptual Structure (LCS) in the literature (Guerssel et al. 1985, Hale and Keyser 1987, Levin and Rappaport Hovav 1995). The LCSs of *break*, for instance, are typically represented as follows:

(15) a. ergative transitive *break*: x CAUSE [y BECOME broken]

b. ergative intransitive *break*: y BECOME broken

What is schematically striking about the LCS of the transitive alternant is its complex structure, consisting of a causing subevent and a central subevent (Hale and Keyser 1987).

One apparent semantic property that distinguishes ergative transitives from ergative intransitives is the presence of CAUSE in the transitive LCS, which is, in a less

technical schematization, paraphrased into ‘cause to *V*-intransitive’ (Parsons 1990:106).⁷ The representation in (15) indicates that the Agent argument *x* is associated with CAUSE, whereas the Theme argument *y* is associated with the state “broken.” Given that CAUSE is not present in the ergative intransitive, uncertainty remains as to how the event denoted by *break* takes place. Most researchers assume that the events denoted by ergative intransitives occur with no intervention of an Agent (Haspelmath 1993, Matsumoto 2000a). In other words, they are perceived to occur spontaneously.⁸ Thus, when we say *The vase broke* in English, the vase just broke on its own accord, meaning that there is no Agent involved in the event.

The view that the ergative intransitive entails no Agent appears to raise a problem. Consider the following sentence:

(16) Tom hit the vase with a bat, and it broke.

Evidently, the example indicates that the breaking of the vase did not occur spontaneously; instead, it is Tom, namely an Agent, who brought about the event. Evidence like (16) seems to suggest that it is necessary to recognize an Agent at the semantic level of the ergative intransitive. Levin and Rappaport Hovav (1995) assume that Agent or Cause is indeed involved in the event denoted by the ergative intransitive. The argument carrying this thematic role is simply invisible syntactically, according to Levin and Rappaport Hovav, because it is unspecified in surface constructions. By

⁷ In light of the presence of CAUSE in the transitive LCS, Pinker (1989) and Levin and Rappaport Hovav (1994, 1995) refer to the alternation typified by *break* as ‘causative (inchoative) alternation.’

⁸ Due to this spontaneous nature of ergative intransitives, they are often referred to as “inchoative.”

underspecification Levin and Rappaport Hovav mean that ergative intransitive constructions can imply the presence of an Agent or a Cause. It is simply that they do not identify the type of the Agent or the Cause (cf. Davidse 1992:109). The unspecification of Agent or Cause characterizing the ergative intransitive also suggests the verb does not lexicalize agentivity or cause. It should be noted here that underlying the claim by Levin and Rappaport Hovav is their view that our real world knowledge makes it difficult to imagine that events like the breaking of a vase would occur without an external cause (1995:93). Their agentive or causative analysis of ergative intransitive is reflected in part in the single causative lexical semantic representation of *break* (cf. Chapter 1) in which ergative intransitives are derived from causative transitives through the process of detransitivization.⁹

Nevertheless, I claim, for the reasons that follow, that an argument can be made for the spontaneity of the ergative intransitive. Firstly, returning to (16), the event (*Tom hit the vase with a bat*) leading to the rupture of the vase is not essential to the ergative intransitive *break*; in other words, it is not a fundamental component of the LCS of ergative intransitive *break*. It follows, therefore, that the Agent *Tom* participating in the event of hitting the vase has no essential involvement in the resultant state of the vase. Secondly, as Levin and Rappaport Hovav (1995:107) note, even if it is claimed that *break* in (16) involves an Agent, the Agent is interpreted, at best, as a passive participant. Based on Levin and Rappaport Hovav's view, I assume that the passive nature of a participant still enables us to conceive the breaking of the vase in (16) as occurring spontaneously

⁹ Researchers such as Oosten (1977), Levin and Rappaport Hovav (1995), and Kageyama (1996) hypothesize that Theme is identified with Agent or Cause in ergative intransitive situations.

(for relationship between passive participant and unspecification of causing event, see Chapter 3, Section 3.4.1.5; see also Levin and Rappaport Hovav 1995:107).

2.3 Japanese Ergative Pairs

2.3.1 Syntactic Characteristics

Ergative pairs are also commonly observed in Japanese. As illustrated above, the English ergative alternation involves the parallelism between the object of a transitive predicate and the subject of an ergative predicate. The same configurational relationship also holds for Japanese ergative pairs where the subject-object correlation is indicated by case-marking rather than word order (Okutsu 1967:49, Miyajima 1972:684, Hayatsu 1987:81, Mitsunobu 1992:85).

- (17) a. Sono otokonoko-ga mado-o wat-ta.
 the boy-NOM window-ACC break-PAST
 ‘The little boy broke the window’
- b. Mado-ga ware-ta.
 window-NOM break-PAST
 ‘The window broke’

Note that the object *mado* in (17a), which is marked with the accusative marker *-o*, is realized as the subject with the nominative marker *-ga* in (17b), forming the object-subject relationship characteristic of the ergative alternation.¹⁰ In addition, the NP *mado*

¹⁰ The correlation between the accusative case marker *-o* and the transitivity of verbs has been discussed by scholars for more than a century. Otsuki (1897), who was strongly influenced by western grammar, first suggested that transitive verbs should take *-o* as the accusative marker. Matsushita (1923:18) further developed Otsuki’s view, maintaining that all verbs that occur with *-o* should be considered transitive (cf. Nomura 1982, Morita 1994, Suga and Hayatsu 1995). Thus, in Matsushita’s view, verbs like *ik-* ‘go’ and *hasir-* ‘run,’ which are usually viewed as intransitive when occurring optionally with the directional particle *-e* or *-ni* ‘to,’ were considered to be transitive verbs when occurring with *-o*.

(i) Waga miti-o iku
 I-GEN way-ACC go

bears the same thematic role (“Theme”) in both constructions, following another criterion on whether a verb is considered to participate in the ergative alternation. Based on the correspondence between (17a) and (17b), Okutsu (1967) provides a configurational template for the Japanese ergative alternation, which is fundamentally identical to the English corresponding template given in (15) above (cf. Suga 1981:122, Jacobsen 1992:60):

- (18) $NP_1-ga\ NP_2-o\ V_{tr}$
 $NP_2-ga\ V_{intr}$

On Okutsu’s view, the subject (NP_1) of a transitive predicate is deleted when a verb undergoes intransitivization and added when a verb undergoes transitivization.

2.3.2 Morphological Characteristics

One key difference between Japanese and English ergative alternating verbs is that the former overtly exhibits a shift in transitivity by means of derivational morphology, as exemplified earlier and repeated below.¹¹

-
- ‘I will go my own way’
(ii) Yamamiti-o hasit-ta
 mountain path-ACC run-PAST
 ‘I ran along the mountain path’

While basically following Matsushita’s proposal, Okutsu (1967) maintains that the verbs in (i)-(ii), which Okutsu subsumes under the category called motion verbs (*idoo-doosi*), should be regarded as intransitive since the case marker *-o* occurring with those verbs is not an accusative case marker but a “directional particle.”

¹¹ A small number of verbs such as *hirak-* ‘open’ and *mas-* ‘increase,’ which Martin (1975) refers to as “ambivalent pairs,” show no morphological distinction between intransitive and transitive uses (cf. Morita 1994:168-170). There are more verbs among Sino-Japanese verbs (cf. Jacobsen 1992), a type of complex verbs made up of Chinese stems and Japanese native verbal suffix *-suru* (e.g., *idoo-suru* ‘move’ and *shuuryoo-suru* ‘end’), which are identical in form regardless of their transitivity. For these ambivalent pairs, transitivity can only be denoted configurationally.

| (19) TRANSITIVE | | INTRANSITIVE | |
|-----------------|----------------|-----------------|----------------|
| <i>Japanese</i> | <i>English</i> | <i>Japanese</i> | <i>English</i> |
| war- | break | ware- | break |
| sizume- | sink | sizum- | sink |
| mage- | bend | magar- | bend |
| tokas- | melt | toke- | melt |
| yak- | bake | yake- | bake |

In other words, while English represents a change in transitivity by syntactic means alone, Japanese marks the same process morphologically as well as syntactically (Teramura 1982:305).¹² While the number varies from scholar to scholar, there are numerous morphologically-related ergative pairs in Japanese. While Jacobsen (1992) provides a list of about 371 verbs, Hayatsu (1989) identifies almost 600 ergative pairs in the Japanese lexicon.

It has been noticed that morphological distinctions as observed in (19) are not inconsistent. Rather, most of the ergative pairs in Japanese are found to follow certain regular derivational patterns, which are fairly discernible and are limited in number. In view of this fact, one of the main goals of investigating Japanese ergative pairs has been to identify the derivational patterns and classify them accordingly (cf. Shimada 1979).

¹² The morphological oppositions characterizing Japanese ergative pairs date back to Old Japanese (cf. Shimada 1979, Kageyama 1996:179-180, Komatsu 1999). While several derivational suffixes have undergone phonetic changes over time, the changes are highly consistent. For instance, many of the intransitive members with the ending *-e(r)* paired with the transitive *-(y)as-* (Jacobsen's Class IX) used to be spelled *-yu*. Thus, the modern Japanese ergative pair *hier-/hiyas-* was *hiy-/hiyas* in Old Japanese. Komatsu (1999:101) notes that the *-yu* intransitives implied that events occur spontaneously, whereas the *-(y)as-* transitives indicated that events are brought about by intentional agents. Kageyama (1996) speculates that ergative pairs in Old Japanese might have held closer links between affixal forms and their semantic functions (cf. Dubinsky 1985:259). According to Kageyama, the pair *tumor-/tum-*, which we considered to have opaque semantic links (Chapter 4), might have had a closer semantic correlation.

Shibatani (1990), for instance, provides a five-group classification of ergative pairs as below.¹³

| (20) | INTRANSITIVE | TRANSITIVE |
|---------|--|--|
| Group a | <i>ar</i> | <i>e</i> |
| | agar- ‘rise’ atumar- ‘gather’ tamar- ‘accumulate’ | age- ‘raise’ atume- ‘gather’ tame- ‘accumulate’ |
| Group b | <i>f</i> | <i>e</i> |
| | ak- ‘open’ itam- ‘be damaged’ ukab- ‘float’ | ake- ‘open’ itame- ‘damage’ ukabe- ‘float’ |
| Group c | <i>e</i> | <i>as</i> |
| | are- ‘be ruined’ okure- ‘be late’ ta(y)e- ‘be extinct’ | aras- ‘ruin’ okuras- ‘postpone’ ta(y)as- ‘annihilate’ |
| Group d | <i>f</i> | <i>as</i> |
| | wak- ‘boil’ nak- ‘cry’ kusar- ‘spoil’ | wakas- ‘boil’ nakas- ‘make cry’ kusaras- ‘spoil’ |
| Group e | <i>e</i> | <i>f</i> |
| | hage- ‘tear off’ ore- ‘be broken’ sake- ‘split’ | hag- ‘tear off’ ¹⁴ or- ‘break’ sak- ‘split’ |

One question that classifications like those above inevitably pose is whether particular suffix forms reflect verbs’ transitivity; in other words, is it possible to predict

¹³ Most recently, Jacobsen (1992) proposes a sixteen group of ergative pairs in Japanese (see Appendix; cf. Chapter 4).

¹⁴ Morita (1994:166) and Kageyama (1996:180-1) note that the pair *hage-/hag-* is made more complicated due to another semantic and morphologically similar pair *hagare-/hagas-* ‘tear off.’ Other multiple pairs like *hage-*, *hagare-/hag-*, *hagas-* include *tizim-*, *tizimar-/tizimer-*, *tiziras-* ‘shrink_{vi}/shrink_{vt}’, *usure-*, *usurag-*, *usumar-/usumer-* ‘weaken_{vi}/weaken_{vt}.’

merely by suffixal form whether each member of a given pair is transitive or intransitive? If this is the case, then it follows that the significance of syntactic configuration will be enormously diminished in dealing with the ergative alternation in Japanese. The classification in (20) seems to suggest that there is such a relationship between suffixal form and transitivity. That is, the suffixes *-ar* in Group (20a) and *-as* in Group (20c, d) are constantly associated with intransitive and transitive, respectively.

The correspondence between suffix form and transitivity just described does not always hold for all groups of Japanese ergative pairs. As pointed out by Okutsu (1967), Jacobsen (1992), and among others, the suffix *-e* exhibits a conflicting behavior in terms of transitivity. That is, it functions as a transitivizer in Group (20b), and as an intransitivizer in Group (20d). Such conflicting functions associated with *-e* naturally make the transitivity of a given verb containing the suffix unpredictable. Jacobsen (1992) exemplifies this point by providing a hypothetical Japanese verb pair *harik-* and *harike-*. Given that *-e* can be either a transitivizing or an intransitivizing suffix, there is simply no telling which form of the pair is transitive. In fact, the inconsistent behavior of the suffix seems to have puzzled researchers who attempted to prove an inherent relationship between suffix form and transitivity.¹⁵ At the very least, the dual functions of the suffix *-e* suggest that the transitivity of morphological pairs is not completely predictable from the form of a derivational suffix.¹⁶ This in turn suggests that the syntactic configuration in

¹⁵ Kitagawa and Fujii (1999), while emphasizing the regularity of the derivational process of morphological pairs in most of Jacobsen's classes, had to adopt a semantic approach to the morphological pairs in Group (b) and (d) in order to elucidate their elusive behaviors.

¹⁶ The different morpho-semantic behaviors observable between *-as* and *-e* might be better explained under Aronoff's view of structural transparency and semantic coherence (1976:20-21; cf. Tyler 1999:80). In keeping with his terminology, it might be argued that

(18) above still plays an important role in determining the transitivity of ergative pairs in Japanese.

Additionally, this research project raises a question of semantic coherence between morphologically-related verb pairs. Specifically, I propose to attempt to determine whether or not morphological oppositions reflect changes in the semantics of the pairs. As Chapter 4 will demonstrate, numerous modern Japanese ergative pairs hold little or no semantic affinity. This indicates that shared verb stems between ergative pairs do not necessarily mean that the pairs are semantically correlated. As Ichihashi (1992:18-19) points out, ergative pairs like *ak-* ‘open’ vs. *akas-* ‘reveal’ and *bake-* ‘disguise oneself’ vs. *bakas-* ‘bewitch’ are hardly considered semantically related. I will demonstrate later that such semantically tenuous pairs are ubiquitous in the Japanese ergative pairs. Given this fact, the present study focuses mainly on Japanese ergative pairs whose shared verb stems hold semantic affinity.

To summarize, I will refer to morphologically-related Japanese verb pairs as ergative pairs only when they (1) share a common root, (2) hold very close semantic affinities, and (3) have the same noun phrase as the subject in the intransitive construction and the object in the transitive construction (cf. Hayatsu 1987, Ichihashi 1992:18-19).

transitive verbs containing *-as* are not structurally transparent. In other words, there is no rule for determining which variant should be attached to its verb stem, but these variants are considered semantically transparent because they are always associated with transitive meanings. In contrast, verbs containing a non-variant suffix *-e* might be said to be structurally transparent. They are not, however, semantically coherent because no constant semantic association can be attributed to this suffix.

2.4 Ergative Alternation: Issues

Several issues have been raised surrounding the ergative alternation (cf. Levin 1985:18). One has to do with whether the ergative alternation involves a lexical rule or syntactic rule (Keyser and Roeper 1984; cf. Chapter 4, Section 4.3). Another question that needs to be addressed is whether verbs which alternate in transitivity consist of a single lexical entry or two separate lexical entries (Pinker 1989:71-72). Furthermore, the direction of derivation involving the ergative alternation has also been discussed in the literature (Comrie 1985, Croft 1990, Dixon 1991, Jacobsen 1985, Haspelmath 1993).

While those issues call for further investigation, the present chapter is more concerned with the obvious fact that not all verbs participate in the ergative alternation. More specifically, there are intransitive verbs which do not occur in transitive constructions and transitive verbs which do not occur in intransitive constructions (Pinker 1989:130; cf. Ritter and Rosen 1998). As mentioned previously, the intransitive verb *laugh* cannot be used transitively in English.

(21) a. Tom laughed.

b. *Bill laughed Tom. (on the interpretation “Bill caused Tom to laugh”)

Along the same lines, the transitive verb *destroy* lacks its anti-causative, intransitive counterpart.

(22) a. The storm destroyed the house.

b. *The house destroyed. (on the interpretation “The house came to the state of being destroyed”)

The most common way to grammatically achieve the interpretation as instantiated within the parenthesis in (22b) is to use a passive construction.¹⁷

(23) The house was destroyed.

Given (22) and (23), the obvious question is why verbs vary regarding their alternatability. As will be discussed in Chapter 3, I will follow Wasaw (1985), Pinker (1989), and Levin and Rappaport Hovav (1995), among others, in suggesting that the syntactic behaviors of verbs are to a large extent dependent on the semantics of the verbs. Moreover, given that verbs that participate in the ergative alternation belong to the same semantic classes across languages (Levin 1985:22), it is important to conduct a thorough analysis of languages other than English to corroborate this admittedly expansive generalization. My ultimate goal is to find whether the semantics-syntax approach proposed for the English ergative pairs can be adapted to Japanese ergative pairs.

2.5 Unaccusativity

It has been noted in the literature that unaccusativity plays an important part in the ergative alternation (Levin and Rappaport Hovav 1995, Arad 1998). The effect of unaccusativity on the ergative alternation is discerned most noticeably in the fact the intransitive members of ergative pairs are usually identified as “unaccusative” (Borer and Wexler 1987:158, Tsujimura 1990b:935, 1996:323-4, Levin and Rappaport Hovav, 1995:80, Ono 1997:168).¹⁸ This seems to suggest that a close examination of

¹⁷ D. Gary Miller (p.c.) pointed out to me that *The house self-destructed* would be another way to express the same meaning inchoatively.

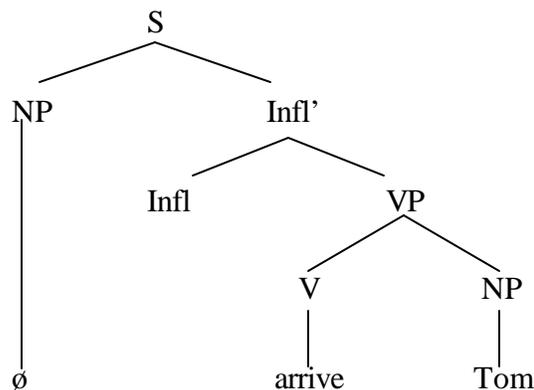
¹⁸ In keeping with Perlmutter (1978) and others, I utilize the term unaccusative in the current section regardless of whether unaccusative verbs alternate with transitive uses.

unaccusativity may help us better understand the mechanism of the ergative alternation. In this section I first review the syntactic and semantic characteristics of unaccusatives. And then I discuss how the semantic properties associated with unaccusativity may account for the ergative alternation system in English and Japanese.

2.5.1 The Unaccusativity Hypothesis

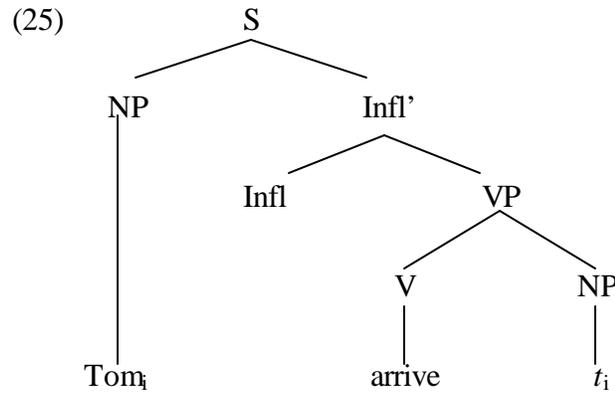
In 1978 Perlmutter proposed that intransitive verbs do not constitute a homogeneous group but instead consist of two distinct types of verbs: unergative and unaccusative verbs. Under the theory of the Unaccusative Hypothesis, Perlmutter maintained that the arguments that are subjects of unaccusative verbs such as *arrive* and *fall* are in fact objects at the initial level of representation. On a Government-Binding approach, unaccusative verbs are assumed to generate their sole argument as the direct object in D-structure. Following Burzio's generalization that the unaccusative verbs fail to assign case to their internal argument in D-structure (Burzio 1986, cf. Grimshaw 1987), *Tom* in (24) is considered an argument without case.

(24) Unaccusative Verb: *arrive*



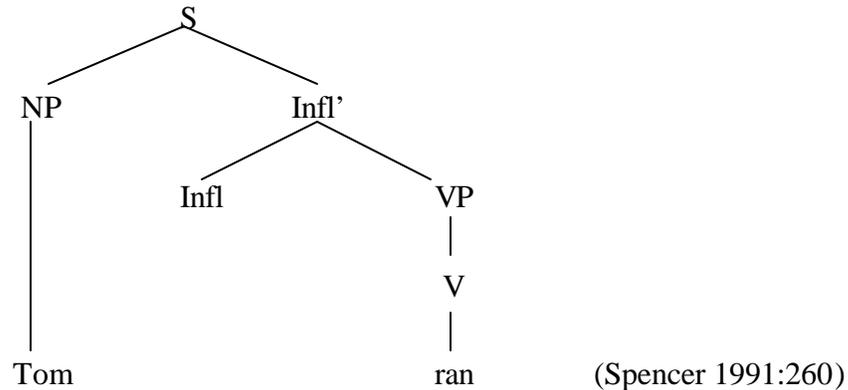
(Spencer 1991:260)

For the purpose of acquiring a subject case, *Tom* moves to the position external to VP, which is unoccupied in the underlying structure.



On the other hand, unergative verbs such as *run* or *laugh* have their argument in the subject position at both levels (i.e. D- and S-structures). As a consequence, the type of movement as illustrated in (25) does not occur to the unergative verb *run* in (26) since the NP *Tom* originates in the subject position in D-structure:

(26) Unergative Verb: *run*



The split intransitivity just described is observable across languages. In particular, for the purpose of demonstrating the universality of unaccusativity, a number of unaccusative

diagnostics have been proposed in different languages.¹⁹ In what follows, we look at how unaccusativity is represented in English and Japanese.

2.5.2 Unaccusative Verbs in English

As discussed in the preceding section, the distinction between unaccusativity and unergativity is summarized broadly as the former having an underlying object and the latter having an underlying subject (cf. Levin and Rappaport Hovav 1995:3). In this section we examine English split intransitivity, focusing on diagnostics which reflect the differing underlying argument structures of unaccusativity and unergativity.

In keeping with the view that unaccusativity is observed cross-linguistically, several diagnostics have been proposed in English (L. Levin 1988, Levin and Rappaport Hovav 1992a). In particular, the resultative construction is considered in the literature to be a diagnostic which provides evidence that the surface subject of the unaccusative verbs is in fact the underlying object (Simpson 1983, Levin and Rappaport 1989, Kageyama 1996). It is well known that unaccusative verbs can occur in the resultative construction, whereas unergative verbs do not, as illustrated below:

- (27) a. The vase broke into pieces.
 b. *Tom talked hoarse. (on the interpretation ‘After Tom talked too much, his voice became hoarse.’)

Sentence (27a) is grammatical in that the resultative attribute (*into pieces*) is predicated of the subject (*the vase*). In contrast, sentence (27b) is ungrammatical in that the attribute *hoarse* cannot form a resultative relationship with the subject *Tom*. The only way sentence (27b) can be grammatical is when the attribute *hoarse* is not resultative but

¹⁹ For instance, Impersonal Passivization in Dutch (Perlmutter 1978) and *Ne*-cliticization in Italian (Burzio 1986) are such diagnostics.

descriptive on the interpretation of ‘Tom talked, while his voice was hoarse.’ Given the contrast in (27), Simpson (1983:146) argues that:

The controller of a resultative attribute must be an OBJECT, whether that object is a surface OBJECT, as in transitive verbs, or an underlying OBJECT, as in passives and intransitive verbs of the Unaccusative class.

What is noticeable about Simpson’s view is that the parallelism between a controller and an OBJECT agrees with the view that the subject of an unaccusative verb is invariably the underlying object. Thus, the subject *vase* in (27a) is considered to originate in the internal position where it serves as a controller juxtaposed to the attribute (*into pieces*). The underlying syntactic configuration between *vase* and the verb *break* will be indirectly illustrated by the transitive construction involving the verb *break*, as illustrated in (28) below.

(28) Tom broke the vase into pieces.

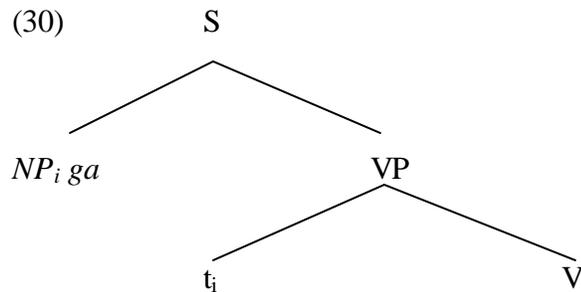
Another unaccusative diagnostic that appear to point to the underlying structure of the unaccusativity verb is adjective passive formation (Grimshaw 1987:245, Levin and Rappaport 1986, 1989:327).

- (29) a. fallen leaves
 (cf. Leaves fell on to the ground)
- b. the stolen car
 (cf. The car was stolen)
- c. *the walked man
 (cf. The man walked along the beach)

Levin and Rappaport (1989:327) point out the correspondence between unaccusative subjects and transitive objects, maintaining that adjectival passives are predicated of both unaccusative subjects and transitive objects, but not of unergative and transitive subjects.

2.5.3 Unaccusative Verbs in Japanese

It is maintained that as in English, sentences containing unaccusative verbs involve movement of an internal argument in Japanese (Miyagawa 1989a:23; cf. Kageyama 1993:46). As described earlier, the internal argument of an English unaccusative verb, which occurs within a VP, has its thematic role Theme assigned directly by the verb. Since the verb fails to assign case to any internal argument, the NP moves to the position external to the VP in order to acquire a subject case via inflection. The same is true of Japanese unaccusatives as well, except for the fact that in Japanese the moved NP is overtly marked with the case marker *-ga*. The template of Japanese unaccusativity is diagrammed as follows (Miyagawa 1989a:85):



In (30), the NP is first assigned the thematic role Theme by an unaccusative verb (V). Since the V assigns no case (Miyagawa 1989a:89), the NP moves to the subject position to receive case, leaving a trace behind. As will be discussed in more detail later, it is important to ensure that the NP in (30) has already received its thematic role Theme from the verb inside the VP prior to the movement, since the case marker *-ga* is incapable of assigning a thematic role

Evidence that unaccusativity also exists in Japanese has been presented in the literature (Tsujimura 1991, Miyagawa 1989a, Kageyama 1996). At least two unaccusative diagnostics appear to have direct relevance to Japanese ergative pairs. The

first diagnostic concerns Numeral Quantifiers (NQ) and the constraints on their correlation with NP referents. The Japanese NQ consists of a numeral and a classifier (CL; e.g., *-satu* for ‘book,’ *-nin* for ‘person,’ etc.), usually placed after an NP that is counted.

- (31) a. Taroo-wa hon-o **ni-satu** kat-ta.
 Taro-TOP book-ACC two-CL buy-PAST
 ‘Taro bought two books.’
- b. Tomodati-ga **san-nin** uti-ni ki-ta.
 Friend-NOM three-CL (my) house-to come-PAST
 ‘Three friends came to my house.’

Miyagawa (1989a) postulates that the NP and the NQ constitute syntactically separate phrases; in other words, the NQ is neither a specifier nor a complement of the NP.

Furthermore, the NQ is not an argument of the verb in that the verb does not assign a thematic role to it. Rather, the relation between the NP and the NQ is more like that of predication in which the NQ is predicated of the NP (Miyagawa 1989a:22). In this respect, the NQ is analogous to a small clause like *raw* in the following sentence, where *raw* is predicated of its antecedent *meat* (cf. Williams 1980).

- (32) John ate the meat **raw**. (Miyagawa 1989a:22)

In order to form a proper predication relationship, the NQ and the NP should always be in a mutual c-command relation (Miyagawa 1989a:27ff). This is illustrated in the following examples:

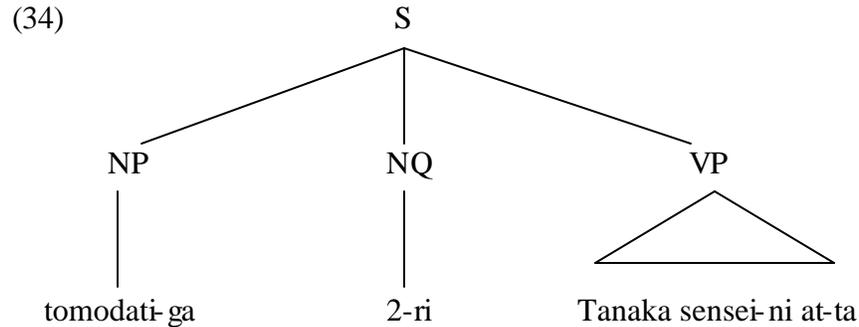
- (33) a. Tomodati-ga 2-ri Sinzyuku-de Tanaka-sensei-ni at-ta
 friend-NOM 2-CL Shinjuku-in Prof. Tanaka-DAT meet-PAST
 ‘Two friends met Professor Tanaka in Shinjuku.’

(Miyagawa 1989a:28)

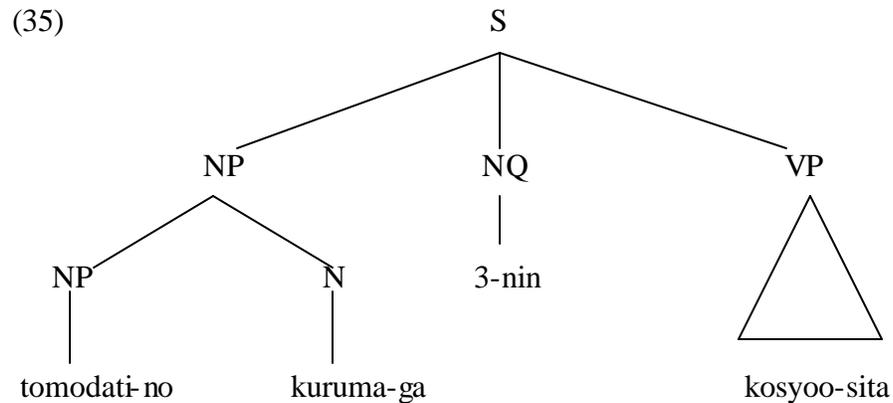
- b. *Tomodati-no kuruma-ga 3-nin kosyoo-sita
 friend-GEN car-NOM 3-CL broke down
 ‘Three friends’ car broke down’

(Miyagawa 1989a:29)

In sentence (33a), the NQ *2-ri* ‘two’ and its referent NP *tomodati* ‘friend’ are in a mutual c-command relation outside the VP. The relation is diagrammed as below (Miyagawa 1989a:29):



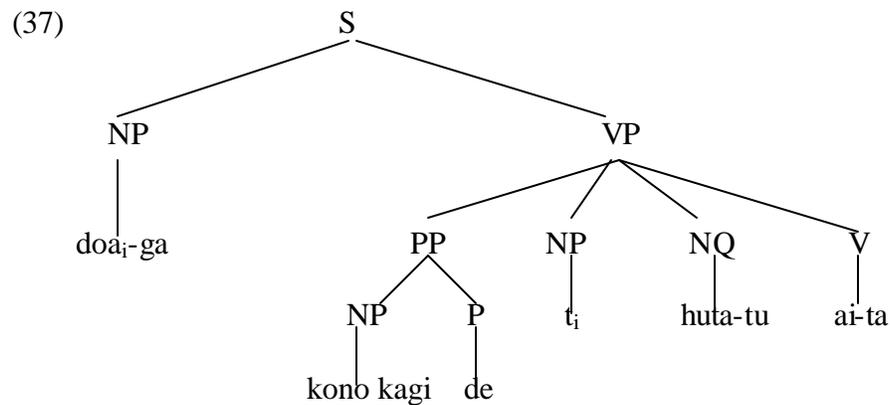
By contrast, *tomodati* and *san-nin* in sentence (33b) do not form a mutual c-command relationship because *tomodati* fails to c-command *3-nin*. This is illustrated in the following tree diagram (Miyagawa 1989a:30):



It is interesting to note, however, that there are some cases in which the mutual c-command does not seem to obtain for the relation between an NQ and its referent in Japanese. For instance, the following example shows that the NP *doa* ‘door’ and the NQ *huta-tu* ‘two’ are not in a mutual c-command relation because the VP (*kono kagi-de huta-tu ai-ta*) that dominates the NQ does not dominate the NP. Nevertheless, sentence (36) is grammatical.

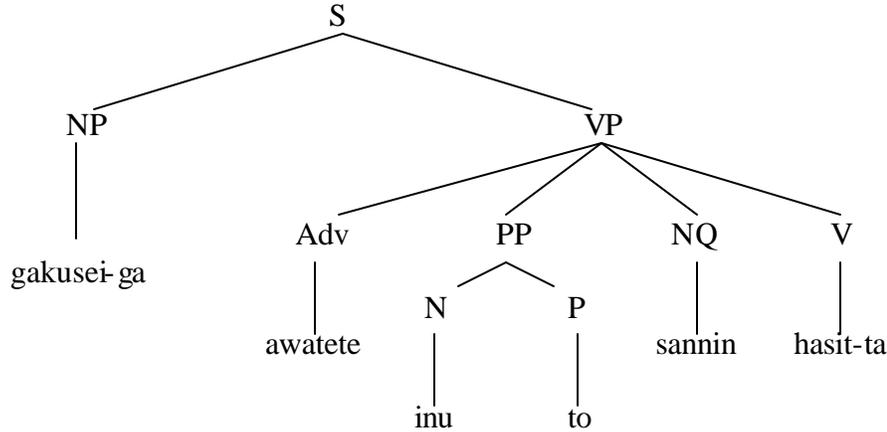
- (36) *Doa-ga* [_{VP} *kono kagi-de huta-tu ai-ta*]. (< *ak-* ‘open’ + *ta*)
 door-NOM this key-with two-CL open-PAST
 ‘Two doors opened with this key.’ (Miyagawa 1989a:43)

Miyagawa explains the grammaticality of (36) by hypothesizing that the NP *doa* ‘door’ originates inside the VP and leaves a trace after moving outside the VP. It is this trace, according to Miyagawa, that enables the NP *doa* and the NQ *huta-tu* ‘two’ to form a mutual c-command relation. The tree diagram of this derivation is illustrated as follows (Tsujimura 1996:272):



The grammaticality of sentence (36) implies that the verb *ak-* ‘open’ is an unaccusative verb. Such mutual c-command relationship between a NP trace and an NQ does not obtain for unergative verbs like *hasir-* ‘run’ as diagramed below (Tsujimura 1996:273-4):

- (38) **Gakusei-ga* [_{VP} *awatete inu-to sannin hasit-ta*].
 student-NOM hurriedly dog-with 3-CL run-PAST
 ‘Three students ran hurriedly with the dog.’



In (38), the subject NP *gakusei* ‘student’ originates and remains in the position external to the VP, preventing itself from forming a mutual c-command relation with the referent NQ *sannin* ‘three.’

Resultative constructions also serve as a diagnostic of Japanese unaccusativity (Tsujimura 1991). As with English, the controllers of resultative attributes can be predicated of the subjects of unaccusative verbs as well as the objects of transitive verbs in Japanese (Tsujimura 1991:97).

- (39) Hanako-no kami-ga_i [_{vp} t_i nagaku nobi-ta].
 Hanako-GEN hair-NOM long grow-PAST
 ‘Hanako’s hair grew long’

The subject NP *kami* ‘hair’ in (39), which is marked so with *-ga*, is linked to its trace inside the VP. Thus, it follows from the generalization given above (Section 2.5.3) that the resultative attribute *nagaku* ‘long’ is predicated of the underlying OBJECT *kami*. On the other hand, as expected from the behavior of the English verb *talk* as described above, the Japanese equivalent *hanas-* ‘talk’ does not occur in resultative constructions.

- (40) *Taroo-wa [_{vp} kutakuta-ni hanasi-ta].
 Taro-TOP exhausted talk-PAST
 ‘Taro talked exhausted’

Since the subject (*Taro*) is a base-generated subject, it violates Simpson's requirement that the controller should be OBJECT. Thus, sentence (40) proves to be ungrammatical.

Based on the unaccusative diagnostics just described, given below are Japanese intransitive verbs which are identified as unaccusative in the literature (Miyagawa 1989a:43, 97-99, Tsujimura 1990a:283, 1990c:264, 1996:276, 323).²⁰

| | |
|---------------------|---------------------|
| (41) simar- 'close' | ak- 'open' |
| koware- 'broke' | taore- 'fall' |
| katamar- 'solidify' | ku- 'come' |
| hair- 'enter' | agar- 'go up, rise' |
| tuk- 'arrive' | kuzure- 'collapse' |
| kire- 'be cut' | more- 'leak' |
| toke- 'melt' | tamar- 'accumulate' |
| ware- 'break' | suber- 'slide' |
| kie- 'turn off' | ukab- 'float' |
| tuk- 'turn on' | de- 'come out' |
| ik- 'go' | oti- 'fall' |
| kaer- 'return' | tat- 'depart' |
| korogar- 'roll' | hazum- 'bounce' |

To summarize this section, we have observed that a range of diagnostics both in English and Japanese has attested to the view of split intransitivity. Note, however, that these diagnostics in essence reflect the fact that the distinction between unaccusative and unergative is syntactically coded (cf. Levin and Rappaport 1989:9). In other words, these diagnostics do not tell us what semantic aspects, if any, of verbs result in such different syntactic behaviors. As will be discussed below, Perlmutter (1978:161) had already suggested that the distinction between unaccusative and unergative can be explained semantically (for further work on semantic implications of unaccusativity, see Levin

²⁰ Kishimoto (1996:264-5) gives the following additional list of unaccusative verbs: obore- 'be drowned,' sin- 'die,' umare- 'be born,' nemur- 'sleep,' tissoku-suru 'smother,' hurue- 'tremble,' kuru- 'go wrong,' kom- 'be crowded,' moe- 'burn,' yowar- 'weaken,' katamuk- 'lean,' mahi-suru 'paralyze,' nak- 'cry,' korob- 'fall down,' kumor- 'get cloudy,' naor- 'heal.'

1985). In the section that follows, I will conduct a semantic analysis of split intransitivity, suggesting that the unaccusative/unergative distinction is characterizable semantically as well as syntactically.

2.5.4 Semantic Characterization of Unaccusativity

In the preceding section, I have demonstrated that the subjects of unaccusative verbs originate in the object position at the underlying level both in English and Japanese. In so doing, I outlined several diagnostics which are proven to attest to split intransitivity. One difficulty, however, with the analysis of unaccusativity on the basis of such diagnostics has to do with the fact that unaccusative diagnostics in general depict the core structure of unaccusative verbs (e.g., [collapse tent]) in indirect ways. In other words, all these diagnostics deal with deep unaccusativity, where the argument appears only in the subject position (cf. Bresnan and Zaenen 1990).

There are, however, some diagnostics that seem to point to surface unaccusativity in English (Levin and Rappaport Hovav 1995:19):

- (42) a. There appeared a ship on the horizon.
 b. Into the room came a man.

Sentences (42a-b) are examples of *there*-insertion construction and locative inversion, respectively (L. Levin 1988, Hoekstra and Mulder 1990). Note that both diagnostics overtly indicate the original position of the internal arguments (*ship* and *Tom*) of the unaccusative verbs (*appear* and *came*). Given (42), one may well claim that unaccusativity is indeed a syntactic phenomenon, which makes no semantic account necessary (cf. C. Rosen 1984). The problem with the surface unaccusative diagnostics, however, is that they are applicable to a limited number of unaccusative verbs. For

instance, the ergative intransitives *melt* permits neither *there*-insertion construction nor locative inversion.

(43) a. *There melted lots of ice that morning. (L. Levin 1988:23)

b. *On the streets of Chicago melted a lot of snow.

(Levin and Rappaport Hovav 1995:224)

Another problem with unaccusative diagnostics has to do with inconsistency with respect to the selection of unaccusative and unergative verbs. Levin and Rappaport Hovav (1995:13) suggest that different unaccusative diagnostics may bring about a conflicting result as to whether a given verb is unergative or unaccusative. For instance, as discussed by Borer (1998:61), the Dutch unaccusative verb *vallen* ‘fall’ can occur with the unaccusative diagnostic impersonal passive if the verb is provided with the additional meaning of “intention” (see Levin and Rappaport 1989 for further discussion of unaccusative mismatch).

In view of the syntactic uncertainty involving unaccusativity just described, Van Valin (1990) argues that the unaccusative-unergativity distinction is better explained semantically (cf. Tsujimura 1994a, Kishimoto 1996). In fact, Perlmutter had initially suggested the possibility of explaining the unaccusative-unergativity distinction semantically, stating that “[I]nitial unergativity vs. unaccusativity is predictable from the semantics of the clause” (1978:161; cf. Van Valin 1990:221). In 1984, Perlmutter and Postal formulate the Universal Alignment Hypothesis, assuming that semantically-characterizable verbs of unaccusative type in one language are also unaccusative in all other languages (cf. Mulder and Wehrmann 1989:117):

(44) *Universal Alignment Hypothesis*

There exist principles of universal grammar which predict the initial relation borne by each nominal in a given clause from the meaning of the clause

(Perlmutter and Postal 1984:97)

Building on the hypothesis, Perlmutter and Postal categorize English unergative and unaccusative verbs semantically as follows (1984:98-99):

(45) Unergative verbs

a. *Predicates describing willed or volitional acts:*

work, play, speak, talk, smile, grin, frown, grimace, think, meditate, cogitate, daydream, skate, ski, swim, hunt, bicycle, walk, skip (voluntary), jog, quarrel, fight, wrestle, box, agree, disagree, knock, bang, hammer, pray, weep, cry, kneel, bow, courtesy, genuflect, cheat, lie (tell a falsehood), study, whistle (voluntary), laugh, dance, crawl, etc.

Manner-of-speaking verbs:

whisper, shout, mumble, grumble, growl, bellow, blurt out, etc.

Predicates describing sounds made by animals:

bark, neigh, whinny, quack, roar (voluntary), chirp, oink, meow, etc.

b. *Certain involuntary bodily process*²¹

cough, sneeze, hiccup, belch, burp, vomit, defecate, urinate, sleep, cry, weep, etc.

(46) Unaccusative verbs

a. *Predicates expressed by adjectives in English:*

a very large class, including predicates describing sizes, shapes, weights, colors, smells, states of mind, etc.

b. *Predicates whose initial unclear term is semantically a Patient:*

burn, fall, drop, sink, float, slide, slip, soar, flow, ooze, seep, trickle, drip, gush, hang, sway, wave, tremble, shake, languish, thrive, drown, stumble, roll, succumb, dry, blow away, boil, seethe, lie (involuntary), sit (involuntary),

²¹ If bodily processes are perceived as involuntary, they might well be unaccusative (cf. Miller 1993:66).

Inchoative:

melt, freeze, evaporate, vaporize, solidify, crystallize, dim, brighten, redden, darken, yellow, rot, decompose, germinate, sprout, bud, wilt, wither, increase, decrease, reduce, grow, collapse, dissolve, disintegrate, die, perish, choke, suffocate, blush, open, close, break, shatter, crumble, crack, split, burst, explode, burn up, burn down, dry up, dry out, scatter, disperse, fill, vanish, disappear, etc.

c. *Predicates of existing and happening:*

exist, happen, transpire, occur, take place, and various inchoatives such as arise, ensue, result, show up, end up, turn up, pop up, vanish, disappear, etc.

d. *Involuntary emission of stimuli that impinge on the senses:*

shine, spark, glitter, glisten, glow, jingle, clink, clang, snap (involuntary), crackle, pop, smell, stink, etc.

e. *Aspectual predicates:*

begin, start, stop, cease, continue, end, etc.

f. *Durative:*

last, remain, stay, survive, etc.

In general, unergative verbs appear to reveal a unified, constant characteristic: a majority of them, with the exception of verbs of involuntary bodily process, involve volition, or ‘agentivity’ of the argument.²² By contrast, the argument of the unaccusative entails no agentivity (Dowty 1991:605ff, Borer 1994:21). More importantly, however, the thematic role ‘Patient’ in (46b) indicates that unaccusativity involves ‘change of state or location’ as one of its key semantic properties. In particular, it is readily noticed that the inchoative verbs are associated with this semantic property (cf. Levin and Rappaport Hovav 1995:80). As will be discussed in more detail later in Chapter 3, change of state plays a crucial role in determining not only unaccusativity of verbs but also the ability of verbs to alternate in transitivity.

²² Dowty (1991:607) characterizes volition as involving ‘sentience.’

Another semantic property that appears to have been noticed in the recent literature as a defining characteristic of unaccusativity is that of aspect. In particular, telicity or a natural endpoint in time, which typically characterizes the aspectual classes of Achievements and Accomplishments, is also considered to characterize unaccusativity (McClure 1990, Dowty 1991:607, Levin and Rappaport Hovav 1992a:260, 1995:166-7, Tsujimura 1996:329, Arad 1998).²³ The correlation between unaccusativity and telicity is demonstrated in part by the fact that most of the unaccusatives do not combine with adverbials of duration like *for an hour*.

(47) a. *Tom arrived for an hour.

b. *The accident happened for an hour.

By contrast, unergatives, which are characterized as atelic, are compatible with the same adverbial phrase.

(48) a. Tom walked for an hour.

b. Tom cried for an hour.

The telic nature of unaccusativity is also observed in Japanese. Tsujimura (1991:97) points out that the Japanese aspectual marker *-te iru* means resultative state when occurring with unaccusative verbs, whereas it means progressive when occurring with unergative verbs. Thus, as illustrated below, the accusative predicate *ai-te iru* (< *ak-* ‘open’ + *te iru*) expresses a resultative state.

(49) Mado-ga zenbu ai-te iru.
 window-NOM all open-ASP
 ‘All the windows are open’ (Tsujimura 1991:98)

²³ Tenny (1987, 1994) uses the term “delimitedness” rather than telicity to describe the same aspectual situation. Arad (1998:18) estimates that 95% of unaccusatives are telic.

By contrast, the unergative predicate *arui-te iru* (< *aruk-* ‘walk’ + *te iru*) expresses progressive.

- (50) Masao-wa ima eki-no mae-o arui-te iru.
 Masao-TOP now station-GEN in front of walk-ASP
 ‘Masao is walking in front of the station now’

(Tsujimura 1991:98)

Interestingly enough, if unergatives co-occur with adverbials that designate the endpoint (i.e., telicity) of the activities denoted by the verbs, then the *-te iru* constructions with such unergatives no longer express progressive but rather resultative state (cf. Tsujimura 1991:104).

- (51) Masao-wa go-mairu arui-te iru.
 Masao-TOP five miles walk-ASP
 ‘Masao has walked five miles’

Examples (50) and (51) seem to show that telicity has to do with the distinction between unaccusativity and unergativity in Japanese (the issue of aspect in relation to unaccusativity will be discussed in more detail in Chapter 5).

2.5.5 Unaccusativity and Ergative Alternation

As mentioned at the beginning of this section, many of the intransitive alternants of the English ergative alternating verbs are identified with unaccusative verbs. Arad (1998:13) further assumes that the ability of verbs to participate in the ergative alternation serves as one of the unaccusative diagnostics (cf. Levin and Rappaport Hovav 1995:31). This is readily illustrated by the intransitive verbs of the following alternating pairs, which are found in the list of the unaccusative verbs in (46) above.

- (52) a. Tom broke the vase.
 The vase broke.
 b. The heat melted the ice in no time.
 The ice melted in no time.

- c. Tom opened the door.
The door opened.

If the contention that the intransitive members of ergative pairs are unaccusative is correct, then one may well say that the ergative alternation overtly shows the underlying position of the single argument of the unaccusative verb. Thus, the transitive alternants in (52a-c) can be claimed to show the position where the subject of the unaccusative verb is assumed to originate. Furthermore, if we follow the view that the intransitive *break* is unaccusative, then the transitive construction could serve as evidence that the subject of an unaccusative verb is identified as an internal argument, originating in the object position.

While most of the intransitive alternants of the ergative alternating verbs are unaccusatives, it is nevertheless important to note the fact that not all the unaccusative verbs participate in the alternation (Grimshaw 1987:251, Pinker 1989:42-43, Ono 1997:168). In other words, only a subset of the unaccusative verbs can alternately occur in transitive constructions. Pinker lists the following verbs as unaccusatives which do not causativize (1989:42-3):

(53) fall, come, appear, arrive, enter, ascend, die, vanish, exist

Additionally, among the unaccusative verbs given in (45) above, the following seem to fail to enter into the ergative alternation (cf. Pinker 1989:131-132, Levin 1993a):²⁴

²⁴ Some of the non-alternating unaccusative verbs may be used as transitive verbs depending on the meaning.

- (i) a. The sun shines.
b. *The scientists shines the sun
(ii) a. The flashlight shines.
b. Tom shines the flashlight.

D.G. Miller (p.c.) points out that since the verbs in (i) and (ii) have different past tense forms (*shone* and *shined* respectively), they should be considered different verbs.

- (54) soar, flow, ooze, seep, trickle, gush, tremble, languish, flourish, thrive, stumble, succumb, seethe, sit; evaporate, yellow, rot, decompose, germinate, sprout, bud, wilt, wither, collapse, disintegrate, perish, blush, disappear; happen, transpire, occur, take place; arise, ensue, result, show up, end up, pop up; shine, spark, glitter, glisten, glow, crackle, smell, stink; last, remain, stay

The question remaining to be addressed is: what aspects of the unaccusative verbs in (53) and (54) make them unable to alternate with a transitive use? Given that unaccusativity is determined semantically (cf. Levin and Rappaport Hovav 1995:21), is it possible to further account for such differing behaviors among unaccusative verbs on semantic grounds? While many of the non-alternating unaccusatives might be semantically characterized as verbs of existence and appearance or verbs of emission (cf. Levin 1993a), are there any semantic properties shared by these two classes of verb whereby we can predict the non-alternating behaviors of these verbs? As stated earlier, the position that I take throughout my dissertation is that the syntactic behaviors of verbs are generally explicable semantically. Thus I assume that the distinction between alternating and non-alternating unaccusative verbs should be made in terms of their semantic properties. We will discuss this issue in more detail in Chapter 3.

2.6 Direction of Derivation

One of the issues addressed in the literature with regard to the ergative alternation has to do with the direction of derivation between ergative transitives and ergative intransitives. In other words, research is concerned with which member of the ergative pair is basic and which one is derived. Earlier research based on derivational morphology and markedness theory has revealed that the direction of derivation between ergative pairs varies from language to language (Nedyalkov and Silnitsky 1973, Haspelmath 1993). As noted previously, Japanese is among those languages in which morphological

pairs are formally distinguishable and ample research has been conducted on the issue of derivational direction (Okutsu 1967). For languages like English, however, in which the distinction between transitives and ergatives is not overly marked, the direction of derivation has been a moot point (Levin and Rappaport Hovav 1995, Hale and Keyser 1998). In this section, I review how the issue of direction of derivation has been addressed in the literature on the ergative alternation in English and Japanese.

2.6.1 Derivational Direction of English Ergative Pairs

2.6.1.1 Causativization

The view most commonly held by researchers regarding the direction of derivation is that transitive ergatives are derived from intransitive bases, a process usually referred to as causativization (Chomsky 1970:215, Williams 1981, Keyser and Roeper 1984, Guerssel et al. 1985, Pinker 1989, S.T. Rosen 1996). On this view, the ergative transitive *break*, for instance, is derived from the intransitive *break* as a result of the addition of the semantic element CAUSE to the latter.²⁵

(55) intransitive *break* → cause (+ intransitive *break*) → transitive *break*

Keyser and Roeper (1984) and Guerssel et al. (1985) consider the process of causativization to take place in the lexicon, representing the LCS of the ergative verb *break* as follows:

(56) a. LCS for intransitive *break*: y come to be BROKEN

b. LCS for transitive *break*: x CAUSE (y come to be BROKEN)

²⁵ Hale and Keyser (1986) consider the process of causativization to be a crucial property of ergative alternation in that it clearly distinguishes the ergative alternation from the middle alternation. Hale and Keyser argue that a middle verb is derived from a dyadic LCS, while an ergative intransitive is derived from a monadic LCS (1986:11).

The representation in (56) demonstrates that the transitive LCS (x CAUSE (y come to be BROKEN)) is derived from the ergative LCS (y come to be BROKEN) by virtue of what they call a causative rule. On this view, the ergative alternation reflects a syntactic realization of the intransitive and transitive LCSs of *break*. In short, Guerssel et al. argue that while the basic argument structure of the ergative verb is monadic, both transitive and intransitive uses of ergative pairs are listed in the lexicon. This implies that the verb *break* has two separate lexical entries in English (cf. Chapter 4, Section 4.3.1).

In support of the causativizing process of the ergative alternation, Hale and Keyser (1998:100, 111) simply posit the concept of basic argument structure, maintaining that “[I]n the absence of morphological evidence, the direction is always from the simpler structure (the intransitive or inchoative) to the more complex (the transitive).”

Haspelmath (1993) expresses a similar causativization view from a semantic point of view:

There are independent semantic reasons to think that the causative member of an inchoative/causative alternation is semantically derived, while the inchoative member is semantically basic...on purely *semantic* grounds we seem to be forced to conclude that causative verbs are derived from inchoatives. (1993:89)

As evidenced in the arguments by Hale and Keyser and Haspelmath, they rely on their own intuition concerning the direction of derivation with little concrete evidence.

Drawing on grammatical judgment, Chomsky (1970) notes that it is the ungrammaticality of **NP grow children* and the grammaticality of *children grow* that enables us to say the ergative use of *grow* is basic. This observation, however, does not account for the contradicting case where it is grammatical to say *He broke the rule* but ungrammatical to say **The rule broke* (for further discussion of this issue see Chapter 3, Section 3.2).

2.6.1.2 Anticausativization

While hardly any conclusive evidence is provided for the theory of causativization, the view that ergative intransitives are derived from their corresponding ergative transitive bases has gained substantial ground recently. In contrast to causativization, this process is referred to as anti-causativization (Zubizarreta 1987) or detransitivization (Levin and Rappaport Hovav 1995). In keeping with the proposal by Guerssel et al. (1985), Keyser and Roeper (1984) view ergative pairs as being generated in the lexicon. Crucially, however, Keyser and Roeper differ from Guerssel et al. in that they assume that ergative uses are derived from the transitive bases via ergative rule. The anticausative process presented by Keyser and Roeper is characterized by movement of the argument via Move α from the object position inside the transitive VP. Keyser and Roeper illustrate this process by the verb *sink* (Keyser and Roeper 1984:402).

(57) *sink* / [_S NP [_{VP} ____ [NP]]]
 [_S NP_i [_{VP} ____ [_{t_i]]]}

Levin and Rappaport Hovav (1995) basically follow Keyser and Roeper in suggesting that the LCS of *break* is a single causative representation and the ergative intransitive counterpart is derived through what they call detransitivization. In support of their view of detransitivization, Levin and Rappaport Hovav provide evidence that possible subjects of ergative intransitives are a subset of possible objects of the corresponding transitive ergatives due to selectional restrictions imposed on the former. That is, ergative transitives appear to allow a wider range of objects than the corresponding intransitives allow subjects. This is illustrated below, in which the

syntactic objects *table* and *skirt* of the transitive ergatives in (58a) and (59a) fail to occur in the subject positions of the intransitive counterparts in (58b) and (59b).

(58) a. The waiter cleared the table.

b. *The table cleared.

(59) a. The dressmaker lengthened the skirt.

b. *The skirt lengthened (Levin and Rappaport Hovav 1995:86)

On Levin and Rappaport Hovav' terms, causativization approach does not provide a satisfactory explanation as to how transitives can be derived from non-existent intransitive counterparts. Building on their claim that "the basic use of the verb will impose less stringent restrictions on its arguments," Levin and Rappaport Hovav conclude that ergative transitive constructions are basic (1995:86).

Moreover, as Levin and Rappaport Hovav point out, cross-linguistic morphological evidence appears to support their transitive-based and intransitive-derived view (1995:87-88). Citing a study by Haspelmath (1993) in which ergative alternating patterns in more than twenty languages are analyzed, Levin and Rappaport Hovav stress the fact that the ergative intransitive form of *break*, seemingly the prime example of the ergative verb among researchers, has a strong tendency to be more marked morphologically than the transitive counterpart. In light of the evidence of derivational morphology, it is reasonable to assume, even in languages like English where there are hardly any morphological distinctions between ergative transitives and intransitives, that

ergative transitives are basic and the corresponding intransitives are derived via detransitivization.²⁶

2.6.2 Derivational Direction of Japanese Ergative Pairs

As mentioned previously, the ergative pairs in Japanese are striking in that almost all the pairs are distinct in form. In a majority of cases, the formal distinctions are asymmetrical, that is either transitive ergatives are more marked than the corresponding intransitives or vice versa. Furthermore, as illustrated in Section 2.3.2 above, morphological derivations between pairs appear to follow relatively constant patterns. Given such consistent correspondence between derivational forms and transitivity, it has been proposed that the derivational directions of Japanese ergative pairs are basically predictable (Okutsu 1967, Jacobsen 1982, 1985, 1992, Kanaya 2000). There is a caveat, however, about relying too much on derivational morphology to determine the direction of derivation. In fact, in light of a wide range of morphological devices whereby one member of an ergative pairs is derived from the other, Levin (1985) argues that “it is not possible to assume that one member of the pair is derived from the other on the basis of the nature of the morphological relation between the verbs involved” (21). Since Levin does not seem to take Japanese data into account in her analysis, it remains to be seen whether her argument is applicable to ergative pairs in Japanese. In what follows, we will investigate how accurately the derivational patterns of Japanese ergative pairs may allow us to determine the direction of derivation.

²⁶ It is important to note here that researchers are not always certain about the directionality of derivation. Dixon (1991:291), for instance, expresses his uncertainty about his position, suggesting that the direction is determined depending on the ergative verb type. Building for the most part on native speakers’ intuition, Dixon assumes that *break*, *crush*, and *smash* are basically transitive, *burst* and *explode* are basically intransitive, and *tear* and *chip* are indecisive.

2.6.2.1 Transitivity vs. intransitivity

Based on the view that morphologically marked forms are derived, Okutsu (1967) proposes three derivational patterns associated with ergative pairs in Japanese. The first pattern is referred to as *tadooka* ('Transitivity'), which involves a derivational process of deriving transitive forms from intransitive bases by means of the Transitivity marker *-as*.

| (60) INTRANSITIVE | TRANSITIVE |
|-------------------|------------------|
| ugok- 'move' | ugokas- 'move' |
| tob- 'fly' | tobas- 'let fly' |
| wak- 'boil' | wakas- 'boil' |

The second pattern is *zidooka* ('Intransitivity'), which shows a derivational pattern completely opposite to *tadooka*; it derives transitive forms from the intransitive bases by virtue of the Intransitivity marker *-ar*.

| (61) TRANSITIVE | INTRANSITIVE |
|----------------------|---|
| hasam- 'put between' | hasamar- 'get caught between' ²⁷ |
| tunag- 'connect' | tunagar- 'get connected' |
| husag- 'block' | husagar- 'get blocked' |

The two opposing derivational patterns just described may raise a question about describing the direction of derivation regarding the English ergative alternation as either causativization or anticausativization. The issue may be further complicated by the third pattern called *ryookyokuka* ('Polarization'), in which both transitive and intransitive forms appear to be derived from some hypothetical roots.²⁸

²⁷ When there is no intransitive counterpart in English, I use 'get + past participle,' following a suggestion by Croft (1991:267-8), to differentiate it from the prototypical, agentive *be*-passive.

²⁸ Haspelmath (1993) notes that the Japanese ergative pairs are characterized as non-directed alternation in that both transitive and intransitive uses are derived from the same

(62) TRANSITIVE

naos- ‘fix’
 hirak- ‘open’

INTRANSITIVE

naor- ‘get fixed’
 hirak- ‘open’

For the pair *naos-* and *naor-*, the transitive suffix *-s* and the intransitive suffix *-r* are considered equal in terms of markedness, making it impossible for us to determine the derivation of direction. For the ambivalent pair *hirak-*, on the other hand, since there is no change in form between the transitive and intransitive, Polarization would be the most appropriate classification (Okutsu 1967:58). In short, given the morphological evidence for multiple derivational patterns of Japanese ergative pairs, one may well reconsider the question of derivational direction involving the English ergative alternation.

2.6.2.2 Causativization vs. passivization

It is important to notice that in Japanese the process of transitivization and intransitivization just described is often considered comparable to the process of causativization and anticausativization, respectively (Shibatani 1973, Noda 1991, Jacobsen 1992, Kitagawa and Fujii 1999). This observation arises in part from morphological evidence. That is, the transitivizer *-as* bears a morphological resemblance to the Japanese causative suffix *-(s)ase*, a causative morpheme which attaches to either intransitive or transitive verbs almost freely to create the meaning ‘cause somebody to do

stem. One typical pair representing the non-directed alternation is *atumar-/atume-* ‘collect, gather,’ a derivational pattern comprising Jacobsen’s Class III. In this pair, the transitive and intransitive uses are equipollently derived from the stem *atum-* by virtue of the derivational suffixes *-ar* and *-er*, respectively. The problem with Haspelmath’s claim, however, is that the number of verb pairs (31) surveyed is very small compared to the number of ergative pairs (134) given by Jacobsen (1992). More importantly, his analysis of derivational suffixes is rather vague. For instance, while Haspelmath labels the pair *yurer-/yuras-* as non-directed, he considers a similar pair *kawak-/kawakas-* as causativization. It seems that at the very least Haspelmath analyzes these particular pairs mainly from a isomorphic point of view without taking into account the semantic function of the Transitivizer *-as*.

(something).’ Likewise, the intransitivizer *-ar* is viewed as resembling the Japanese passive suffix *-rare*, a passive morpheme whose most common function is to passivize transitive verbs.²⁹ Given such similarities, Noda (1991) concludes that there is little difference between causativization/passivization and transitivization/anticausativization. The only difference, according to Noda, should be the degree of productivity involved in each process; causativization/passivization is more productive than transitivization/anticausativization in that the former is applied to a larger number of verbs.

Moreover, the parallelism between transitivization and causativization, on the one hand, and the parallelism between intransitivization and passivization, on the other, has been demonstrated syntactically in the literature (Ichihashi 1992). As schematized previously, repeated here in (63), the configurational property characteristic of the ergative pairs is that the object of the transitive verb corresponds to the subject of the intransitive verb.

(63) NP₁-ga NP₂-o V_{tr} (transitive construction)

NP₂-ga V_{intr} (intransitive construction)

The identical correlation is observed between the non-causative (i.e. intransitive) and causative constructions mediated by *-(s)ase*.

²⁹ Diachronical surveys seem to suggest that the transitivizer *-as* was derived from the causative morpheme *-(s)ase* and the intransitivizer *-ar* was derived from the passive morpheme *-are* (cf. Shibatani 1990:236).

(64) a. NP₁-ga NP₂-o Vi + -(s)ase (causative construction)

Akira-wa Taroo-o go-mairu aruk-ase-ta³⁰
 Akira-TOP Taro-ACC five-mile walk-CAUS-PAST
 ‘Akira made Taro walk five miles’

b. NP₂-ga Vi (intransitive construction)

Taroo-wa go-mairu arui-ta (< aruk- + ta)
 Taro-TOP five-mile walk-PAST
 ‘Taro walked five miles’

Along the same lines, the syntactic configuration of passivization is comparable to (64).

(65) a. NP₁-ga NP₂-o V_{tr} (active (i.e. transitive) construction)

Taroo-ga hon-o nusun-da
 Taro-NOM book-ACC steal-PAST
 ‘Taro stole the book’

b. NP₂-ga (NP₁-ni) V_{tr} + -(r)are (passive construction)

Hon-ga (Taroo-ni) nusm-are-ta
 book-NOM (Taro-by) steal-PASS-PAST
 ‘The book was stolen by Taro’

In spite of the striking morphological and syntactic similarities just described, many researchers agree that the processes of transitivization and intransitivization should be distinguished from causativization and passivization. Shibatani (1976a) discusses the disparity between transitivization and causativization from a structural point of view. More specifically, transitive verbs with the transitivizer *-as* are lexicalized, contributing to a mono-clausal structure as a whole. Causative verbs with the causative morpheme *-(s)ase*, on the other hand, are assumed to constitute an embedded structure, just like complex structures associated with the analytical causative verbs *make* or *have* in English (Shibatani 1976a:244; see also Kuroda 1993).

³⁰ The choice between *-ase* and *-sase* entirely depends on whether the stem of a verb ends with a consonant (*kak-* ‘write’ → *kak-ase-* ‘make someone write’) or a vowel (*tabe-* ‘eat’ → *tabe-sase-* ‘make someone eat’).

- (66) a. Taroo-wa isi-o ugokas-ita
 Taro-TOP stone-ACC move-PAST
 ‘Taro moved the stone’
- b. Taroo-wa Akira-ni isi-o ugok-ase-ta
 Taro-TOP Akira-DAT stone-ACC move-CAUSE-PAST
 ‘Taro made Akira move the stone’

As for the contrast between ergative intransitives and passives, Noda (1991:225-6) suggests that it is the lack of agentivity that differentiates ergative intransitives from passives. According to Noda, the ergative *ware-* in (65a) implies that a balloon blew up spontaneously, whereas the passive *war-are-* in (67b) implies that somebody blew up the balloon, whether on purpose or by accident.

- (67) a. Huusen-ga ware-ta
 balloon-NOM burst-PAST
 ‘The balloon burst’
- b. Huusen-ga war-are-ta
 balloon-NOM break-PASS-PAST
 ‘The balloon was burst’

Jacobsen (1992) mentions non-productive characteristic of morphologically-based transitivity and intransitivity in Japanese, arguing that as a whole causativization and passivization are productive enough for native speakers never need to memorize each causativized and passivized form individually (cf. Chapter 4, Section 4.2)

CHAPTER 3 SEMANTIC CHARACTERIZATION OF ERGATIVE ALTERNATIONS

3.1 Introduction

The fundamental hypothesis behind the present research is based on a view of lexical semantics in which the semantics of verbs is responsible to a great extent for the syntactic realizations of arguments surrounding the verbs (Wasaw 1985, Grimshaw 1987, Pinker 1989, Levin and Rappaport Hovav 1995, Rappaport Hovav and Levin 1998). The rationale behind the syntax-lexical semantics interface is that the alternatability of the arguments of verbs, as represented by ergative alternation, dative alternation, and locative alternation, among others, is predictable from the meaning of the verbs. According to Levin (1993a), for instance, the semantic group of English verbs called *break*-verbs, such as *break*, *crack*, *shatter*, and *tear*, undergo the ergative alternation, whereas the semantic group of verbs called *hit*-verbs, such as *batter*, *hammer*, *hit*, and *pound*, do not.

One main research goal regarding ergative pairs has been to elucidate “the conditions under which verbs allow alternation in transitivity” (Ritter and Rosen 1998:135). As mentioned in Chapter 1, Pinker (1989) notes that semantic properties that appear to be pertinent to the alternating behaviors of verbs are similar across languages:

The same alternations in other languages are prone to applying to the same kinds of verbs and being constrained by the same kinds of criteria and shifts in interpretation as one finds in English. (1989:97)

Specifically, Pinker points out that verbs with the meaning ‘breaking’ have a strong tendency to participate in a lexical ergative alternation cross-linguistically, whereas verbs

with the meaning ‘laughing’ invariably lack a lexical ergative alternant or variant (1989:134; see also Marantz 1984:181-2, Hale and Keyser 1998:89). Haspelmath conducts an extensive cross-linguistic survey of derivational morphology between ergative pairs, generalizing that ergative pairs in a majority of languages contain ‘change of state’ as an essential semantic component (1993:92-93). In this chapter, I will provide a lexical semantic analysis of the ergative alternation in English and Japanese. It will be demonstrated that while verbs which undergo this particular alternation appear to belong to similar semantic classes in both languages, there are yet crucial differences that need to be addressed.

3.2 Two Issues of Ergative Alternation

There are two issues surrounding the ergative alternation that need to be addressed here. One is that there are transitive and intransitive verbs which do not alternate in transitivity under any circumstances. As mentioned above, the English verb *hit* simply lacks an ergative intransitive use.

- (1) a. Tom hit the boy.
 b. *The boy hit.

The Japanese equivalent *tatak-* ‘hit’ also fails to occur in intransitive constructions.

- (2) a. Taroo-wa Akira-o tatai-ta. (< tatak- + ta)
 Taro-NOM Akira-ACC hit-PAST
 ‘Taro hit Akira’
 b. *Akira-ga tatakata-ta.¹ (tatakar- + ta)
 Akira-NOM get hit-PAST
 ‘Akira got hit’

¹ Since there is no intransitive counterpart to *tatak-*, I have coined a hypothetical form, upon which native speakers would agree as the most probable form. In what follows, whenever I need to coin a hypothetical form, I follow this principle.

Another complex aspect of the ergative alternation is that verbs which alternate in transitivity are not always consistent with their behaviors (Van Voorst 1995:513, Lemmens 1998:37). For instance, while the English verb *break* normally alternates in transitivity, when the verb takes *contract* as a Theme argument, it fails to undergo the alternation.²

(3) a. He broke the contract.

b. *The contract broke. (Levin and Rappaport Hovav 1995:85)

Van Voorst (1995:514) lists more cases of such inconsistent behaviors of ergative verbs.

(4) a. He cracked the plate - The plate cracked

b. He cracked the security code - *The security code cracked

(5) a. He crashed his car into a tree - His car crashed into a tree

b. He crashed the party - *The party crashed

(6) a. He thickened the sauce - The sauce thickened

b. He thickened the line - *The line thickened

(7) a. He twisted the cord - The cord twisted when he pulled on it

b. He twisted his hair with his fingers - *His hair twisted

(8) a. He stretched the elastic band - The elastic band stretched

b. He stretched his leg - *His leg stretched

² Brousseau and Ritter (1991:60) note that the same phenomenon is observed in French.

(i) a. Jean a brisé l'accord
'John broke the agreement'

b. *L'accord s'est brisé(e)
'The agreement broke'

Given these examples, as will be discussed later in more detail, the alternatability of verbs appears to depend not only on the verbs themselves but also on the constructional environments where these verbs occur.

The same observation applies to a number of Japanese ergative verbs. The intransitive verb *tat-* ‘to stand’ is paired with *tate-* ‘set up,’ alternating in transitivity according to the configurational template given in Chapter 2, Section 2.3 above:

- (9) a. Boo-ga tat-te iru.
 pole-NOM stand-ASP
 ‘The pole stands’
- b. Kodomo-ga boo-o tate-te iru.
 child-NOM pole-ACC put up-ASP
 ‘The child is putting up the pole’

However, if the intransitive verb *tat-* occurs with an animate subject, then the transitive counterpart becomes ungrammatical in the construction that follows the same template:

- (10) a. Kodomo-ga rooka-ni tat-te iru.
 child-NOM hallway-in stand-ASP
 ‘A child stands in the hallway’
- b. *Taroo-wa kodomo-o rooka-ni tate-te iru.
 Taro-TOP child-ACC hallway-in stand-ASP
 ‘Taro stands a child in the hallway’

Given the examples from English and Japanese, the objectives of this chapter are (1) to explain why some verbs alternate in transitivity while others simply do not and (2) to elucidate the conditions under which typical ergative verbs like *break* fail to show the alternating behavior.

3.3 A Problematic Case: The English *Cut* and *Break*

One way of explaining how the semantics of verbs determine the syntactic structures of arguments occurring with the verbs is to compare verbs which are

semantically distinct. The contrast between *break* and *hit* is a case in point. As will be discussed later in detail, the transitive use of *break* entails the semantic properties ‘cause’ and ‘change of state,’ while *hit* does not. The weakness of this approach might be that if there is more than one semantic property that differs among verbs as in *break* and *hit*, then it becomes more difficult to pinpoint the true cause of the differing syntactic behavior shown by each verb. In this respect, the contrast between the English *break* and *cut* has been considered more appropriate to the study of the syntax-lexical semantics interface due to their semantic similarities (e.g., the transitive uses of the verbs entail both ‘cause’ and ‘change of state’), on the one hand, and yet some crucial syntactic differences, on the other. In this section I outline the semantic differences and similarities between the two verbs and their syntactic behaviors that are assumed to reflect the semantic properties.

The verb *break* is one of the verbs which are subsumed in general under a large semantic verb group called “change of state” (Levin 1993a). In particular, the change of state described by *break* is considered so prototypical that it is often used as the label of a subclass of change-of-state verbs (e.g., verbs of *breaking*, *break*-type verbs, etc.) such as *shatter*, *crack*, *split*, etc. The essential semantic property associated with this particular verb group would be summarized as ‘a change in the material integrity’ (Hale and Keyser 1987:7) or, more elaborately, as a ‘change that involves an initial condition of being whole and a final condition of being (able to be) separated into several detachable portions’ (Ravin 1990:222). It is this semantic property that distinguishes *break*-verbs from other change-of-state verb groups such as “verbs of bending,” “verbs of cooking,” and “verbs of change of color” (See Levin 1993a for detailed study of this issue). The

verb *cut* also involves a similar kind of change of state as *break*, namely ‘a separation in its material integrity’ (Hale and Keyser 1986:11, 1987:7). It is interesting to note, however, that under the semantic-model approach, the verb *cut*, which comprises another semantic group of verbs referred to as “contact-effect” (e.g., *crush*, *pierce*, *slash*, *bite*, *shoot*, etc.), is normally separated from verbs of *breaking* (Levin 1995:67).

Given that *break* and *cut* share change of state as one of their essential semantic properties, it is necessary to account for why they should be classified into separate semantic verb groups. One may seek an explanation for this question in the syntactic behaviors that each verb shows. In fact, the syntactic structures where *cut* and *break* can occur have been discussed extensively in the literature, particularly under the scope of argument structure alternations (Kilby 1984, Guerssel et al. 1985, Hale and Keyser 1986, 1987, 1988, Pinker 1989:104-109, Levin and Rappaport Hovav 1992b:136, 1994:62-3, 1995:103, Levin 1993a:5-11, Miller 1993:180). In the remainder of this section, we compare the syntactic behaviors of the two verbs.

Firstly, both verbs typically undergo the middle alternation as illustrated below (cf. Chapter 2, Section 2.2).

- (11) a. This bread cuts easily.
 b. This glass breaks easily. (Pinker 1989:106)

On the other hand, they both fail to undergo the so-called “contact locative” alternation, a syntactic behavior which is typified by verbs like *hit* and *bump*.

- (12) a. I hit the wall with the bat.
 I hit the bat against the wall.
 b. I cut the bread with the knife.
 *I cut the knife against the bread.

- c. I broke the egg with a spoon.
 *I broke a spoon against the egg. (Pinker 1989:107)

What is more striking is certain alternating behaviors associated with *cut*, but not with *break*. One such behavior is conative alternation, in which *cut* takes the preposition *at* implying that “the subject is trying to affect the oblique object but may or may not be succeeding” (Pinker 1989:104; see Guerssel et al. 1985:50, Miller 1993:180, Levin 1995:67 for further discussion).

- (13) a. Margaret cut the bread.
 b. Margaret cut at the bread. (Pinker 1989:104)
- (14) a. Janet broke the cup.
 b. *Janet broke at the cup. (Levin 1995:67)

Another syntactic behavior exclusive to *cut* is part-possessor ascension, in which “the ‘possessor’ appears as the direct object and the body-part noun appears in a ‘locative prepositional phrase’” (Fillmore 1970:126).

- (15) a. Sam cut Brian’s arm.
 b. Sam cut Brian on the arm. (Pinker 1989:105)
- (16) a. Jim broke his leg.
 b. *Jim broke him on the leg. (Fillmore 1970:126)

The most frequently discussed alternating behavior, however, in relation to *cut* and *break* is ergative alternation. As mentioned previously, *break* is among other change-of-state verbs that undergo the ergative alternation (see Chapter 2, Section 2.2 above). The verb *cut*, on the other hand, does not undergo this alternation.³

³ The verb *cut* rarely occurs in a seemingly intransitive construction as follows:
 (i) This bread cuts.

(17) a. Margaret cut the bread.

b. *The bread cut. (Levin 1995:66)

The argument structure alternations in which *cut* and *break* do and do not participate are summarized as follows:

Table 1: Alternation patterns of *cut* and *break*

| | causative alternation | conative alternation | middle alternation | contact-locative alternation | part-possession alternation |
|--------------|--------------------------|-------------------------|-----------------------|---------------------------------|--------------------------------|
| <i>cut</i> | | + | + | | + |
| <i>break</i> | + | | + | | |

Once argument structure alternations are understood to revolve around verbal predicates, one may say that *cut* and *break* show a good deal of syntactically distinct behaviors. The question that still remains to be addressed is what factors of the verbs trigger such different syntactic behaviors. Or put differently, since I conform to the position that the semantics of verbs determine the syntactic behaviors of the verbs, what are the semantic properties that are responsible for different alternating behaviors as exemplified by *cut* and *break*? In the next section, I will extend our discussion and explore semantic properties of verbs in English and Japanese, especially focusing on the verbs' meanings that might have to do with the different behaviors in terms of the ergative alternation.

Hale and Keyser (1987:19), however, call the sentence an “unadorned” middle, differentiating it from the genuine ergative intransitive construction *The vase broke*.

3.4 Conditions for Ergative Alternation: English

3.4.1 Change of State

One verbal semantic property that is viewed as playing a crucial role in determining alternatability of verbs is that of “change.” In linguistics literature, verbs undergoing the ergative alternation have been understood to indicate some sort of change brought about on a Theme argument. As early as the 1920s, Jespersen had pointed out that verbs that bring about a change in a person or a thing tend to be “doublefaced” or alternate in transitivity in English (Jespersen 1927:332-3).

(18) *Change-class verbs*

| | |
|-----------------------------|--------------------------------|
| <i>break</i> the ice | the ice <i>breaks</i> |
| <i>boil</i> water | the water <i>boils</i> |
| <i>burst</i> the boiler | the boiler <i>bursts</i> |
| <i>improve</i> an invention | his health has <i>improved</i> |

Levin (1985:18-19) specifies the types of change associated with verbs, maintaining that verbs of change of state and position undergo the ergative alternation in English.

(19) Change of state: *break, crack, open, close, melt, freeze, harden, dry*

Change of position⁴: *roll, bounce, move, float, drop, turn*

Traditionally, however, change of state or, more elaborately, “changes in the physical shape or appearance of some entity” (Levin and Rappaport Hovav 1995:80), has been viewed in the literature as the key semantic property determining whether a given verb may participate in the ergative alternation (Fillmore 1970, Smith 1978, Levin 1985, 1993a, Pinker 1989, Haspelmath 1993, Levin and Rappaport Hovav 1992b, 1994, 1995, Van Voorst 1995, S.T. Rosen 1996). The role of change of state in verbs’ alternatability will be made more explicit when compared to verbs which inherently involve no change

⁴ In Levin (1993b), change of position is referred to as “manner of motion.”

of state at all. Fillmore (1970) clearly illustrates this point by comparing the verbs *break* and *hit*.

- (20) a. John/A rock broke the stick.
The stick broke.
- b. John/A rock hit the tree.
*The tree hit. (Fillmore 1970:122-123)

According to Fillmore, the reason why a contact verb like *hit* fails to alternate in transitivity is that unlike *break*, it does not inherently entail any effect or change of state on a co-occurring Theme argument. This point will be illustrated more explicitly in (21).

- (21) a. I hit the vase with a hammer, but it did not break; it was made of iron.
- b. *I broke the vase with a hammer, but it did not break; it was made of iron.

Based on this observation, Fillmore concludes that *break* participates in the ergative alternation because it lexically entails a change of state.

The essential role of change of state in verbs' alternatability is further illustrated by the verb *bake* in a unique manner (Atkins et al. 1988, Levin 1993a:175 & 243-4, Kageyama 1996:161-2, Ono 2000:8ff). The verb is normally categorized as a change-of-state verb and in this sense, as expected, it undergoes the ergative alternation.

- (22) a. She baked the potatoes.
- b. The potatoes baked. (Kageyama 1996:161)

Interestingly enough, if we replace 'potato' with 'cake,' then the intransitive construction becomes ungrammatical.

- (23) a. She baked the cake.
 b. *The cake baked.⁵

Levin and Rappaport Hovav (1992a:259) explain that the meaning of *bake* in (23) is slightly different from the one in (22) in that baking a cake implies ‘creation’ in addition to the basic change-of-state meaning, roughly phrased into ‘create by means of change of state bake.’ In short, as pointed out by Levin and Rappaport Hovav (1992b:139), only when *bake* implies change of state, does it exhibit the ergative alternation. That the additional semantic property of creation may hinder *bake* from alternating in transitivity is further supported by the fact that other verbs of creation like *make*, *produce*, *build*, *assemble*, etc. do not undergo such alternation.

Note, however, change of state is not necessarily the sole factor in determining whether a given verb will undergo the ergative alternation. Firstly, as Levin and Rappaport Hovav (1994:41) point out, some groups of verbs such as verbs of emission (sound or light) and position, which are not readily identified with verbs of change of state, do alternate in transitivity as illustrated below.

- (24) a. Tom beamed the flashlight.
 The flashlight beamed.
 b. Tom hung the photo on the wall.
 The photo hung on the wall. (Levin and Rappaport Hovav 1994:42)

More importantly, there are many verbs of change of state in English which do not alternate in transitivity (Levin and Rappaport Hovav 1992b:133n). As noted earlier,

⁵ Kageyama (1996:161) gave the sample sentences *She baked a cake*/**A cake baked* with no explanation about why he changed the article (from *the* to *a*) as well as the noun. In order to minimize additional complexities, I chose to use ‘the cake’ in my sample sentences.

contact-effect verbs to which *cut* belongs provide support for this statement. Levin refers to this group of verbs simply as *cut* verbs, listing the following members (1993a:156):

- (25) chip, clip, cut, hack, hew, nip, saw, scrape, scratch
slash, snip

Recall that while *cut* is normally classified in a different semantic class than *break*, it crucially involves change of state (Fillmore 1970, Levin and Rappaport Hovav 1994, 1995).⁶ Nevertheless, the transitive verb *cut* fails to occur intransitively, as illustrated below.

- (26) a. Elsa clipped the article out of the paper.
b. *The article clipped out of the paper.
- (27) a. I sawed the board in half.
b. *The board sawed in half.
- (28) a. Jane scraped the carrot thoroughly.
b. *The carrot scraped thoroughly.
- (29) a. Vandals had slashed most of the seats on the train.
b. *Most of the seats on the train slashed.
- (30) a. I hurriedly snipped the string.
b. *The string hurriedly snipped.

Another semantic group of verbs that needs to be mentioned here is what Levin refers to as *destroy* verbs (Levin 1993a:239).

- (31) *Destroy* verbs:
annihilate, blitz, decimate, demolish, destroy, devastate, exterminate,
extirpate, obliterate, ravage, raze, ruin, waste, wreck

⁶ For the purpose of illuminating the difference between *break* and *cut*, Levin (1993a:9) refers to *break* as a 'pure' change of state verb.

Like *cut* verbs, the *destroy* verbs involve change of state but fail to alternate in transitivity.

(32) a. The bomb destroyed the whole city.

b. *The whole city destroyed.

(33) a. The bulldozer razed the building.

b. *The building razed.

Levin (1993a:239) notes that the *destroy* verbs do not participate in the ergative alternation since they uniformly denote the total destruction of entities (see Section 3.4.2.2 below for more detailed discussion of *destroy* verbs). In short, the examples in (26) - (30) and (32) – (33) suggest that change of state is not the sole determining factor of the alternatability of verbs in English.

3.4.2 Agentivity

Another semantic property that needs to be considered surrounding the ergative alternation is agentivity. When an entity is agentive, the entity or ‘agent’ always involves volition or intention (Talmy 1976, Delancey 1984).⁷ As discussed in Chapter 2, agentivity is most typically associated with the subjects of unergative verbs.

⁷ One difficulty with agentivity is its definition. In particular, the difficulty has to do with the question of whether agentivity can be characterized by one single semantic feature such as ‘animacy’ or ‘volition’ (Cruse 1973, Hopper and Thompson 1980, Delancey 1984, Schlessinger 1995; see Somers 1987 and Abdul-Roaf 1998 for detailed reviews of discussion on this issue). Due to the difficulty in pinpointing a single semantic property associated with agentivity, it has become more common to take a multiple-element approach to this issue in recent years. Foley and Van Valin (1984:32) consider a combination of animacy, volition and control to be the contributing factor to the agentive interpretation of an “actor.” Oosten (1980:482) proposes the most comprehensive view of agentivity, arguing that four semantic properties—intentionality, volition, control, and responsibility—combine to make an entity agentive.

- (34) a. I walked along the river.
 b. Tom runs five miles every day.

Agentivity also characterizes the subjects of causative transitive verbs. Returning to the contrast between *break* and *cut*, it has been assumed in the literature that the impossibility of *cut* in the ergative intransitive construction is due to its indispensable implication of a volitional agent that takes control of the use of a sharp instrument (O'Grady 1980:63, Kilby 1984:44, Haspelmath 1993:93-94, Lemmens 1998:37). In other words, the agent-oriented verb *cut* is incompatible with ergative intransitive constructions in which, as mentioned in Chapter 2, Section 2.2, the thematic roles of Agent and Cause are suppressed and not in central focus. Such semantic constraints on the subjects of *cut* are reflected in selectional restrictions on the choices of arguments as subjects. That is, the ungrammaticality of **The lightning cut the clothesline* is due to the fact that no natural forces such as lightning can be viewed as being volitional (Levin and Rappaport Hovav 1995:103).

By contrast, agentivity is not necessarily an essential semantic property for *break*. While the verb can take an agentive entity as subject in transitive constructions as in *Tom broke the vase*, it is important to note that the event denoted by *break* can be brought about in varying manners. This is illustrated by the fact that unlike *cut*, the transitive ergative use of *break* takes non-agentive inanimate entities like an instrument and natural force as subject (cf. Langendoen 1970:72-3, Talmy 1976, 1985, Levin and Rappaport Hovav 1995).⁸

⁸ Nishimura (1993:503) suggests the possibility of assigning the Agent role to the instrumental subject.

- (35) a. The ax broke the window.
 b. The earthquake broke the window.
 c. The falling stone broke the window.

Langacker (1991:332) points out that there are many other ergative verbs in English like *open* and *wake up* that allow a wide range of causers or causing events as subjects. In short, under the assumption that causative change-of-state verbs that undergo the ergative alternation are lexically unspecified about agentivity, one might attribute the unalternability of *cut* to its entailment of a volitional agent as part of the inherent meanings of the verb.

3.4.2.1 Kill verbs

While the concept of agentivity seems to account for the contrast between *break* and *cut* in terms of alternability in transitivity, the analysis based on agentivity poses several problems. Firstly, agentivity does not necessarily determine correctly whether a given change-of-state transitive verb ergativizes. Compare *kill* with *break*. Like the transitive use of *break*, the verb *kill* contains CAUSE in its semantic representation and its internal argument appears to undergo change of state.⁹ As with *break*, the verb occurs with non-agentive as well as agentive causes.

- (36) a. An arrow through the heart killed Max.
 b. Malaria killed Nigel. (Foley and Van Valin 1984:32)

Nevertheless, *kill* does not participate in the ergative alternation as shown below.

- (37) a. *Max killed (due to an arrow through the heart).
 b. *Nigel killed (due to Malaria).

⁹ Fontenelle and Vanandroye (1989:19) refer to *kill* as a purely causative verb, differentiating it from ergative verbs like *break*.

Instead, the inchoative meaning of death is expressed with the completely distinct lexical item *die* or the verbal phrase *pass away*.

- (38) a. Max died due to an arrow through the heart.
 b. Nigel died/passed away with Malaria.

The peculiarity of *kill* in terms of the ergative alternation will be made more explicit when compared to other verbs with similar meaning such as *assassinate*, *murder*, *slaughter*, etc., which also fail to be used intransitively.

- (39) a. The terrorist assassinated/murdered the senator.
 b. *The senator assassinated/murdered.
- (40) a. The terrorists slaughtered many civilians.
 b. *Many civilians slaughtered.

The inability of the verbs in (39) and (40) to alternate in transitivity will be accounted for by our preceding discussion on agentivity because this set of verbs apparently lexicalizes agentivity.¹⁰ This is readily illustrated by the fact that none of the verbs can take non-agentive subjects. As mentioned above, the subject of *kill* can be an inanimate object or natural force which, for lack of volition, could not be the subject of *assassinate* and *murder* (cf. Fillmore 1968:28).

¹⁰ Intention is also an essential lexical semantic component of *murder* and *assassinate*. That these verbs entail intention as an indispensable feature is shown by the fact that it is redundant for them to have the phrase *on purpose*, whereas the verb *kill* can occur with the phrase.

- (i) a. #The man murdered the senator on purpose
 b. #The man assassinated the senator on purpose
 c. The man killed the senator on purpose

Lack of intention in the verb *kill* is further illustrated by the fact that the verb can occur with the adverb phrase *by accident*, whereas *assassinate* and *murder* cannot.

- (ii) a. The man killed his brother by accident.
 b. *The man assassinated/murdered his brother by accident.

(41) a. *The explosion assassinated/murdered the senator.

(Levin and Rappaport Hovav 1995:102)

b. *The earthquake assassinated/murdered the senator.

(42) a. The explosion killed more than one hundred people.

b. The earthquake killed more than one hundred people.

The question that remains to be addressed, therefore, is whether it still is possible to account for the unalternability of *kill* without relying on agentivity.

Levin and Rappaport Hovav argue that transitive verbs that always require “an animate intentional and volitional agent as subject” never detransitivize (1995:102).¹¹ Such verbs include, other than *assassinate* and *murder*, verbs of creation like *write* and *build*. In short, agentivity does account for the alternability of certain transitive change-of-state verbs. Nevertheless, given the non-alternating behavior of the non-agentive *kill* there seems to be a need to reconsider the validity of adopting agentivity to the analysis of English ergative pairs.

3.4.2.2 Destroy verbs

Another group of verbs that raise a question about viewing agentivity as a contributing factor in verbs’ non-alternability are *destroy* verbs. Maruta (1998:94) analyzes the verbs *destroy* and *devastate*, arguing that these verbs are similar to *kill* in that while they can take non-agentive subjects like natural forces as subjects, they do not alternatively occur transitively and intransitively.

¹¹ By “volitional” or “intentional” it is meant that an agent is interpreted as “deliberately performing an action which brings about a change of state in a patient” (Delancey 1984:5). The obligatory presence of the volitional agent as the causer of an event is also considered an essential property which determines whether a given transitive event is prototypical or not (Delancey 1985, Lakoff 1977, Hopper and Thompson 1980).

- (43) a. The avalanche destroyed several houses.
 b. *Several houses destroyed.

- (44) a. Hurricanes devastated the region.
 b. *The region devastated.

Levin (1993a) suggests that an additional semantic property may provide an account for such syntactic behaviors of *destroy* verbs. According to Levin, it is the degree of change of state that results in the non-alternatability of the *destroy* verbs listed in (31). In other words, *destroy* verbs imply that the Themes (*house* and *region*) of these verbs undergo a complete demolition of their physical structures, entirely losing their original functions or uses (Levin 1993a:239; cf. Dixon 1991:112). This will be illustrated more clearly by the awkwardness of sentence (45b), compared to (45a):

- (45) a. I broke the glass, but I was able to drink some water with a remaining piece.
 b. #I destroyed the glass, but I was able to drink some water with a remaining piece.

Another way of demonstrating that the *destroy* verbs indicate the totality of destruction is that they do not occur with the particle *up*, which, combined with deformation/separation verbs, emphasizes the completeness of a change of state. In other words, it is redundant to attach *up* to a verb which already means a complete destruction lexically (Jackendoff 1990:116, Kageyama 1996:222). For instance, the verb *wreck* and *waste*, which are among the *destroy* verbs in Levin (1993a:239), does not occur with *up*.

- (46) a. *The earthquake wrecked up hundreds of old buildings.
 b. *The war wasted up the country.

This is not the case with *break*, which does not inherently involve such totality of destruction. Thus, the use of *up* with *break* as in *Tom broke up the vase* is grammatical.¹² In short, the impossibility of *destroy* verbs to occur in ergative intransitive constructions as in (43b) and (44b) above again suggests that agentivity associated with the subject of the causative transitive is not the sole factor in determining the verb's alternatability.

To summarize, although change of state and agentivity are crucial semantic properties that have much to do with the alterability of verbs, they do not provide an adequate explanation about the two key semantic groups of verbs—*cut* and *destroy* verbs—under consideration.

3.4.3 External vs. Internal Causation

We have observed that the two semantic properties—change of state and agentivity—do not convincingly account for the alternatability of verbs in English. At the very least, these semantic properties did not adequately account for the syntactic behaviors exemplified by certain causative transitive verbs like *kill* and *destroy*. Given such problems, another approach to the ergative alternation proposed in the literature over the last two decades is to focus on the type of causation relevant to the realization of an eventuality. More specifically, this approach suggests that causation is not a uniform concept but rather characterized by its multifaceted properties. The crucial difference between causation and agentivity is that the former places more emphasis on the connection between agents/causers and caused events, as frequently discussed in the causal chain model (cf. Croft 1990).

¹² In terms of aspect, *destroy* is classified into Accomplishment, while *break* is Achievement (Brinton 1988:29, Smith 1991; for more discussion of aspectual characteristics of Accomplishment and Achievement, see Chapter 5 below).

Smith (1978) recognizes two semantic features associated with ergative verbs, namely ‘independent activity’ and ‘external control.’¹³ In other words, Smith argues that verbs that participate in the ergative alternation express activity or change of state that can occur relatively independently but at the same time has the possibility of being controlled by an external agent (Smith 1978:101-2; cf. Davidse 1992:109). For instance, verbs like *break* and *open* alternate since the events denoted by these verbs can occur independently or be externally controlled. By contrast, verbs like *destroy* or *build* which denote activities or changes of state that are controlled only by external agents do not alternate in transitivity. Along the same line, verbs like *shudder* or *laugh* do not alternate with transitive uses in that control over these activities cannot be relinquished entirely to external agents (Smith 1978:107; cf. Levin and Rappaport Hovav 1995:90). In short, Smith assumes that the alternation between an ergative intransitive and an ergative transitive reflects the dual features (‘independent activity’ and ‘external control’) associated with the ergative verbs.

Levin and Rappaport Hovav (1994, 1995) follow and expand on Smith’s view of change in relation to causation, proposing a distinction between *external causation* and *internal causation*, which is nearly equivalent to Smith’s independent activity and external control. In their terms, verbs which fail to undergo the ergative alternation represent internally caused eventualities, which result either from the volition or will of agents that perform activities like *play* and *speak* or from the inherent properties of the arguments that undergo the events represented by verbs like *blush* and *tremble*. By

¹³ Independent activity might be identified with spontaneous event. For the correlation between ergative intransitives and spontaneity, see Chapter 2, Section 2.2.2 above.

contrast, verbs like *break* which participate in the ergative alternation describe eventualities that are necessarily caused by an external cause, whether it is an agent, a natural force, or an instrument (Levin and Rappaport Hovav 1995:91-3).

One major difference between the contentions of Smith and those of Levin and Rappaport Hovav has to do with how we perceive the eventuality denoted by the ergative use of a verb. For instance, with the sentence *The vase broke*, Smith claims that the vase can break spontaneously with no intervention of an outside cause. Levin and Rappaport Hovav, on the other hand, argue that our real world knowledge tells us that the vase could not break without an external cause (1995:93). In their views, even in sentences like the following, the eventualities are perceived as being brought about by some external cause, which Levin and Rappaport Hovav identify with the Theme arguments *plate* and *door* themselves (cf. Kageyama 1996).

(47) a. The plate broke by itself.

b. The door opened by itself. (Levin and Rappaport Hovav 1995:88)

I would argue that the existence of an external cause is highly unlikely in sentences like (47). Rather, it seems more natural to assume that, as Smith argues, eventualities represented by ergative verbs could occur independently or spontaneously. In short, I would claim that Smith's dual semantic features of independent activity and external control differentiate ergative verbs from non-alternating causative change-of-state of verbs like *cut* and *destroy* more properly.

3.4.4 Onset Causation vs. Extended Causation

Shibatani (1973a) notes that two types of causation are observed cross-linguistically. When causation serves as an initial impulse so that the event denoted by a given verb follows, this type of causation is referred to as *ballistic*. On the other hand, if

causation is responsible not only for the instigation of the event but also for its entire process, then the causation is referred to as *controlled*. Drawing on the English verbs *send* and *bring/take*, Shibatani describes the former as an example of ballistic causation and the latter as that of controlled causation. While Shibatani does not specifically mention the two types of causation in relation to ergative alternation, his theory lays the foundations for subsequent studies of ergative pairs along this line (cf. McCawley 1976, Talmy 1985b).

Van Voorst (1993, 1995) and Kiparsky (1997) utilize the two types of causation to account for the alternatability of verbs. When transitive verbs are available for the ergative alternation, the external causers of the verbs are ballistic, a causation type characterized by Talmy (1985b) as *onset causation*. Under the concept of onset causation, the agents or external causers occurring with ergative transitives merely initiate events, lacking full control of the events ensuing after the initiation.¹⁴ By contrast, when transitive verbs fail to alternate with intransitive uses, the verbs' external causers are likely to control the events that follow, the other causation type characterized as *extended causation* (Talmy 1985b). Under the concept of extended causation, agents or external causers continue to participate in the entire process of an eventuality.¹⁵ Based on the two

¹⁴ Due to the nature of the causation, the agents or external causers may also be referred to as “instigator” (Wilkins and Van Valin 1993).

¹⁵ Maruta (1998:100) schematizes the LCSs of onset causation and extended causation as follows:

- (i) a. [x ACT ON y] INITIATE [y...] (x = Initiator)
- b. [x ACT ON y] CAUSE [y...] (x = Extended Causer)

What characterizes Maruta's templates are the use of 'INITIATE' as the connector between the two sub-events and the characterization of the external argument *x* as 'Initiator,' while the connector for non-alternating causative verbs is simply 'CAUSE.'

differing types of causation, Kiparsky (1997) analyzes the contrasting behaviors exhibited by *smear* and *splash* (cf. Hale and Keyser 1993, 1997).

(48) a. Mary smeared paint on the wall.

b. #Paint smeared on the wall.

(49) a. Mary splashed paint on the wall.

b. Paint splashed on the wall. (Kiparsky 1997:494)

In Kiparsky's terms, *smear* is grammatically anomalous in intransitive constructions in that *smear* denotes "a process requiring the initiation and continuous participation of a causing Agent" (1997:495), while *splash* does not entail such extended causation.¹⁶ Kiparsky adds that the same analysis also applies to the lack of the intransitive use in other verbs like *shelve*, *paint*, *ring*, *put*, *push*, and *kick*.

In light of the distinction between onset and extended causation, the two external causation verbs *break* and *cut* seem to be distinguishable with respect to the availability of the ergative alternation. That is, the event of breaking is seen as that of onset causation, continuing independently or autonomously after the initial physical force by an external agent or cause. The event of cutting, on the other hand, is seen as that of extended causation since some external agent or instrument needs not only to initiate the event but also to continue participating in the entire process of the event. The concept of onset and extended causation might also explain the lack of the intransitive use of *destroy* since the verb requires incessant intervention of an external agent or causer until the completion of the event (cf. Maruta 1998:100).

¹⁶ Hale and Keyser (1993, 1997) analyze *smear* and *splash* in terms of the lexical licensing of manner component (cf. Section 3.5.2).

3.5 Lexical Specification

In this section I propose that the notion of agentivity is still a key factor in accounting for the alternatability of verbs. Instead of limiting our attention to decomposing agentivity into multiple semantic components (cf. Section 3.4.2.3), however, I suggest that agentivity is a minimal unit simply meaning ‘volition.’ Based on this view, I would argue that agentivity can be associated with a variety of inanimate entities such as instruments as long as they are used by volitional agents (Levin and Rappaport Hovav 1995). Such association enables agentive *cut* verbs, which inherently entail the use of instruments, to take instruments as subjects. Consequently, I will propose that the specification of an instrument or a means involved in the realization of an event is another semantic factor in determining whether a given verb of change of state can undergo the ergative alternation.

3.5.1 Lexicalization of Instrument

3.5.1.1 Case theory

It has been noticed in the literature that the verb *cut* lexicalizes the use of an instrument (‘cutting device’) during the course of the event denoted by the verb (Guerssel et al. 1985:51-2, Hale and Keyser 1987:5, Brousseau and Ritter 1991, Levin and Rappaport Hovav 1992:137, 1995:107, Levin 1993a, 1993b, Rappaport Hovav and Levin 1998:100ff). Traditionally, the use of an instrument associated with verbs has been considered an important component of thematic roles. In a framework of Case Grammar, Fillmore (1968b) recognizes a need to include the case of Instrumental in addition to the cases of Agent and Object when schematizing transitive event verbs like *open*.¹⁷

¹⁷ In more modern terminology, Instrumental, Agent, and Object are comparable to instrument, agent, and patient/theme, respectively.

(50) *open*: + [____ O (I) (A)]

In (50), it is crucial that Instrumental and Agent, which are in parentheses, are optional cases. Consequently, the following constructions are made possible.

(51) a. John opened the door with a key. ([____ O I A])

b. John opened the door. ([____ O A])

c. The key opened the door. ([____ O I])

d. The door opened. ([____ O])

One crucial point of Fillmore's schematization is that the absence of a case results in the absence of the argument associated with the case and accordingly the absence of the meaning associated with the argument as well. Thus, the absence of the Instrumental *key* as in (51b) and (51d) makes it almost improbable for us to interpret the whole sentence as involving the use of a key.

One problem arises when Fillmore's schematization is applied to verbs like *cut*. In fact, Langendoen (1970:72) describes the basic case structure of *cut* as follows:

(52) *cut*: Patient, Result, Instrument, (Agent)

Notice that in (52) Instrument is an obligatory case. Since Langendoen appears to follow Fillmore in assuming that obligatory case means obligatory syntactic realization, the case frame in (52) postulates that sentences containing the verb *cut* need to occur with some form of instrument overtly. Thus, in considering the sentences *The boy cut the cloth with the scissors* and *The scissors cut the cloth* to be grammatical, Langendoen follows this principle. However, whether deliberately or not, he fails to mention that a sentence like *The boy cut the cloth* is also grammatical, although no instrument is syntactically

expressed. In short, Fillmore and Langendoen are of the opinion that there are no ambiguous relations between case roles and their syntactic realizations of arguments.

3.5.1.2 Lexical Conceptual Structure (LCS)

Instead of utilizing thematic roles, Guerssel et al. (1985) draw on the framework of LCS, describing the indispensable association of an instrument with *cut* as follows:

(53) *cut* LCS: x produce CUT on y, by sharp edge coming
into contact with y

(Guerssel et al. 1985:51)

On their view, the use of a sharp instrument is posited as part of the inherent lexical meanings of *cut* (See also Hale and Keyser 1986, 1987).¹⁸ In other words, even if a cutting device does not syntactically occur with *cut*, the sentence implies underlyingly that the event of cutting is caused by the use of a certain cutting device.

- (54) a. Tom cut the cake in half.
b. I cut my face while I was shaving.
c. The phone wires were cut by the thieves.

¹⁸ In the schematization of *cut*, it is important to make a distinction between instruments and natural forces. This may be illustrated by the fact that a cutting device can be the subject of the verb *cut*, whereas natural forces cannot.

(i) a. The knife cut the bread.

b. *The lightning cut the clothesline. (Levin and Rappaport Hovav 1995:103)
Levin and Rappaport Hovav assume that agentivity is still the key to the eligibility of a syntactic subject of *cut*. In their term, the use of a cutting device like a knife is naturally associated with a volitional agent who has control over it. Schlesinger (1995) attributes the acceptability of the instrumental subject to the additional feature CAUSE associated with INSTRUMENT.

While no instruments are overtly expressed in (54), each sentence implies the use of some form of cutting device, such as a knife in (54a), a razor in (54b), and perhaps a pair of scissors or a knife in (54c).¹⁹

On the other hand, the LCS of *break* does not contain such a delineation of a cutting device (Guerssel et al. 1985:55):

(55) *break* LCS: x CAUSE (y come to be BROKEN)

Given the sentence *Tom broke the vase*, therefore, it is not obvious how Tom caused the event; Tom could have broken the vase by hammering it or by knocking it off from a table by accident, or perhaps he might have broken it by smashing it against the wall. The crucial point to be made underlying the LCS in (55) is that in order for the event denoted by *break* to take place the use of an instrument is not obligatory.

3.5.2 Specification of Cause or Means

As observed above, the key difference between Case Grammar and LCS regarding the lexical representations of verbs is that LCS views the lexicalized semantic features as being preserved throughout derivations. This position is more clearly expressed by Levin and Rappaport Hovav (1994, 1995) under the notion of *specification* (cf. Van Voorst 1995). It is noted that verbs sharing certain lexically specified properties syntactically behave differently from those, even if they appear semantically close, that lack such specified properties. For instance, as pointed out by Gropen et al. (1991), the verbs *fill* and *pour* are semantically relatively similar in that both describe, roughly

¹⁹ Ravin (1990:214) maintains that in a sentence like the following, *cut* does not specify the use of any instrument:

(i) The broken window cut John's finger (on the interpretation of "John brushes his finger against the glass")

Ravin explains that unless any autonomous causative argument exercising the action of cutting is specified the verb is not considered to entail the use of an instrument.

speaking, the act of putting substance into some sort of container. They are observed, however, to behave contrastively in the following ways:

(56) a. fill the glass with water

b. *fill water into the glass

(57) a. *pour the glass with water

b. pour water into the glass (Gropen et al. 1991:155)

One explanation offered by Gropen et al. about the contrastive behaviors is that *pour* specifies the manner in which a substance is transferred, while *fill* does not necessarily entail such a specific manner involved in the act (Gropen et al. 1991:160-1).

Building on the concept of specification, Levin and Rappaport Hovav (1994, 1995) explain the differing syntactic behavior of *break* and *cut* regarding the ergative alternation. On their view, *cut* lexically specifies the use of a sharp instrument in its LCS as shown in (53) above and its use should be implicitly, if not explicitly, presumed at all subsequent levels of derivation. On the other hand, since *break* does not specify the use of an instrument in the LCS, the manner in which the event of breaking occurs remains unknown unless specified by some other means such as adjuncts. As mentioned in Section 3.4.2 above, Levin and Rappaport Hovav (1995) attribute the lack of specification of a causer or a causing event for *break* to the fact that *break* can take a range of subjects such as instruments and natural forces.

On the same principle, Levin and Rappaport Hovav (1992b:131) discuss the distinction between *wipe* verbs and *clear* verbs. That is, *wipe* verbs such as *erase*, *mop*, *rinse*, *scour*, *vacuum*, and *wipe*, which lexicalize a manner or an instrument component, do not alternate with intransitive uses, whereas *clear* verbs such as *clear*, *clean*, and

empty, which do not lexicalize a manner or an instrument component, do occur in intransitive construction. Similarly, from the perspective of manner-instrument Hale and Keyser (1993:90, 1997:54) and Kiparsky (1997:494) account for the unalternability of *smear*-class verbs, which contrast with alternating *splash*-class verbs.

Given the view of specification, I argue that in considering the contrast between *break* and *cut* the concept of agentivity is too broad and ambiguous for us to capture. Instead, my proposal is that the concept of specification is more straightforward in differentiating the two verbs semantically.²⁰ I will demonstrate later in this chapter that the lexical specification of means explains the alternability of many change-of-state verbs not only in English but also in Japanese. The generalization to be drawn from the arguments provided so far might be that lexical specification of an instrument or a means plays a key role in determining the syntactic realization of the argument structure associated with an event verb.

3.6 Conditions for Ergative Alternation: Japanese

In the previous sections, we have observed that verbs that participate in the ergative alternation in English are semantically characterizable to a large extent. The question to be addressed in the remainder of this chapter is whether the semantic analysis

²⁰ The notion of semantic specification described above does not explain all alternating phenomena. There are still several verbs which appear to be evidence against our account. The verb *kill*, which has raised a problem with the analysis of agentivity, still resists our analysis of semantic specification (Brousseau and Ritter 1991:56-67). That is, the verb does not specify a means or an instrument lexically whereby the act of killing is performed. For instance, when we say *Tom killed the senator*, it is simply impossible to determine how Tom carried out the act unless provided with additional information contextually. In this respect, *kill* is comparable to *break*, but it fails to undergo the ergative alternation (see Section 3.4.2.1 above). I would argue that the verb *kill* is a matter of lexical idiosyncrasy with regards to ergative alternation.

provided for the English ergative alternation may also account for the alternatability of verbs in Japanese.

3.6.1 Change of State

Like in English, many verbs that participate in the ergative alternation in Japanese involve change of state (Miyajima 1972, Nishio 1978, 1982, Hayatsu 1987, 1995, Jacobsen 1992, Mitsui 1992, Mitsunobu 1992). For instance, it is observed that Jacobsen's (1992) Class I verbs contain several verbs of physical change of state, which correspond to Levin's (1993a) *break* class verbs.²¹

| (58) <i>break</i> verbs (Levin 1993a) | Class I (Jacobsen 1992) | |
|---------------------------------------|-------------------------|---------|
| | TRANS | INTRANS |
| break | war- | ware- |
| | or- | ore- |
| tear (off) | yabur- | yabure- |
| | tigir- | tigire- |
| | sak- | sake- |
| smash | kudak- | kudake- |

Furthermore, a number of Japanese de-adjectival verb pairs such as *hukamar-/hukame-* 'deepen' and *katamar-/katame-* 'harden,' which usually express a gradual change of state, belong to Jacobsen's Class III. In short, one may state that change of state is the key semantic property of Japanese ergative pairs.

Hayatsu (1995) emphatically illustrates this point by comparing two semantically similar verbs *kawakas-* and *hos-*. According to Hayatsu, both verbs are transitive and generally understood to mean 'to dry.' While the English *dry* ergativizes, only *kawakas-* does so in Japanese.

²¹ Teramura (1982:271ff) does not consider the verbs of this group ergative pairs. Instead, he refers to them as *zihatutai* ('inchoative voice'), arguing that the intransitive members of the verbs of this group are derived from the transitive bases mediated by the suffix *-e* (e.g., *ware-* ← *war-* 'break').

- (59) a. Tom dried his clothes in the sun.
 b. His clothes dried in the sun.
- (60) a. Taroo-wa huku-o kawakas-ita. (< kawakas + ta)
 Taro-TOP clothes-ACC dry-PAST
 ‘Taro dried his clothes’
 b. Huku-ga kawai-ta. (< kawak- + ta)
 clothes-NOM dry-PAST
 ‘The clothes dried’
- (61) a. Taroo-wa huku-o hos-ita.
 Taro-TOP clothes-ACC hang to dry-PAST
 ‘Taro hung his clothes out to dry’
 b. *Huku-ga hosat-ta. (< hosar- + ta)
 clothes-NOM hang out to dry-PAST
 ‘The clothes hung out to dry’

Hayatsu points out that *hos-* lacks its intransitive counterpart since it does not inherently entail the resultant state of dryness, whereas *kawakas-* does (1995:179-180). This will be illustrated more clearly by the following examples:

- (62) a. Taroo-wa huku-o hosi-te kawakas-ita.
 Taro-TOP clothes-ACC hang-and let dry-PAST
 ‘Taro hung his clothes and let them dry’
 b. *Taroo-TOP huku-o kawakasi-te hos-ita.
 Taro-TOP clothes-ACC let dry-and hang out-PAST
 ‘Taro let his clothes dry and hung them out’

Thus, it will be more appropriate for *hos-* to be translated into ‘hang out (to dry).’ In short, the differing syntactic behaviors demonstrated by *kawakas-* and *hos-* in (60) and (61) seem to point to the significance of change of state in determining the alternatability of verbs in Japanese. Following the contrast between *kawakas-* and *hos-*, Hayatsu (1995:182) lists Japanese verbs that alternate in transitivity, noting that many of them involve certain change of state or position.

- (63)
- | | |
|-------------------------------------|------------------------------------|
| ore- “break _{in} ” | or- “break _{tr} ” |
| kire- “get cut off, severed” | kir- “cut, sever” |
| kuzure- “collapse” | kuzus- “demolish” |
| tubure- “get crushed” | tubus- “crush” |
| magar- “bend _{in} ” | mage- “bend _{tr} ” |
| koware- “break _{in} ” | kowas- “break _{tr} ” |
| yabure- “tear _{in} ” | yabur- “tear _{tr} ” |
| ware- “break _{in} ” | war- “break _{tr} ” |
| tizim- “shrink” | tizime- “reduce” |
| nobi- “get extended” | nobas- “extend” |
| hirogar- “spread _{in} out” | hiroge- “spread _{tr} out” |
| katamar- “harden _{in} ” | katameru “harden _{tr} ” |
| nie- “boil _{in} ” | nir- “boil _{tr} ” |
| yake- “burn _{in} ” | yak- “burn _{tr} ” |
| koge- “get scorched” | kogas- “scorch” |
| same- “cool” | samas- “cool” |
| kawak- “dry _{in} ” | kawakas- “dry _{tr} ” |
| nure- “get wet” | nuras- “make wet” |
| yogore- “get dirty” | yogos- “soil” |
| somar- “get dyed” | some- “dye” |
| kimar- “get decided” | kime- “decide” |
| sadamar- “get decided” | sadame- “decide” |
| hazimar- “begin _{in} ” | hazime- “begin _{tr} ” |
| tomar- “stop _{in} ” | tome- “stop _{tr} ” |
| okor- “happen” | okos- “cause” |
| kie- “go out” | kes- “extinguish” |
| horobi- “go to ruin” | horobos- “destroy” |
| tae- “die out” | tayas- “exterminate” |
| agar- “rise” | age- “raise” |
| nagare- “flow” | nagas- “wash away” |
| utur- “move” | utus- “move” |
| oti- “fall” | otos- “drop” |
| ori- “get off” | oros- “let off” |
| korogar- “roll _{in} ” | korogas- “roll _{tr} ” |
| sagar- “get lower” | sager- “lower” |
| sizum- “sink _{intr} ” | sizumer- “sink _{tr} ” |
| tore- “get taken, harvested” | tor- “take, harvest” |
| nuke- “come out” | nuk- “pull out” |
| hazure- “come off” | hazus- “take off” |
| hagare- “peel” | hagas- “peel” |
| hage- “peel _{in} off” | hag- “peel _{tr} off” |
| hanare- “move away from” | hanas- “separate from” |
| hodoke- “come untied” | hodok- “untie” |
| moge- “come off” | mog- “pluck off” |
| hair- “enter” | ire- “put in” |
| tuk- “adhere to” | tuke- “attach” |

| | |
|---|---|
| uwar- “get planted” | ue- “plant” |
| umar- “be buried” | ume- “bury” |
| osamar- “subside” | osame- “pacify” |
| tumar- “get packed” | tume- “pack” |
| kakar- “hang _{in} , come in contact” | kake- “hang _{tr} , put in contact” |
| kasamar- “pile up _{in} ” | kasane- “pile up _{tr} ” |
| kabasar- “get covered” | kabuse- “cover” |
| sonawar- “get provided” | sonae- “provide with” |
| hamar- “fit _{in} into” | hame- “fit _{tr} into” |

Based on the list above, Hayatsu characterizes Japanese ergative pairs as “verbs that focus on a state resulting from an action” (1995:179).

As Hayatsu’s use of the word “many” indicates, there are verbs in Japanese that focus on change of state and yet fail to alternate in transitivity. Mitsunobu (1992:76) brings up this point, providing a list of transitive verbs which, while they imply change of state, lack intransitive counterparts.

- (64) hur- “shake,” tutum- “wrap,” huse- “lay down,” mak- “wind,” migak- “polish,” susug- “rinse,” musub- “tie,” tog- “sharpen,” sibor- “squeeze,” nur- “paint,” hos- “dry,” kizam- “mince,” ara- “wash,” mog- “pluck,”²² kar- “mow,” tukuro- “mend,” hakob- “carry,” hik- “pull,” nager- “throw,” kazar- “decorate,” am- “knit,” sik- “lay,” kosirae- “make,” har- “paste”

While the verbs listed above still raise an issue of how to define change of state,²³ Mitsunobu correctly points out that some apparent change-of-state verbs like *kizam-* and *tog-* fail to alternate with intransitive counterparts. The next question that needs to be addressed is whether there are other semantic properties that contribute to the distinction

²² The transitive *mog-* is paired with *moge-* in Jacobsen (1992) and Hayatsu (1995).

²³ For instance, the following example shows that *migak-* does not necessarily entail change of state.

(i) Kutu-o migai-ta kedo, yogore-wa oti-nak-atta
 shoe-ACC polish-PAST but stain-NOM come off-NEG-PAST
 ‘(I) polished the shoes, but the stain did not come off’

between non-alternating verbs as in (64) and an enormous number of alternating verbs in Japanese.

3.6.2 Specification of Instrument and Means

Towards the end of her 1995 article, Hayatsu also points out that there are several transitive verbs that express change of state but yet do not alternate in transitivity. In addition to *kizam-* ‘mince’ (cf. (64)), Hayatsu lists the verbs *kar-* ‘cut (with a sickle),’ *nag-* ‘cut horizontally (with a sickle),’ and *tat-* ‘cut with scissors,’ which I would refer to as Japanese verbs of cutting. As correctly observed, they all describe physical changes of state brought about in Themes but have no intransitive counterparts.

- (65) a. Taroo-wa kyuuri-o komakaku kizan-da. (< kizam- + ta)
 Taro-TOP cucumber-ACC into small pieces cut-PAST
 ‘Taro cut cucumbers (up) into small pieces (with a knife)’
- b. *Kyuuri-ga komakaku kizamat-ta. (kizamar- + ta)
 Cucumber-NOM into small pieces get cut-PAST
 ‘Cucumbers got cut (up) into small pieces (with a knife)’
- (66) a. Taroo-wa kusa-o kat-ta (< kar- + ta)
 Taro-TOP grass-ACC cut-PAST
 ‘Taro cut the grass (with a sickle)’
- b. *Kusa-ga kare-ta (< kare- +ta)
 grass-NOM get-cut-PAST
 ‘The grass got cut’
- (67) a. Taroo-wa kama-de kusa-o nai-da. (< nag + ta)
 Taro-TOP sickle-with grass-ACC cut-PAST
 ‘Taro cut the grass horizontally with the sickle’
- b. *Kusa-ga nagat-ta. (< nagar- + ta)
 grass get get cut-PAST
 ‘The grass got cut horizontally’
- (68) a. Taroo-wa katagami-ni sotte nuno-o tat-ta.
 Taro-TOP pattern-along cloth-ACC cut-PAST
 ‘Taro cut the cloth along the pattern (with the scissors)’

- b. *Katagami-ni sotto nuno-ga tatat-ta. (< tatar- + ta)
 pattern-along cloth-NOM get cut-PAST
 ‘The cloth got cut along the pattern (with the scissors)’

Hayatsu maintains that the transitive verbs in (65) – (68) lack intransitive counterparts since they are provided with a wide range of information about the process of cutting (1995:192-3). For instance, *kizam-* in (65) specifies the manner of cutting an object (i.e., use of a knife) and the resulting state of an entity after being cut (i.e., small pieces). In a similar vein, the semantics of *nag-* in (67) include a type of object (i.e., grass) and a means (i.e., sickle) in addition to the fundamental meaning of cutting. Given these examples, Hayatsu generalizes that most verbs of cutting in Japanese fail to alternate in transitivity since they provide detailed information on what are involved in the courses of actions denoted by the verbs (e.g., manner, type of object, instrument, etc.).

Fundamentally, I concur with Hayatsu’s analysis of Japanese non-alternating verbs of cutting. My position, however, is crucially different from Hayatsu’s in that the semantic property shared by those non-alternating verbs could be minimally characterized as the entailment of the use of an instrument. Additional change-of-state verbs that lexicalize the use of an instrument follow:

- (69) a. Taroo-wa daikon-o (orosigane-de) oros-ita.
 Taro-TOP radish-ACC (grater-with) grate-PAST
 ‘Taro grated the radish (with the grater)’
- b. *Daikon-ga (orosigane-de) or-ita.
 radish-NOM (grater-with) get grated-PAST
 ‘The radish got grated well (with the grater)’
- (70) a. Taroo-wa koohimame-o hii-ta. (< hik- + ta)
 Taro-TOP coffee bean-ACC grind-PAST
 ‘Taro ground the coffee beans’

- b. *Koohiimame-ga hik-eta.
 coffee bean-NOM get ground-PAST
 ‘Coffee beans got ground’
- (71) a. Taroo-wa enpitu-o kezut-ta. (< kezur- + ta)
 Taro-TOP pencil-ACC sharpen-PAST
 ‘Taro sharpened a pencil’
- b. *Enpitu-ga kezur-eta.
 pencil-NOM get sharpened-PAST
 ‘The pencil got sharpened’
- (72) a. Taroo-wa hootyoo-o toi-da. (< tog- + ta)
 Taro-TOP knife-ACC hone-PAST
 ‘Taro honed the knife’
- b. *Hootyoo-ga togat-ta. (< togar- + ta)
 knife-NOM get honed-PAST
 ‘The knife got honed’
- (73) a. Taroo-wa take-o soi-da. (< sog- + ta)
 Taro-TOP bamboo-ACC sharpen-PAST
 ‘Taro sharpened the bamboo’
- b. *Take-ga soge-ta.
 bamboo-NOM get sharpen-PAST
 ‘The bamboo got sharpened’
- (74) a. Taroo-ga goma-o sut-ta. (< sur- + ta)
 Taro-NOM sesame-ACC grind-PAST
 ‘Taro ground sesame’
- b. *Goma-ga sure-ta.
 sesame-NOM get ground-PAST
 ‘Sesame got ground’

The specificity of an instrument or a means associated with the verbs in (69) – (74) will be more highlighted when compared with the alternating physical change-of-state verbs given in (63) above, none of which presuppose the use of an instrument or a means in order for an event to take place. Evidence for this claim is that the events denoted by these verbs can occur in a variety of ways, as illustrated below:

- (75) a. Taroo-wa kabin-o yuka-ni otosi te wat-te simatta.
Taro-TOP vase-ACC floor-onto drop and break-PAST
'Taro dropped the vase and broke it'
- b. Taroo-wa kabin-o kanazuti-de wat-ta.
Taro-TOP vase-ACC hammer-with break-PAST
'Taro tore apart the paper with his hands'
- c. Odoroitakoto-ni Taroo-wa sude-de kabin-o wat-ta.
surprisingly Taro-TOP bare hand-with vase-ACC break-PAST
'Surprisingly, Taro broke the vase with his bare hands'

3.6.3 Inanimate Subjects

In the preceding section, we have observed that lexical specification of the use of an instrument prevents a causative transitive verb from ergativizing in Japanese. Given this observation, one may question how we can tell whether a given verb is lexically specified in terms of the use of an instrument. We observed above that English verbs with a lexically specified instrument are restricted in terms of choices of syntactic subjects, almost limited to animate or quasi-animate agents (Section 3.4.2). In this section, we investigate Japanese alternating verbs, demonstrating that the criterion of animate vs. inanimate syntactic subjects is not valid for Japanese causative transitive verbs in most cases. Instead, I propose that the specification of an instrument depends entirely on our lexical knowledge of verbs.

It has been noted in the literature that unlike English many languages do not allow non-volitional agents such as natural forces and instruments to occur as transitive subjects (Delancey 1984:203, Croft 1990:59; cf. Talmy 1976:45, Langacker 1991:332). Japanese is among those languages (Yoshikawa 1995). For instance, the ergative transitive *war-* 'break,' for instance, precludes an inanimate entity from occurring as subject, as illustrated below.

- (76) a. #Zisin-ga mado-o wat-ta.
 earthquake-NOM window-ACC break-PAST
 ‘The earthquake broke the window’
- b. *Ono-ga mado-o wat-ta.
 ax-NOM window-ACC break-PAST
 ‘The ax broke the window’
- c. *Booru-ga atat-ta-koto-ga mado-o wat-ta.
 ball-NOM hit-PAST-GER-NOM window-ACC break-PAST
 ‘The ball’s hitting broke the window’

None of the events of “breaking” in (76b-d) are brought about directly by an animate cause. Instead, they occur due to a natural force (*earthquake*), a physical contact with a tool (*ax*), or a causing-event causation (*ball’s rolling*). Note that Japanese has a strong tendency to describe events brought about by inanimate causes as intransitive events, placing affected themes in subject positions. De-subjectivized causing events are in turn represented in the form of an adverbial (77a) or a clause (77b-c).

- (77) a. Zisin-no seide mado-ga ware-ta.
 earthquake-GEN due to window-NOM break-PAST
 ‘Due to the earthquake the window broke’
- b. Ono-ga atat-te mado-ga ware-ta.
 ax-NOM hit-and window-NOM break-PAST
 ‘The ax hit the window and the window broke’
- c. Booru-ga korogat-te kabin-ni atari kabin-ga ware-ta.
 ball-NOM roll-and vase-OBL hit vase-NOM break-PAST
 ‘The rolling ball hit the vase and the vase broke’

Other Japanese equivalents to English *break*-type verbs follow the same syntactic pattern.

- (78) a. The nail tore my shirt.
- b. Syatu-ga kugi-ni hikkakat-te sake-ta.
 shirt-NOM nail-on catch-and tear-PAST
 ‘The shirt caught on the nail and it tore’

- (79) a. Too much weight fractured my bones.
 b. Zyuuryo-ga kakari sugi-te hone-ga ore-ta.
 weight-NOM on too much-and bones-NOM fracture-PAST
 ‘Too much weight was on me and my bones fractured’

Given the unacceptability or, at best, much less acceptability of inanimate causing events as syntactic subjects in Japanese, we conclude that the view that the degree of specification can be measured by the range of causing events that verbs permit does not hold for Japanese verbs (cf. Section 3.5.1.3). This in turn suggests that the degree of specification of a causer or a causing event is entirely dependent on our lexical knowledge of verbs.

3.6.4 *Kir-/kire-* ‘cut/get cut’

Another ergative pair *kir-/kire* ‘cut/get cut,’ which appears to show inconsistent alternating behaviors at first blush, lends support to utilizing the concept of lexically-specified instrument as a determining factor of verb’s alternatability in Japanese. Unlike the English verb *cut*, the Japanese corresponding contact-effect verb *kir-* ‘cut’ is morphologically related to the intransitive equivalent *kire-*, displaying a typical pattern of ergative alternation.

- (80) a. Taroo-ga ito-o kit-ta.
 Taro-NOM thread-ACC cut-PAST
 ‘Taro cut the thread’
 b. Ito-ga kir-eta.
 thread-NOM get cut-PAST
 ‘The thread got cut’
- (81) a. Akira cut the thread.
 b. *The thread cut.

It is interesting note that there are cases in which the Japanese *kir-* behaves exactly the same way as the English *cut* does. In the following examples, the Japanese *kir-* does not alternate with the intransitive *kire-*.

(82) a. Taroo-wa keeki-o kit-ta.
Taro-TOP cake-ACC cut-PAST
'Taro cut the cake'

b. *Keeki-ga kire-ta.
cake-NOM get cut-PAST
'The cake got cut'

(83) a. Niwasi-ga ki-no eda-o kit-ta
gardener-NON tree-GEN branch-ACC cut-PAST
'The gardener cut the branches of the tree'

b. *Ki-no eda-ga kire-ta.
tree-GEN branch-NOM get cut-PAST
'The branches of the tree got cut' (Washio 1997:75)

Given such contradictory behaviors of *kir-/kire-*, the questions to be answered are: (1) why the ergative pair *kir-/kire-* is possible in Japanese and (2) what are the circumstances that preclude the pair from obtaining as in (82) and (83).

I propose that the specification of an instrument is the key to both questions. More specifically, when *kir-* does not alternate with *kire-*, it usually presupposes the use of an instrument even if no instrument is mentioned syntactically. Whether the pair *kir-/kire-* lexicalizes the use of an instrument is determined in part by the pair's compatibility with the adjunct *te-de* 'by hand.' That is, if the pair is incompatible with the adjunct, then it entails the use of an instrument.

(84) a. #Taroo-wa keeki-o te-de kit-ta
Taro-TOP cake-ACC hand-by cut-PAST
'Taro cut the cake by hand'

- b. #Keeki-ga te-de kire-ta
 cake-NOM hand-by get cut-PAST
 ‘The cake got cut by hand’

By contrast, when *kir-* alternate with *kire-*, no instrument is inherently specified for the verb. Thus, the alternating *kir-* in (85) can occur not only with instrumental adjuncts but also non-instrumental ones.

- (85) a. Taroo-wa ito-o te-de kit-ta
 Taro-TOP thread-ACC hand-by cut-PAST
 ‘Taro snapped the thread by hand’
- b. Taroo-wa ito-o hasami-de kit-ta
 Taro-TOP thread-ACC scissors-with cut-PAST
 ‘Taro cut the thread with the scissors’

Apparently, the type of a noun that follows determines the specification of the use of an instrument in *kir-*. That is, the object *ito* ‘thread’ in (85) can be broken by hand due to its material and thinness. The object *keeki* ‘cake’ in (84), on the other hand, is most likely associated with the use of some sort of cutting device so that each slice should be in an orderly shape. In short, it could be stated that whether the Japanese contact-effect verb *kir-* lexically specifies the use of an instrument depends on the Theme it occurs with (cf. Washio 1997:73-5).

There is another causative transitive verb *setudan-suru* ‘sever, amputate,’ a Sino-Japanese verb semantically corresponding to *kir-*, which might corroborate the argument just presented. As illustrated below, the verb never occurs in intransitive constructions under any circumstances.

- (86) a. Isya-wa Taroo-no asi-o setudan-sita
 doctor-TOP Taro-GEN leg-ACC amputate-PAST
 ‘The doctor amputated Taro’s leg’

- b. *Taroo-no asi-ga setudan-sita
 Taro-GEN leg-NOM get amputate-PAST
 ‘Taro’s leg got cut’

Following the concept of lexical specification of an instrument, I argue that sentence (86b) is unacceptable in that the action denoted by *setudan-suru* always specifies the use of a cutting device whereby an entity is severed. Such obligatory specification of a cutting device for *setudan-suru* is demonstrated by the ungrammaticality of the sentence given below.²⁴

- (87) *Taroo-wa roopu-o te-de setudan-sita.
 Taro-TOP rope-ACC hand-by sever-PAST
 ‘Taro severed the rope by hand’

To summarize, given the examples discussed above, I first proposed that the verb *kir-* should be semantically differentiated into (1) to cut something by any means and (2) to cut something by using an instrument. With the latter meaning, the verb fails to undergo the ergative alternation due to its specification of an external causer (i.e., instrument).

²⁴ In contrast to *kiru*, the verb *setudan-suru* presupposes that the affected object should always be cut into separate parts.

- (i) a. Taroo-wa himo-o hasami-de kit-ta.
 Taro-TOP rope-ACC scissors-with cut-PAST
 ‘Taro cut the rope with scissors’
 b. Taroo-wa kamisori-de hige-o sotto-ite kao-o kit-ta.
 Taro-TOP razor-with beard-ACC shave-while face-ACC cut-PAST
 ‘Taro cut his face with a razor while shaving his beard’
 (ii) a. Taroo-wa ziko-de nakayubi-o setudan-sita.
 Taro-TOP accident-in middle finger-ACC sever-PAST
 ‘Taro had his middle finger severed in the accident’
 b. *Taroo-wa kamisori-de hige-o sotto-ite kao-o setudan-sita.
 Taro-TOP razor-with beard-ACC shave-while face-ACC cut-PAST
 ‘Taro severed his face with a razor while shaving his beard’

3.6.4 Polysemy

In the preceding section we have observed that the Japanese contact-and-effect verb *kir-* shows differing syntactic behaviors regarding the ergative alternation depending on whether or not it specifies the use of an instrument lexically. In fact, it has been noticed in the literature that there are hardly any ergative verbs in Japanese which always show the alternating behavior (Nishio 1978, Kageyama 1996, Ono 2000). For example, the transitive *war-* ‘break’ does not alternate with the intransitive *ware-* when it is used in contexts like the following:

- (88) a. Taroo-wa uisukii-o mizu-de wat-ta.
 Taro-TOP whisky-ACC water-with mix-PAST
 ‘Taro mixed whisky with water’
- b. *Uisukii-ga mizu-de ware-ta.
 whisky-NOM water-with mix-PAST
 (‘Whisky mixed with water’) (Kageyama 1996:191)

More instances in which *war-* fail to alternate with *ware-* are illustrated below. Note that the transitive *war-* in (89a) and (90a) does not mean destruction of a physical material but is used more or less in a figurative sense.

- (89) a. Minna-de kanzoo-o wat-ta
 everyone-among bill-ACC split-PAST
 ‘Among everybody, (we) split the bill’
- b. *Minna-de kanzoo-ga ware-ta
 everyone-among bill-NOM split-PAST
 ‘The bill split among everyone’
- (90) a. Yokozuna-wa dohyoo-o wat-ta
 Grand champion-TOP *sumo*-ring-ACC step over-PAST
 ‘The *sumo* grand champion stepped over the ring’
- b. *Dohyoo-ga ware-ta
sumo-ring-NOM get step over-PAST
 ‘The ring got stepped over’

Other physical change-of-state ergative verbs like *yabur-/yabrer-* show the same phenomenon.

- (91) a. Taroo-wa syoozigami-o yabut-ta
 Taro-TOP sliding screen paper-ACC tear-PAST
 ‘Taro tore the sliding screen paper’
- b. Syoozigami-ga yabure-ta
 sliding screen paper-NOM tear-PAST
 ‘The sliding screen paper tore’
- (92) a. Taroo-wa yakusoku-o yabut-ta
 Taro-TOP promise-ACC break-PAST
 ‘Taro broke his promise’
- b. *Yakusoku-ga yabure-ta
 promise-NOM break-PAST
 ‘His promise broke’

Nishio (1978:175) suggests that the inconsistent behavior of a verb regarding the ergative alternation is attributed in general to polysemy of the verb. The meanings of *war-* in (89a) and (90a) above are among many other meanings that are associated with *war-*. It is this semantic nuance in contrast to the basic meaning of physical destruction that prevents the alternation of *war-* as in (89b) and (90b).

Given this view, the question remaining to be addressed is whether there are any particular semantic properties that are more likely to trigger the alternation than others. I propose that the most probable solution to this issue will be sought in the concept of semantic drift. Miyagawa (1989a:123) originally proposed this concept to explain idiomatization of a verbal phrase consisting of a nominal and a verb (see Chapter 4, Section 4.4.1 for further discussion of idiomatization). In our current discussion, however, I would use semantic drift to mean any type of semantic shift away from the prototypical sense of a word. Under this assumption, the phenomenon of semantic drift

might explain the ungrammaticality of (88b) above: *war-* in *uisukii-o war-* is used figuratively, drifting away from its original, basic meaning of physical destruction. The concept of semantic drift still poses a problem because it is not always clear how we should determine the basic meaning of a verb. Returning to the *kir-/kirer-* pair, it seems almost impossible to state that the act of cutting without the use of any instrument is the basic meaning or vice versa. Nevertheless, given examples of non-alternating contexts like above, I suggest that the effect of semantic drift on the alternatability of the ergative verb is worth further investigation.

3.6.5 Sino-Japanese Change-of-State Verbs

It is interesting to note that verbs that correspond to *destroy* verbs in English appear to show inconsistent behaviors in Japanese with regard to alternation. Most Japanese dictionaries gloss *destroy* as *hakai-suru* and, as expected, the verb fails to alternate in transitivity.

- (93) a. Teki-ga mati-zentai-o hakai-sita.
 enemy-NOM city-whole-ACC destroy-PAST
 ‘The enemy destroyed the whole city’
- b. *Mati-zentai-ga hakai-sita.
 city-whole-NOM get destroy-PAST
 ‘The whole city got destroyed’

Verbs like *hakai-suru* are usually referred to as light verb predicates or ‘Sino-Japanese verbs’ (Jacobsen 1992), consisting of a nominal (e.g., *hakai* ‘destruction’) and the light verb *suru* ‘do.’ It should be noted that this particular group of verbs typically show no formal change between a transitive and an intransitive use. As a consequence, just like English alternating verbs such as *break* and *smash*, the only way to tell the transitivity of such verbs is through the configuration in which they occur. In this way, the contrast

between (93a-b) is designated by the configurational parallelism characteristic of ergative pairs (see Chapter 2, Section 2.2).

Like English, Japanese has several words synonymous to *hakai-suru*. *Kadokawa Ruigo Sinziten*, a Japanese thesaurus dictionary, lists the following verbs as the synonyms of *hakai-suru*.

- (94) *hakai-suru* ‘destroy’ verbs
- | | |
|------------------------|---|
| hunsai-suru ‘destroy’ | kaimetu-suru ‘get completely destroyed’ |
| hasai-suru ‘destroy’ | zenkai-suru ‘get completely destroyed’ |
| kekkaï-suru ‘collapse’ | hookai-suru ‘collapse’ |
| tookai-suru ‘collapse’ | sonkai-suru ‘destroy; collapse’ |

As expected, none of these verbs except for *sonkai-suru* alternate in transitivity.

- (95) a. Taroo-wa dainamaito-de ganseki-o hasai-sita.
 Taroo-TOP dynamite-with rock-ACC destroy-PAST
 ‘Taro destroyed the rock with dynamite’
- b. *Ganseiki-ga dainamaito-de hasai-sita.
 rock-NOM dynamite-with get destroy-PAST
 ‘The rock got destroyed with dynamite’
- (96) a. Teiboo-ga kekkaï-sita.
 River bank-NOM collapse-PAST
 ‘The river bank collapsed’
- b. *Koozui-ga teiboo-o kekkaï-sita.
 flood-NOM river bank-ACC demolish-PAST
 ‘The flood demolished the river bank’

One main difference between English *destroy* verbs and Japanese *hakai* verbs is that more than half of the *hakai-suru* verbs given in (97) are only used intransitively (cf. Yoshikawa 1995:97-8).

- | (97) INTRANSITIVE | TRANSITIVE |
|---|-----------------------|
| ----- | hunsai-suru ‘destroy’ |
| ----- | hasai-suru ‘destroy’ |
| zenkai-suru ‘get completely destroyed’ | ----- |
| kaimetu-suru ‘get completely destroyed’ | ----- |
| kekkaï-suru ‘collapse’ | ----- |

| | |
|------------------------|-----------------------|
| tookai-suru ‘collapse’ | ----- |
| hookai-suru ‘collapse’ | ----- |
| sonkai-suru ‘collapse’ | sonkai-suru ‘destroy’ |

Such an intransitive propensity for *hakai-suru* verbs seems quite interesting. Tsujimura (1990) accounts for this phenomenon, arguing that Sino-Japanese light verbs tend to be intransitive when they have synonymous native ergative pairs (Tsujimura 1990:285).

Given that *hakai-suru* verbs can be matched to several native ergative pairs such as *kowas-/koware-* ‘break’ *kuzus-/kuzure-* ‘destroy/get destroyed’ *taos-/taore-* ‘fell/fall,’ the observation by Tsujimura seems to account for the predominance of the intransitive meaning of *hakai-suru* verbs.

Returning to the verb *hakai-suru*, the manner or means whereby the act of razing is performed is not so explicitly specified as *setudan-suru*. As a consequence, a wider variety of means or instruments are possible for the occurrence of *hakai-suru*.

- (98) a. Teki-wa kuusyuu-de mati-o kanzen-ni hakai-sita.
 enemy-TOP air raid-by city-ACC completely destroy-PAST
 ‘The enemy destroyed the city by the air raid’
- b. Isya-wa reezaa koosen-de gansaiboo-o hakai-sita.
 doctor-TOP laser-with cancer cells-ACC destroy-PAST
 ‘The doctor destroyed the cancer cells with laser’
- c. dainamaito-de biru-o kanzen-ni hakai-sita.
 dynamite-with building-ACC completely destroy
 ‘(People) completely destroyed the building with dynamite’

Yet *setudan-suru* and *hakai-suru* have one semantic property in common: as with *setudan-suru*, the action depicted by *hakai-suru* will never be carried out by a person or people without recourse any form of means.

- (99) *Taroo-ga sude-de kuruma-o hakai-sita.
 Taro-NOM bare hand-by car-ACC demolish-PAST
 ‘Taro demolished the car by his bare hands’

Based on the observations above, I propose that we focus more on the use of instruments which is lexically specified by each verb, as evident in the glosses.

3.7 Summary

In this chapter, I presented a lexical semantic analysis of ergative verbs in English and Japanese. Firstly, I reviewed and discussed the past research on English ergative alternating pairs, focusing on the fact that a large number of verbs that participate in the ergative alternation show significant semantic consistencies. Here I focused particularly on change of state and lack of agentivity. Then I emphasized the importance of exploring semantic properties that might prevent verbs from alternating in transitivity. Various theoretical frameworks such as Case Theory and LCS were shown to suggest that specification of means plays a key role in determining the alternatability of transitive verbs with intransitive uses. I demonstrated that an instrument, for instance, is almost always associated with agentivity due to the inseparable connection existing between the two. Such association served as evidence for our claim that agentivity is a key concept that we need to consider in discussing the ergative alternation. Furthermore, I proposed that the distinction between onset causation versus extended causation seems greatly promising to future research on ergative verbs and their behaviors in English.

My investigations of Japanese ergative pairs based on the research findings from English proved to account for the alternating behaviors of many verbs, on the one hand, but pointed to several crucial differences between the two languages, on the other. As for the similarities, it was demonstrated that change of state is the key semantic property in Japanese as well, enabling us to explain why verbs that do not inherently entail the semantic property fail to transitively alternate. Furthermore, I demonstrated that

specification of an instrument or a means whereby an event is carried out seems to be more vital in describing certain transitive change-of-state verbs which, under no circumstances, alternate with intransitive equivalents. We demonstrated that this concept of specification of means is particularly a significant factor in observing the contradicting behaviors of *kir-/kire-* in terms of the ergative alternation. As for the differences, it is observed that the Japanese equivalents to *destroy* verbs are used predominantly intransitively. Most importantly, however, we demonstrated that Japanese is among the languages that are least likely to take inanimate subjects as causers or causing events. As will be discussed in Chapter 5, this appears to reflect a typological distinction between a 'DO' language (English) and a 'BECOME' language (Japanese).

CHAPTER 4 SEMANTIC RELATIONS BETWEEN ERGATIVE PAIRS

4.1 Introduction

We observed that the English ergative alternation is essentially the process of preserving the meaning of the verb stem between the ergative pair (see Chapter 2, Section 2.2.2; cf. Haspelmath 1993:90, Fellbaum 2000:54-55). The only semantic change involved in the process is the addition of the semantic primitive CAUSE to the ergative intransitive in the case of causativization (Guerssel et al. 1985:54-55) or the elimination of CAUSE from the ergative transitive in the case of anticausativization (Zubizarreta 1987:87-88).¹ The addition or elimination of CAUSE is structurally represented by the addition of external argument to the monadic argument structure or the deletion of the external argument from the dyadic argument structure, respectively. On this view, the English ergative alternation is exclusively a valency-changing process between a transitive and an intransitive.

In a majority of cases, the fundamental meaning of the verb stem between the Japanese ergative pair also remains the same. The pair *war-/ware-*, for instance, preserves the essential meaning 'break' and the only difference between the pair is whether the semantic feature CAUSE is involved or not. It should be noted, however, that there are a

¹ Lemmens (1998:38) claims that any type of alternation causes a semantic change between the ergative pair. The semantic change that Lemmens is concerned with, however, has more to do with the differences in how an event is construed depending on the constructions in which a verb occurs; it has no direct relevance to the lexical semantics of verbs, in which my concern lies in the current study.

number of ergative pairs in Japanese in which the core meaning of the verb stem between the pair does not seem to hold the strong semantic link as observed in *war-/ware-*. For instance, the alternation between *kome-* ‘fill (as in ‘fill a gun with bullets’)' and *kom-* ‘become crowded,’ which Jacobsen (1992) classifies under Class II in his list of ergative pairs, apparently involves further semantic changes besides the addition or deletion of CAUSE (henceforth I call semantically inconsistent pairs like *kome-/kom-* ‘opaque’ as opposed to semantically close-related like *war-/ware-* ‘transparent’).

The objective of this chapter is to reanalyze the Japanese morphological pairs provided by Jacobsen (1992) in terms of whether or not they hold transparent semantic relations. Given the substantial number of opaque ergative pairs in Japanese, I first suggest that Jacobsen’s list of ergative pairs be divided into two groups, with the first group including pairs whose semantic relationships are transparent, and the second group including pairs whose semantic relationships are opaque.² Furthermore, I will argue that transparent ergative pairs which show semantic, as well as configurational, correspondence are derived post-lexically, in contrast to opaque ergative pairs which are stored in the permanent lexicon. The idea of dual levels of derivation will serve to bring to our attention the semantic relationships between ergative pairs, an area of research which, in my view, has not yet received due attention. In so doing, I will propose that it is

² Fagan (1988:200) also recognizes dual levels of ergative pairs, that is the Dynamic Lexicon and the Static Lexicon. In his terms, verb pairs like *lie/lay* belong in the Static Lexicon, whereas the ergative *centralize* belongs to the Dynamic Lexicon. Fagan’s approach, however, crucially differs from mine in that Fagan recognizes the different types of lexicon on the basis of whether a given ergative pair is correlated through a productive rule as observed in Ergative Formation (e.g., affixation of *-ize*) or Middle Formation.

possible to place less emphasis on the role of derivational morphology in connection with the Japanese ergative alternation (cf. Jacobsen 1992:54).

The organization of this chapter is as follows. In Section 4.1, we reconsider Jacobsen's lexicalist view of Japanese ergative pairs. Based on previous research on their productivity and predictability, I argue that not all Japanese ergative pairs should be considered separate lexical items. In Section 4.2, we review two opposing views of English ergative pairs in terms of the level of derivation: lexical versus post-lexical derivations. I emphasize that controversies over the issue of derivational level are mainly due to the fact that unlike Japanese, English does not overtly specify a change in transitivity. In Section 4.3, I demonstrate that the ergative pairs in Jacobsen (1992) are not constant in terms of semantic relationship between the pairs. My reanalysis found that 68 (about twenty percent) of the 341 ergative pairs provided by Jacobsen hold semantically opaque relationships. Drawing on idiosyncrasy or 'spuriousness' associated with certain English transitivity alternating pairs (Levin and Rappaport Hovav 1995), I suggest the possibility of setting up two distinct derivational levels for Japanese ergative pairs. In Section 4.4, based on the frameworks of Distributed Morphology (Halle and Marantz 1993) and Paradigmatic Structure (Miyagawa 1989a, 1998), I propose that ergative pairs that are semantically transparent are derived post-lexically, whereas those that are semantically opaque are derived and registered in the lexicon. Building on such dual levels of derivation, I conclude that only verb pairs that maintain semantic transparency should be considered genuine ergative pairs in Japanese.

4.2 Lexicalist View of Japanese Ergative Pairs

One main goal of previous works on Japanese ergative pairs has been to classify the pairs based on their suffixal patterns. Most recently, Jacobsen (1992) conducted an extensive analysis of them, classifying 341 transitivity ergative pairs into sixteen categories according to suffix forms (see Appendix).³ One of the conclusions that Jacobson draws from his analysis is that the derivational oppositions between ergative pairs are not productive.

The oppositions are not productive—one cannot, given an intransitive form, simply create its transitive counterpart, or vice versa, through a set rule of suffixation. (Jacobsen 1992:56)

Lack of productivity might be reflected in the fact that there appear to be no phonological or morphological rules whereby a given suffix attaches to a particular verb stem. In other words, native speakers are unable to systematically derive transitive forms from intransitives and vice versa when needs arise. For instance, if native speakers were given a hypothetical transitive verb *hamus-*, they would have no phonological or morphological clues to rely upon as to whether the verb should follow Class I pattern (*hamus-* → *hamus-e*) or Class IV pattern (*hamus-* → *hamus-ar*).⁴

³ Jacobsen notes that the ergative pairs listed in his Appendix are based on *Kenkyusha's New School Japanese-English Dictionary* (1968), with some additions from Shimada (1979).

⁴ The lack of productivity between Japanese ergative pairs will be more highlighted when compared to the productive causativizing suffix *-(s)ase*. As discussed in Chapter 2, Section 2.6.2.1, the suffix *-(s)ase-*, which can attach to almost all verbs, renders them into causative predicates, pointing to the high productivity of the suffix. With this suffix, therefore, our hypothetical verb *hamus-* is readily rendered into the causative form *hamus-ase-*.

Furthermore, Jacobsen points out that the morpho-phonological shape of a verb does not reflect the transitivity of the verb. As mentioned in Chapter 2, Section 2.3.2, Jacobsen discusses the hypothetical ergative pair *harik-/harik-e* to illustrate his point. Given that *-e* can be either a transitivizing or an intransitivizing suffix, there is simply no telling which form of the pair is transitive or intransitive. In the same vein, the transitivity of our hypothetical form *hamus-*, when paired with *hamus-e*, would become much less predictable if we knew nothing about the transitivity status of *hamus-*. In short, Jacobsen sees no reason to consider the derivational patterns of ergative pairs to be comparable to other productive derivational suffixes such as *-(s)ase* in terms of productivity and predictability. In light of the observations just described, Jacobsen (1992:56) concludes that ‘(E)ach member of a transitive/intransitive pair needs to be memorized as a separate lexical item’ (cf. Shibatani 1990:308, Kitagawa and Fujii 1999:89).

I argue that Jacobsen’s lexicalist approach to Japanese ergative pairs is somewhat an overgeneralization for the reasons that follow. Firstly, as for the lack of productivity concerning derivational suffixes, Nishio (1954) points out that the intransitivizing suffix *-ar* in Jacobsen’s Class III pattern *-ar/-e* has been comparatively productive in Japanese. According to Nishio, for example, the first use of the transitive *uke-* ‘take (an exam)’ dates back to the eighth century, whereas the intransitive counterpart *ukar-* ‘pass (an exam)’ was not listed in a dictionary until the middle of twentieth century. Nishio notes that the following ergative pairs show a similar gap with respect to the time when the pairs appear in writing for the first time (1954:43).

(1) INTRANSITIVE

TRANSITIVE

| | |
|-----------------------------------|--------------------------------|
| tutomar- ‘be fit for the role of’ | tutome- ‘play the role of’ |
| makar- ‘get a discount’ | make- ‘give a discount’ |
| iitukar- ‘be told to do’ | iituke- ‘tell (someone) to do’ |

Furthermore, Nishio claims that nonce ergative pairs like *sirabar-/sirabe-* ‘consult (a dictionary)/get consulted’ and *ikar-/iker-* ‘arrange (flowers)/get arranged’ seem acceptable to native speakers due to the productivity of *-ar*.⁵ These examples apparently serve as evidence that the intransitivizing suffix *-ar*, when paired with the transitive counterpart *-e*, has been productive in modern Japanese (cf. Shibatani 1990:235).⁶

Secondly, Jacobsen himself admits that the unpredictability of transitivity associated with ergative pairs does not apply to all cases. To the contrary, the transitivity of the ergative pair is predictable for the most part from its suffixal forms (cf. Chapter 2, Section 2.3.2). This view would be supported by the fact that the suffixes *-se(ru)*, *-os(u)*, and *-as(u)* always attach to intransitive verb stems to form transitive alternants (Jacobsen 1992:57).

- (2) a. *-se(ru)*:
 abi-se- ‘pour (over another)’ (cf. ab-i- ‘pour (over oneself)’)
 ki-se- ‘put on (another’s) body’ (cf. ki- ‘put on (one’s own) body’)
 neka-se- ‘put to bed’ (cf. ne- ‘go to bed’)
- b. *-os(u)*:
 ok-os- ‘wake up’ (cf. ok-i- ‘get up_{in}’)
 mod-os- ‘return_r’ (cf. mod-or- ‘return_{in}’)
 yog-os- ‘soil’ (cf. yogo-re- ‘become dirty’)

⁵ Miyachi (1985) illustrates that *-ar* is productive in modern Japanese not only for Class III verbs but also for Class IV *-ar/-ø*.

⁶ It may be possible to refer to relative productivity shown by *-ar* as “semi-productive,” in contrast to typical productive cases like *-(s)ase* and *-(r)are* (cf. Jackendoff 1997).

- c. *-as(u)*:
 hit-as- “soak_{tr} in” (cf. hit-ar- “soak_{in} in”)
 maw-as- “turn_{tr}” (cf. maw-ar- “turn_{in}”)
 kow-as- “break_{tr}” (cf. kow-ar- “break_{in}”)

In fact, the suffixes *-(a)s* and *-ar* represent the majority of the transitive and intransitive members, respectively, of the ergative pairs.

To summarize, it has been shown that morphological evidence does not necessarily support Jacobsen’s lexicalist-based approach to Japanese ergative pairs. Rather, the relative predictability of transitivity in relation to suffixal forms seems to point to certain productivity of ergative pairs. Such limitation of the morpho-phonological analysis requires us to seek another theoretical approach to this issue. In the next section, we consider verbs’ levels of derivation that appear to be relevant to the issue of productivity of Japanese ergative verbs.

4.3 Lexical versus Syntactic Derivations

The question of determining the level of derivation in which the ergative pair is generated has been subject to intense discussion among Western linguists. When a given transformation involves an overt, productive derivational morpheme such as the passive morpheme in English passivization, it is reasonable to say that the derivation takes place in syntax. However, where there is no overt suffix mediating between ergative transitives and intransitives but a change in transitivity apparently affects the argument structures surrounding both alternates as in English, it is bound to raise a question about whether a verb with an identical form but a different transitivity should be considered a single lexical item or two separate items. In this section, I review how scholars with different research interests view ergative pairs in terms of the level of derivation. Building on the diverse views presented below, I will propose that two levels of derivation (i.e. lexical vs.

non-lexical) be recognized for Japanese ergative pairs and that it is semantic correlation rather than morphological correspondence that determines the derivational nature of each ergative pair in Japanese.

4.3.1 Lexical Derivation

Keyser and Roper (1984) are among the scholars who first address the question of whether the ergative pairs are derived in the lexicon or in the syntax (cf. Guerssel et al. 1985). Under the theory of generative grammar, Keyser and Roper propose that ergative intransitives are derived from their transitive counterparts in the lexicon by virtue of the so-called Ergative Rule (1984:402; see also Chapter 2, Section 2.6.1.2 above). The tenet of their Ergative Rule is that Move \acute{a} , which is normally applied to passives and middles at the syntactic level, is considered to be valid at the lexical level as well in ergative formation. Keyser and Roeper maintain that the lexical nature of ergative intransitives is discernible in the fact that they are eligible for the lexical rule of Compound Formation, in contrast to the fact that the same compound formation is not possible for syntactically-derived middles (1984:391-2).

- (3) a. The boat sinks fast \rightarrow the fast-sinking boat
 b. Bureaucrats bribe easily \rightarrow *easily-bribing bureaucrats

Not all scholars concur with the view of lexical Move \acute{a} . Some simply view the ergative alternation as a result of a syntactic projection of a lexical item (Marantz 1984, Manzini 1992, Schlesinger 1995). On this view there occurs no movement of arguments; instead, it is how each argument is linked to surface grammatical positions that determines the transitivity of a verb. For instance, Manzini (1992) posits that ergative pairs are provided with two thematic-roles in the lexical representation: one is of an

obligatory internal-thematic role and the other is of an optional external thematic-role. According to Manzini, the ergative verb *sink*, for instance, is schematized as follows:

(4) *sink*: (ext. è); int. è (Manzini 1992:287)

Crucially, the distinction between the obligatory internal theta-role and the optional external theta-role is registered “uniquely at the lexicon” (Manzini 1992:287). It is simply the optional representation of the external thematic-role in the syntax, Manzini maintains, that results in the ergative alternation of *sink*.

Schlesinger (1995), on the other hand, recognizes two distinct lexical subentries for the ergative pair, listing each member in the lexicon along with its co-occurring arguments such as Agent and Theme. Under the assumption of multiple lexical subentries, it is postulated that verbs participating in the ergative alternation are provided with two separate lexical subentries, one for a transitive alternant and the other for an intransitive alternant. For instance, the lexical entry for *open* is assumed to consist of the following two subentries:

(5) *open*₁: one core argument with role of “opener”;
 features: CAUSE and CONTROL
 one core argument with role of “thing that is opened”;
 feature CHANGE.

*open*₂: a single core argument with role of “thing that opens”;
 feature: CHANGE

(Schlesinger 1995:49)

Despite the differing views of how the ergative pair is generated and represented, the analyses portrayed above are in agreement on the following idea: the distinction between ergative transitive and ergative intransitive is uniquely registered in the lexicon.

4.3.2 Post-Lexical Derivation

Others posit that the ergative alternation is not merely a realization of separate subentries of a single verb. Under the framework of lexical semantics Levin and Rappaport Hovav (1995) postulate two levels of lexical representation for ergative verbs: lexical semantic and lexical syntactic (or “argument structure,” to use Levin and Rappaport Hovav’s term) representation. Under this analysis, ergative verbs have a single causative lexical semantic representation, as illustrated below for the verb *break* (Levin and Rappaport Hovav 1995:83):

(8) *break*: [[x DO-SOMETHING] CAUSE [y BECOME *BROKEN*]]

Levin and Rappaport Hovav hold that the inchoative intransitive alternant which corresponds to the second component (‘y BECOME *BROKEN*’) of the schematization above will obtain when the external cause *x* is not projected into argument structure, a process they refer to as detransitivization. The immediate cause of detransitivization is, according to Levin and Rappaport Hovav, the binding of the external cause within the semantic lexical representation, as shown below:

(9) Intransitive *break*

| | | |
|--------------------|--|-----|
| LSR | [[x DO-SOMETHING] CAUSE [y BECOME <i>BROKEN</i>]] | |
| | ↓ | |
| Lexical binding | ∅ | |
| Linking rules | | ↓ |
| Argument structure | | <y> |

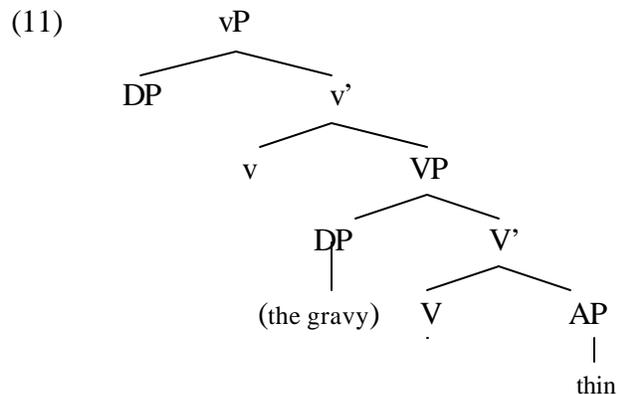
(10) Transitive *break*

| | | |
|--------------------|--|-----|
| LSR | [[x DO-SOMETHING] CAUSE [y BECOME <i>BROKEN</i>]] | |
| Linking rules | ↓ | ↓ |
| Argument structure | x | <y> |

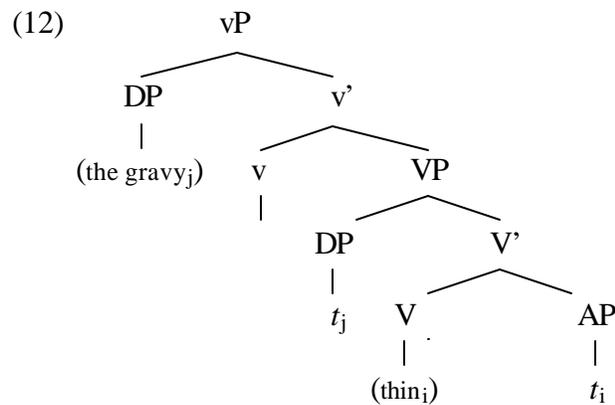
(Levin and Rappaport Hovav 1995:108)

The question that remains to be addressed is how argument structure should be characterized in terms of the level of derivation. In other words, while the association of lexical syntax with argument structure by Levin and Rappaport Hovav implies that this representational level may have to do with syntax in some way, Levin and Rappaport Hovav do not clearly assert that detransitivization should occur in syntax. However, the dual levels of representations just described enable us to view the difference in transitivity as the result of derivational process, not as a mere reflection of inherent lexical subentries. In this respect their analysis bears a resemblance to Keyser and Roeper's analysis.

Hale and Keyser (1993, 1997, 1998) discuss the level of derivation involved in the ergative alternation in a different light. One of their constant theses is that argument structure, which they refer to as lexical argument structure, is syntactic (1993:55). Building on this principle, Hale and Keyser utilize conventional syntactic tree diagrams, portraying the derivations of various types of verbs such as location verbs and ergative verbs. For instance, the fundamental representation of the de-adjectival ergative verb *thin* (*as of gravy*) is diagrammed in a complex VP structure consisting of an inner VP and an outer vP, as illustrated below (adapted from Hale and Keyser 1993:79):

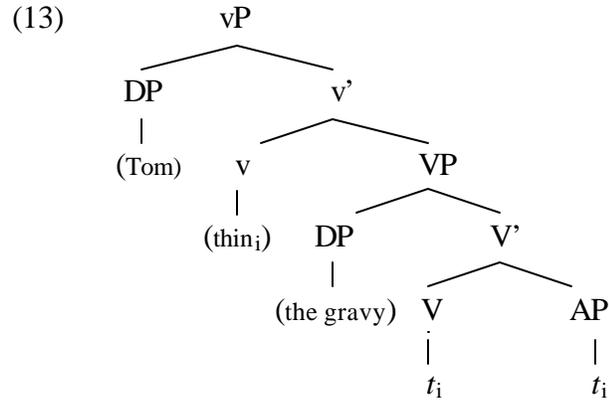


On Hale and Keyser' terms, the verbal use of *thin* is derived from its original adjective use by way of the process of conflation in accordance with head movement (1993:80), and subsequent to conflation it is the behavior of the DP *gravy* within I-syntax that determines the transitivity of the de-adjectival verb *thin*. Accordingly, the intransitive use of *thin*, which requires no external argument in [vP, DP], involves movement of *gravy* to the position, while the derived verb *thin* remains in situ, as diagrammed below (adapted from Hale and Keyser 1993:79):



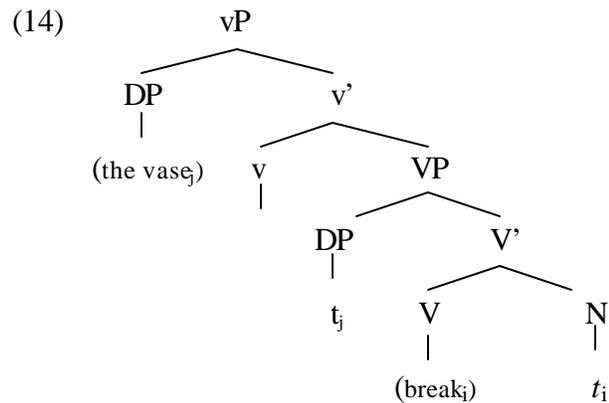
With the processes of conflation and movement, intransitive constructions like *The gravy is thinning nicely* and middles like *The gravy thins easily* will be made possible.

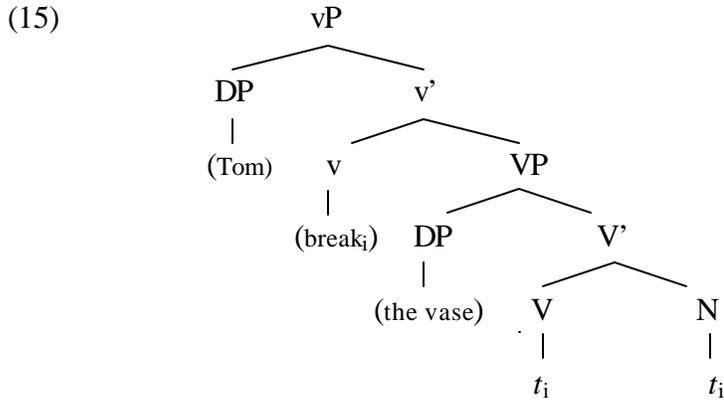
On the other hand, the transitive use of *thin* as in *the cook thinned the gravy* involves no movement of the DP *gravy*. This is because the outer DP position is occupied with the external agent *Tom*. Consequently, only the derived verb *thin* undergoes movement; specifically, to acquire a causative meaning, it moves to the outer vP, which is a null causative light verb with the same meaning as the causative verb *make*.



(adapted from Hale and Keyser 1993:72)

In a 1998 article, while assuming that *break* is a de-nominal verb Hale and Keyser adopt the concept of conflation to the ergative alternating process of the verb (1998:90). With the conflation theory, the derivations of transitive and intransitive uses of *break* follow the processes represented in (12) and (13). Thus, the sentences *the vase broke* and *Tom broke the vase* would be diagrammed as follows (adapted from Hale and Keyser 1998:110):





To summarize, we have observed that one derivational theory represented by Keyser and Roeper holds that the transitivity of a verb is specified as lexical subentries in the lexicon, whereas Levin and Rappaport Hovav and Hale and Keyser take the position that the ergative alternation is characterized as a non-lexical process. Hale and Keyser, in particular, make it clear that the alternation is strictly a syntactic phenomenon.

4.4 Semantic Approach

In Section 4.2, we observed that both productive and unproductive characteristics of derivational morphology in relation to Japanese ergative pairs make it difficult for us to conclude that the ergative pairs are unexceptionally stored in the lexicon. In Section 4.3, I demonstrated that there are basically two views of ergative verbs in English regarding the level of their derivation. One is that transitive and intransitive uses are registered as separate lexical items in the lexicon and the other is that one or both members of the ergatives are derived post-lexically or syntactically. In this section, I will suggest that semantic relationships between ergative pairs may provide a solution to this issue.

4.4.1 Semantic Discrepancies between Japanese Ergative Pairs

As I have pointed out repeatedly, the ergative pairs in Jacobsen (1992) are classified according to their derivational patterns. While Jacobsen conducts semantic analyses of the pairs in terms of markedness and aspect (see Jacobsen's (1992) Chapter 3 and Chapter 6, respectively), I suggest that other semantic aspects should be investigated regarding the Japanese ergative pairs. For instance, we have observed above (Chapter 3, Section 3.4.2) that certain semantic properties such as change of state and specification of a means have to do with the alternatability of verbs. We also observed, however, that such semantic properties of verbs do not account for the alternatability of all Japanese ergative pairs. In fact, there are a number of examples in Jacobsen's list of ergative pairs for which our semantic analysis does not provide satisfactory explanations. A certain number of pairs like *kas-/kari-* 'lend/borrow,' for instance, cannot be viewed as entailing change of state.

More importantly, however, Jacobsen's list contains a number of pairs whose semantic links seem obscure. Compare the ergative pairs *war-/ware-* 'break_{vt}/break_{vi}' and *sute-/sutar-* 'throw out/fall into disuse.' As we have seen above, the semantic relationship between *war-* and *ware-* is fairly straightforward. By contrast, as the glosses to the pair indicate, the pair *sute-/sutar-* can hardly be understood to correlate with each other in the same way as *war-/ware-*.

- (16) a. Taroo-ga gomi-o sute-ta.
 Taro-NOM garbage-ACC throw away-PAST
 'Taro threw out the garbage'
- b. Sono boosi-wa tokku-ni sutare-te iru.
 the hat-NOM long ago go out of fashion-PAST
 'The hat went out of fashion long ago'

Teramura (1982:307), Hayatsu (1987:93), Morita (1994:160-1), and Kageyama (1996:180-183), among others, discuss such semantic discrepancies between Japanese ergative pairs. Other examples that reflect a discrepancy in meaning between ergative pairs follow.⁷

| (17) INTRANSITIVE | TRANSITIVE |
|------------------------------------|---------------------------------------|
| tar- 'suffice' | tas- 'add, supplement' |
| hate- 'come to an end' | hatas- 'carry out' |
| kom- 'become crowded' | kome- 'fill with' |
| tazusawar- 'participate in' | tazusae- 'carry on one's person' |
| kogare- 'burn with passion for' | kogas- 'scorch' |
| hagem- 'be diligent in' | hagemas- 'encourage' |
| kor- 'become absorbed in' | koras- 'concentrate _{tr} on' |
| ake- 'dawn' | akas- 'spend (the night)' |
| kake- 'become lacking' | kakas- 'miss (a meeting)' |
| kure- '(day, year) come to an end' | kuras- 'pass (time)' |

From the glosses that he attaches to the pairs in (17), it is likely that Jacobsen himself might have recognized the semantic disparity between the pair. It is all the more striking, therefore, that we find no mention of them in Jacobsen's 1992 work.⁸

⁷ There is a possibility that such weak semantic links may have been stronger for many of the pairs in Old Japanese (cf. Kageyama 1996:180). *Nihonkokugo Daijiten* states that the pair *sutar-/sute-*, for instance, used to be related to each other in the sense 'disposal of things as useless.' Another issue that may need to be addressed in dealing with the Japanese ergative pairs is that some of those pairs whose semantic links are weak are written in different Chinese characters. Again, for the pair *sutar-/sute-*, distinct Chinese characters are used in modern Japanese, and I assume that such different use of Chinese characters reflects to some extent semantic discrepancies between the pairs. These facts suggest that there is a need to conduct a detailed historical analysis of ergative pairs (cf. Kuginuki 1970, Komatsu 1999).

⁸ In Jacobsen's list there are other pairs which do not appear to have close semantic link while the glosses indicate that they do. For instance, Jacobsen translates the pair *mome-/mom-* into 'become wrinkled' and 'wrinkle,' respectively. In modern Japanese, however, the intransitive *mome-* is most likely to mean 'have trouble or disagreements.'

(i) Ano katei-wa itumo ironna koto-de mome-te iru.
 that family-TOP always various things-over have trouble-ASP
 'There is always trouble over many things in that family'

Interestingly enough, such semantically tenuous pairs tend to lack the configurational relationship characteristic of the ergative alternation (cf. Chapter 2, Section 2.3). For instance, among the transitive members of the semantically distinct pairs listed in (17), the following do not alternate with their intransitive counterparts when it is required that the object of the transitive correspond to the subject of the intransitive.

- (18) a. Taroo-ga suupu-ni sio-o tasi-ta.
 Taro-NOM soup-to salt-ACC add-PAST
 ‘I added salt to the soup’
- b. *Suupu-ni sio-ga tari-ta.
 soup-into salt-NOM suffice-PAST
 (‘The salt in the soup sufficed’)
- (19) a. Taroo-wa sono yakusoku-o hatasi-ta.
 Taro-TOP the promise-ACC fulfill-PAST
 ‘Taro fulfilled his promise’
- b. *Sono yakusoku-ga hate-ta.
 the promise-NOM come to an end-PAST
 (‘The promise came to an end’)
- (20) a. Watasi-wa kenzyuu-ni tama-o kome-ta.
 I-TOP gun-into bullet-ACC fill-PAST
 ‘I loaded the gun’
- b. *Kenzyuu-ni tama-ga kon-da.
 gun-into bullet-NOM crowd-PAST
 (‘The gun got loaded with bullets’)
- (21) a. Taroo-wa taikin-o tazusae-te iru
 Taro-TOP a large amount of money-ACC carry-ASP
 ‘Taro carries a large amount of money’

As I discussed in Chapter 3, Section 3.6.4 above, semantic discrepancies observed in *mome-/mom-* have to do with the issue of semantic drift of a verb.

- b. *Taroo-wa taikin-ga tazusawat-te iru
 Taro-TOP a large amount of money-NOM participate in-ASP
 ('A large amount of money participates in Taro')
- (22) a. Taroo-wa me-o korasi-ta
 Taro-TOP eye-ACC concentrate-PAST
 'Taro concentrated his eyes'
- b. *Taroo-wa me-ga kot-ta
 Taroo-TOP eye-NOM become absorbed in-PAST
 ('Taro's eyes were absorbed in.')
- (23) a. Taroo-wa asa-no zyogingu-o kakasi-ta koto ga nai
 Taro-TOP morning-GEN jogging-ACC miss-PERF NEG
 'Taro has never missed jogging in the morning'
- b. *Taro-wa asa-no zyogingu-ga kake-ta koto ga nai
 Taro-TOP morning-GEN jogging-NOM become lacking-PERF NEG
 ('As for Taro, jogging in the morning has never become lacking')

It is also interesting to note that semantic opaqueness can be discerned in pairs whose glosses do not necessarily indicate such noticeably tenuous semantic relations as those of the pairs in (17) above. For instance, while Jacobsen provides *tukamar-/tukam-* with the glosses 'be caught/catch,' indicating that the pair is semantically identical in every way but voice status, Teramura (1982) points out that the pair is not so semantically transparent given that *tukamar-* is interpreted more appropriately as 'be arrested.'

- (24) a. Dareka-ga watasi-no ude-o tukan-da
 omeone-NOM I-GEN arm-ACC catch-PAST
 'Someone caught my arm'
- b. Hannin-ga keisatu-ni tukamar-u
 criminal-NOM policeman-by be caught-PRES
 'The criminal is caught by the policeman' (Teramura 1982:307)

As expected, the pair fails to show the configurational correlation (i.e., correspondence between transitive object and intransitive subject).

- (25) a. Saru-ga ki-no eda-o tukan-da
 monkey-NOM tree-GEN branch-ACC catch-PAST
 ‘The monkey caught a branch of the tree’
- b. *Ki-no eda-ga saru-ni tukamat-ta
 tree-GEN branch-NOM monkey-by be caught-PAST
 ‘A branch of the tree was caught by the monkey’

In light of the semantic discrepancies between Japanese ergative pairs as described above, I reanalyzed Jacobsen’s list of morphological pairs. As a consequence, I found that the following sixty-eight pairs of verbs show some sort of semantic discrepancy in the verb stems, resulting in tenuous semantic links between the pairs.⁹

| (26) CLASS | INTRANSITIVE | TRANSITIVE |
|------------|--|--|
| I. | hirake- ‘open _{in} ’ mome- ‘become wrinkled’ sire- ‘become known’ | hirak- ‘open _{tr} ’ mom- ‘wrinkle’ sir- ‘come to know’ |
| II. | itam- ‘hurt _{in} ’ kom- ‘become crowded’ muka- ‘face’ so- ‘go along with’ sukum- ‘crouch’ taga- ‘differ’ tiga- ‘differ’ tum- ‘become packed’ tuta- ‘go along’ | itame- ‘hurt _{tr} ’ kome- ‘fill with’ mukae- ‘meet, welcome’ soeru ‘add’ sukume- ‘duck (one’s head)’ tagae- ‘break (one’s word)’ tigae- ‘change’ tume- ‘pack’ tutae- ‘transmit’ |

⁹ The analysis of the semantic mismatches seems to point to several other facts about the Japanese ergative pairs. First, there are hardly any such semantic discrepancies among the verbs in Jacobsen’s Class I. As noted earlier, this particular class of ergative pairs contains many verbs meaning “destruction” and “violence,” which may lend support to the argument that change of state is the most significant semantic factor in determining whether a given verb will alternate in transitivity. Secondly, Jacobsen’s Class XVI, which consists of the pairs with idiosyncratic morphological patterns, contains a relatively higher portion of semantically tenuous verbs. This may reflect the general view that morphological consistencies have the tendency to coincide with semantic consistencies. The extreme case of this morpho-semantic relationship might be the verb pair *sin-/koros-* ‘die/kill,’ in which the two morphologically unrelated verbs are understood to be completely separate lexical items despite the semantic affinity, that is “death.”

| | | |
|-------|--|---|
| | yam- 'stop _{in} ' yasum- 'rest _{in} ' | yame- 'stop _{tr} ' yasume- 'rest _{tr} ' |
| III. | azukar- 'keep' kurumar- 'become wrapped up in' maziwar- 'mingle with' osamar- 'subside' osowar- 'learn' sazukar- 'receive' sutar- 'fall into disuse' suwar- 'site' tazusawar- 'participate in' ukar- 'pass (an exam)' | azuke- 'entrust to' kurume- 'lump together with' mazie- 'mix with' osame- 'pacify' osie- 'teach' sazuke- 'grant' sute- 'throw away' sue- 'set' tazusae- 'carry on one's person' uke- 'take (an exam)' |
| IV. | matagar- 'sit astride' tamawar- 'be granted' tukamar- 'be caught' | matag- 'straddle' tama- 'grant' tukam- 'catch' |
| V. | kitar- 'come' nar- 'become' nobor- 'rise' sator- 'realize' tar- 'suffice' | kitas- 'bring about' nas- 'make' nobos- 'bring up, serve' satos- 'make realize' tas- 'add, supplement' |
| VI. | kogare- 'burn with passion for' mure- 'become steamed' | kogas- 'scorch' mus- 'steam' |
| VII. | kari- 'borrow' tari- 'suffice' | kas- 'lend' tas- 'add, supplement' |
| VIII. | ak- 'open _{in} ' a- 'go together' hagem- 'be diligent in' huk- 'blow _{in} ' kor- 'become absorbed in' megur- 'come around' wazura- 'be troubled' | akas- 'reveal' awas- 'bring together' hagemas- 'encourage' hukas- 'puff, smoke' koras- 'concentrate _{tr} on' meguras- 'turn around' wazurawas- 'trouble' |
| IX. | ake- 'dawn' bake- 'turn into' hate- 'come to an end' huke- 'grow late' kake- 'become lacking' kure- ' (day, year) comes to an end' | akas- 'spend (the night)' bakas- 'bewitch' hatas- 'carry out' hukas- 'stay up late at (night)' kakas- 'miss (a meeting)' kuras- 'pass (time)' |

| | | |
|-------|--|--|
| X. | kori- ‘learn (from experience)’ deki- ‘come into existence’ tozi- ‘close _{in} ’ | koras- ‘give (one) a lesson’ dekas- ‘bring about’ tozas- ‘close _{tr} ’ |
| XI. | hi- ‘become dry’ sugi- ‘go past’ | hos- ‘dry’ sugos- ‘pass (time)’ |
| XII. | mi- ‘see’ | miseru ‘show’ |
| XIII. | amae- ‘act dependent (on)’ hagure- ‘stray from’ obie- ‘become frightened at’ | amayakas- ‘spoil’ hagurakas- ‘put off, evade’ obiyakas- ‘frighten, threaten’ |
| XIV. | komor- ‘be fully present’ | kome- ‘fill with’ |
| XV. | sutare- ‘fall into disuse’ | sute- ‘throw away’ |
| XVI. | hosor- ‘become thin’ kake- ‘run’ kikoe- ‘become audible’ kudar- ‘go down’ nobi- ‘become extended’ tuki- ‘run out _{in} ’ tumor- ‘become accumulated’ use- ‘disappear’ | hosome- ‘make narrow’ kar- ‘drive, spur’ kik- ‘hear’ kudasar- ‘bestow’ nobe- ‘extend’ tukus- ‘use up’ tum- ‘accumulate’ usina- ‘lose’ |

Given the semantically opaque pairs above, the question to be addressed is how we should characterize such pairs, particularly in contrast to semantically transparent pairs. In light of the proposal of dichotomous derivational levels—lexical vs. post-lexical—of ergative pairs as described above, our interest lies in whether the morphological pairs in Jacobsen (1992) should be treated uniformly with respect to the level of derivation, regardless of the varying degree of semantic transparency.

4.4.2 Spurious Ergative Pairs

In the discussion of the alternatability of verbs in English, Levin and Rappaport Hovav (1995) note that a class of nonagentive intransitive verbs referred to as verbs of

emission (e.g., sound, light, smell, etc.) usually fail to participate in the ergative alternation.

- (27) a. The jewels glittered/sparkled
 b. *The queen glittered/sparkled the jewels.
- (28) a. The stream bubbled/roared.
 b. *The rocks bubbled/roared the stream.

(Levin and Rappaport Hovav 1995:92)

According to Levin and Rappaport Hovav, this class of verbs exhibits no alternating behavior in that the eventualities denoted by these verbs are conceptualized as resulting from the “internal physical characteristics of their single argument” (1995:92), just like the verbs *play* and *speak* (cf. Chapter 3, Section 3.4.1.3).

It is interesting to note that verbs of emission occasionally show an alternating behavior. Intransitive verbs of sound emission are particularly worth noting because there appear to be no consistent rule as to which verbs can alternate with a transitive, causative use (cf. Levin and Rappaport Hovav 1995, G. Song 1996, Atkins et al. 1997). For instance, *buzz* and *burp*, which do not usually occur in transitive constructions as illustrated in (29) and (30), can be used transitively in contexts like (31) and (32).

- (29) a. The bees buzzed.
 b. *The postman buzzed the bees. (Levin and Rappaport Hovav 1995:117)
- (30) a. The doctor burped.
 b. *The nurse burped the doctor. (Smith 1978:107)

- (31) a. The doorbell buzzed.
 b. The postman buzzed the doorbell.

(Levin and Rappaport Hovav 1995:115)

- (32) a. The baby burped.
 b. The nurse burped the baby. (Smith 1978:107)

Examples like (31b) and (32b) may pose a problem since they can be evidence against the view that meanings of verbs enable us to predict their syntactic behaviors.

Levin and Rappaport Hovav propose a solution to this problem, assuming that *buzz* and *burp* in (31) and (32) are essentially different from those in (29) and (30). To explain the alternating behaviors of *buzz* and *burp* as shown in (31) and (32), Levin and Rappaport Hovav propose that they be considered merely “idiosyncratic” or “spurious,” being distinguished from the normal uses of the verbs (G. Song (1996) refers to such causative uses of verbs of sound emission as “unexpected causatives”). One reason for their claiming that there are such idiosyncratic causative pairs is that the intransitive alternants will causativize “only for certain highly specific choices of objects for the transitive use” (1995:115). Their observation appears to explain the alternatability of *burp* in particular since those who burp need to be restricted to babies. As for *buzz* and other verbs of sound emission like *ring* and *clatter* that undergo the alternation, Levin and Rappaport Hovav assume that they are distinct from “genuine” ergative pairs like *break* since the former does not allow natural forces or instruments as syntactic subjects.

- (33) a. *The short circuit rang the bell.
 (cf. Tom rang the bell)

- b. *The dishwasher clattered the dishes.
 (cf. Tom clattered the dishes)

(Levin and Rappaport Hovav 1995:116)

More importantly, Levin and Rappaport Hovav suggest that the spurious pairs represent “two distinct semantic representations, not related by any productive rule” (1995:119). This clearly contrasts with the semantic representation of *break*, which is assumed to consist of a single causative LCS (cf. Chapter 1). The implication of the dual semantic representations for the spurious pair is that it points to the possibility of listing causative and non-causative uses of certain idiosyncratic causative pairs in two separate lexical entries.

Building on the observation by Levin and Rappaport Hovav, I propose that the idea of idiosyncrasy may also apply to the semantically opaque pairs in (25) above when contrasted to those with semantic transparency. More specifically, Japanese ergative pairs can be categorized differently based on semantic affinity between the pairs. In the next section, I demonstrate that the Japanese ergative pairs whose semantic relationships are understood to be weak are registered as separate lexical entries in the lexicon (cf. Aronoff 1976:19, Tyler 1999:81). In this view, not only idiosyncratic meanings but also transitivity status are listed as part of our lexical knowledge. Conversely, for those pairs such as *war-/ware-* ‘break’ that obey the standard configurational pattern and are semantically transparent, I would assume that only the verb stem (*war-*) is listed in the permanent lexicon in Japanese.

4.5 Dichotomous View of Japanese Ergative Pairs

4.5.1 Idiomatization

With regard to Jacobsen's claim that each member of Japanese ergative pairs is registered in the lexicon, I suggest that the idea of idiomatization advanced by Miyagawa (1989a, 1998) is rather insightful in dealing with the issue of lexical versus non-lexical derivation of ergative pairs. Idiomatization, by definition, refers to a process in which a combination of a nominal and a verb takes on a non-literal meaning due to the linguistic phenomenon called semantic drift (Miyagawa 1989a:123). For instance, the subject-verb structure consisting of Japanese nominal *ude* 'arm' and the verb *nar-* 'ring' gives rise to a non literal meaning as illustrated below:

(33) *ude* + *nar-* → *ude-ga nar-u*
 arm ring arm-NOM ring-INF
 'be itching for (lit. one's arm rings)' (Miyagawa 1989a:124)

The key assumption behind idiomatization is that the meaning of an idiomatic verb phrase is unpredictable from its original meaning.

More crucially, the unpredictability of idiomatization leads Miyagawa to claim that idiomatic verbs should be learned as separate lexical items. On Miyagawa's terms, idioms that are generated by means of idiomatization are "registered in the permanent lexicon" (Miyagawa 1998:71). Building on the view of idiomatization I propose that if the morphologically derived member of an ergative pair is not related closely enough to its underived counterpart semantically, then each member of the pair should be listed as a separate lexical item despite the morphological correlation. By contrast, if one member of an ergative pair is semantically, as well as morphologically, related to the other member, then it is likely that the derived word might be formed post-lexically (cf. Miyagawa 1998). Moreover, following Miyagawa (1984) I assume that semantic predictability

indicates the possibility that an ergative pair can be formed productively. In the section that follows, I apply the lexical paradigmatic system presented in Miyagawa (1989a, 1998) to Japanese ergative verbs in an attempt to establish two distinctive derivational levels based on semantic coherence.

4.5.2 Paradigmatic Structure (PDS)

As noted previously (Chapter 2, Section 2.6.2.1), Japanese has a highly productive causativizing suffix *-(s)ase* which can attach to any type of verb to create a causative meaning equivalent to the English ‘cause someone/something to do (something)’ construction. It has been noticed in the literature that there are numerous cases where *-(s)ase* causative predicates have non-literal or idiomatic meanings which have little or no association with those of the underived bases (Miyagawa 1984, 1989a, 1998, Zenno 1985). In order to depict the process of idiomatization associated with *-(s)ase* causative forms, Miyagawa (1989a) adopts a lexical entry called Paradigmatic Structure (PDS). In Miyagawa’s terms, PDS is the mental device that “organize[s] verbs in the lexicon according to their meaning and the number of arguments that they take” (1989a:117). A PDS consists of three slots, that is: intransitive, transitive, and ditransitive, as shown below (Miyagawa 1980:109):

(34)

| INTR | TR | DITR |
|------|----|------|
| | | |

Since each slot is determined according to the number of arguments that a verb takes, a genuine intransitive verb like *sin-* ‘die’ can only fill the intransitive slot.

(35)

| INTR | TR | DITR |
|-------------------|----|------|
| <i>sin-</i> 'die' | | |

Miyagawa (1980, 1984, 1989a) proposes to utilize the PDS to account for the emergence of idiomatic meaning associated with *-(s)ase* derivatives. Firstly, based on the notion of 'blocking' (Aronoff 1976), Miyagawa posits two possible PDSs for *-(s)ase* causative predicates, one for the blocked *-(s)ase* and the other for the unblocked *-(s)ase*.

(36)

| INTR | TR | DITR |
|---------|---------|------|
| Vi-stem | Vt-stem | |

Vi-stem + (s)ase

| INTR | TR | DITR |
|---------|-------------------------|------|
| Vi-stem | <i>Vi-stem + (s)ase</i> | |

(adapted from Miyagawa 1980:113)

The first PDS illustrates that the derived *-(s)ase* predicate, being blocked by a pre-existing transitive stem, cannot enter into the permanent lexicon. For instance, the causative form *agar-ase* 'cause to rise' derived from the intransitive stem *agar-* 'rise' cannot enter into the permanent lexicon of the PDS since the transitive stem *age-* 'raise' already occupies the transitive slot, as illustrated below

(37)

| INTR | TR | DITR |
|--------------|---------------|------|
| agar- 'rise' | ager- 'raise' | |

agar-ase (blocked)

(Miyagawa 1989a:121)

By contrast, the second PDS indicates that the *-(s)ase* derivative enters into the permanent lexicon since it is not blocked by a transitive stem. It is the unblocked *-(s)ase* derivative, in Miyagawa's view, that takes on an idiomatic meaning. Thus, the PDS of *niow-* 'smell,' which lacks a transitive stem, incorporates the causative derivative *niow-ase* into the permanent lexicon, allowing it to have the idiomatic meaning 'hint' (Miyagawa 1989a:124).

(38)

| INTR | TR | DITR |
|----------------------|------------------------|------|
| <i>niow-</i> 'smell' | <i>niow-ase</i> 'hint' | |

I assume that semantic drift analogous to idiomatization takes place in the PDS of the unblocked *-(s)ase* above.

4.5.3 PDS for Ergative Pairs

Returning to the issue of semantic relations between ergative pairs, I propose to follow the fundamental view of PDS that verbs stems are registered in the permanent lexicon. I do not assume, however, that morphological derivatives, as well as verb stems, of the ergative pair are registered in the permanent lexicon (cf. Miyagawa 1984:178). Rather, I assume that the PDS of the ergative pair has a main lexical entry in which no transitivity is implicated for a verb stem. Alternatively, I assume that the PDS has

subentries in which transitivity is specified by morphological forms. The whole PDS is illustrated as follows (since our focus is on ergative pairs, I omit a ditransitive slot from):

(39)

| | | |
|--------------------|-------------------------|-----------------------|
| Lexical Entry | V-stem | |
| Lexical Subentries | INTR (Vi-derivative) | TR (Vt-derivative) |

In essence, I assume that all verb stems of Japanese ergative verbs in Lexical Entry are provided with an entry in the permanent lexicon. Lexical Entry is almost equal to the ‘slot’ in Miyagawa’s original PDS since both are concerned with operations in the lexicon. It is the level of lexical subentries, however, that is undecided as to whether it is inside or outside the permanent lexicon. Following a proposition by Miyagawa (1998), I assume that while the PDS is basically a level of representation that filters verbs in terms of whether or not they belong to the permanent lexicon, there is the possibility that it deals with a certain post-lexical operation as well. Based on this view, I propose that the lexical subentries described in (39) above are a level of operation that could be either lexical or post-lexical.

The remaining question, then, is: what distinguishes lexically derived pairs from those which derived post-lexically? For Miyagawa, it was the concept of blocking that distinguishes lexical causatives from analytical causatives with respect to idiomatization of *-(s)ase*. My answer to this question is semantic transparency. More specifically, for pairs which hold a semantically opaque relation, we assume that the main lexical entry consists of two subentries in which morphologically full-fledged forms are registered.

Crucially, the lexical subentries of such semantically opaque pairs are registered in the permanent lexicon.

(40)

| | |
|--------------------|---|
| Lexical Entry | V-stem |
| Lexical Subentries | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> INTR (Vi-derivative) </div> <div style="text-align: center;"> ← → opaque </div> <div style="text-align: center;"> TR (Vt-derivative) </div> </div> |



Permanent Lexicon

By contrast, I do not assume that semantically transparent pairs, which I consider to be genuine ergative pairs in Japanese, derive their morphological distinctions in the lexicon. Rather, I propose that transitive and intransitive suffixes are “inserted” post-lexically.¹⁰

(41)

| | |
|--------------------|--|
| Lexical Entry | V-stem |
| Lexical Subentries | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> INTR (Vi-derivative) </div> <div style="text-align: center;"> ← → transparent </div> <div style="text-align: center;"> TR (Vt-derivative) </div> </div> |

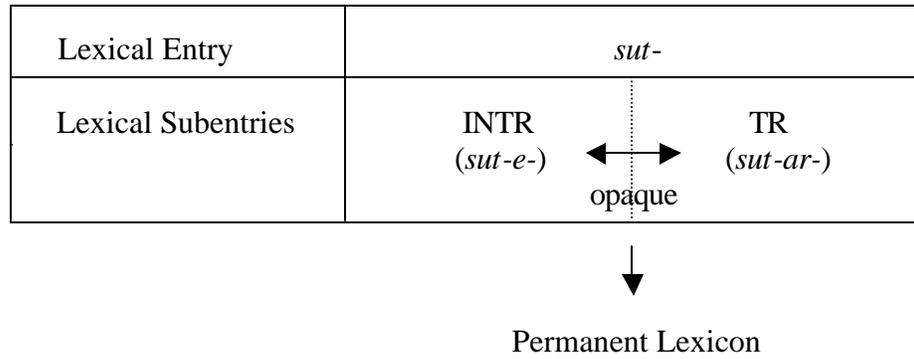


Post Lexicon

Given the lexical entry templates above, we assume that the semantically opaque pair *sute-/sutar-* is represented as follows:

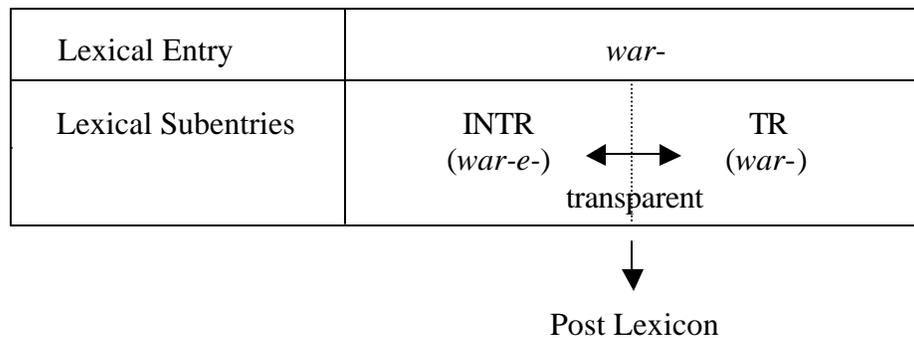
¹⁰ My position of post-lexical insertion of derivational suffixes is based in part on Miyagawa (1998), who argues that lexical insertion should be allowed to take place “in later stages of syntactic derivation” (73).

(42)



On the other hand, the semantically transparent pair *war-/ware-* is represented as follows:

(43)



The question that remains to be addressed regarding the post-lexical insertion of derivational suffixes as in (43) is how derivational unpredictability as discernible between *war-/ware-* and *ake-/ak-* can be understood to take place outside the realm of the lexicon. More specifically, if Miyagawa's statement (1998:84-87) that the morphological oppositional patterns of ergative pairs in Japanese must be learned is correct, then it is necessary to provide a solution to the following obvious contradiction: morphological patterns are those that should be memorized for the most part, reflecting the characteristics of the permanent lexicon, while in my analysis they attach to verb stems post-lexically. In the next section, I propose to apply the framework of Distributed Morphology to this problem.

4.5.4 Distributed Morphology

Distributed Morphology is a theoretical framework which claims that morphology is “distributed among several different components.” (Halle and Marantz 1993:112). In Distributed Morphology (henceforth DM), it is assumed that the lexicon is a list of underived, underspecified vocabulary items (Tyler 1999:20). As pointed out by Halle and Marantz, the underspecification associated with the vocabulary items particularly seems to serve its purpose in describing a language like English, which is characterized in general as less specified with respect to morpho-syntactic features such as tense and agreement. On their terms, for instance, the ergative alternation exhibited by *sink* is a typical case of underspecification in which the distinction in transitivity is not morpho-syntactically specified (Halle and Marantz 1993:122).

The problem with DM is how we should deal with languages like Japanese, which particularly indicates morpho-syntactically the difference in transitivity. I suggest that late insertion, another key concept in DM, may provide a solution for this problem. Halle and Marantz (1994) maintain that syntactic operations lack all phonological features. Such division between syntax and phonology is made possible by late insertion, which states that phonological features are inserted into the terminal nodes after the syntax (Halle and Marantz 1994:275). Their assumption appears to have significant implications for the issue of morpho-syntactic inconsistencies associated with the verbs in Group 1 and 2 in Jacobsen’s list since it points to the possibility that phonological features do not directly control the syntactic behaviors of ergative pairs in Japanese.

One more problem remains, however, with the idea of adopting DM to the Japanese ergative pairs. That is, the phonological features discussed in the literature are exclusively inflectional ones (Halle and Marantz 1993, 1994; cf. Miyagawa 1998:82).

This implies that there is no assurance that DM is a working theory for explaining derivational features like the oppositional patterns of the Japanese ergative pairs.

Miyagawa (1998:82) challenges the inflection-based view of DM, arguing that the concept of underspecified feature can apply not only to inflection features but also to derivational features like morphological oppositional patterns of Japanese ergative pairs.

I argue that the implication that Miyagawa's claim has on our study is significant; if we accept that derivational features can be inserted later in the derivation, then our version of PDS, which has been modified from Miyagawa's to explain how semantic links affect the derivational status of the ergative verb, becomes more convincing.

4.6 Summary

In this chapter I have presented a semantic analysis of the ergative alternation in Japanese. I have shown that a number of ergative pairs, while their valency shift patterns like that of the English ergative alternation, show a varying degree of semantic discrepancies between transitive and intransitive alternants. Bearing in mind that such discrepancies may have resulted in part from semantic changes that have occurred to these pairs over time, I proposed that the ergative pairs whose semantic relationships are remote be listed as separate lexical items in the modern Japanese lexicon. This view is based on the idea that it is next to impossible for us to predict the meaning of one member of a morphological pair from the other member when the pair holds weak semantic relationship. For ergative pairs which show configurational and semantic coherence, on the other hand, I proposed to view them as sharing a verbal root of an identical meaning in the lexicon. On this view, the distinction between transitive and intransitive is a corollary of morphological derivation and valency shift, both of which I

consider to be part of a non-lexical process. Consequently, the strong lexicalist view held by Jacobsen that all the ergative pairs are learned as separate lexical items is reduced to the extent that only semantically tenuous pairs are listed separately in the lexicon.

CHAPTER 5 ASPECT AND ERGATIVE PAIRS

5.1 Introduction

In the preceding two chapters I presented a semantic analysis of ergative pairs both in English and Japanese. In Chapter 3, we have observed that given semantic properties such as change of state and instigation of causation, we can make a prediction for most verbs as to which verbs alternate in transitivity and which verbs do not. In Chapter 4, I proposed that it is necessary to pay close attention to the semantic relationships between transitive and intransitive members of ergative pairs. I also demonstrated that only semantically transparent pairs are considered to be genuine ergative pairs both in English and Japanese.

In this chapter I present another semantic analysis of Japanese ergative pairs, focusing on the aspectual properties associated with transitive and intransitive ergatives. It has been noticed in the literature that ergative pairs differ not only in causative situation but also in aspect. There are two aspectual classes that are relevant to English ergative pairs: accomplishments and achievements. It seems that ergative transitives are understood to be members of the accomplishment class and ergative intransitives to be those of the achievement class (Dowty 1979, Van Valin 1993, Shirai 2000). Aspectual properties of Japanese ergative pairs, on the other hand, have been investigated in terms of derivational aspectual meaning in conjunction with *-te iru*, an aspectual marker which is usually equated with the English progressive *be V-ing*. Specifically, occurring with *-te*

iru, ergative transitives are observed to receive progressive interpretations, while ergative intransitives are observed to receive perfect interpretations.

In what follows, I will propose that the duration and endpoint of eventuality are attributed to the different aspectual meanings between ergative transitives and intransitives when combined with *-te iru*. My durational approach to this issue is based in part on interval semantics (Dowty 1979), in which the duration of time needed for the realization of an event is considered the essential feature in establishing the traditional achievements-accomplishments distinction. Additionally, I will argue that verbs expressing events that entail duration and a clear endpoint invariably take on progressive readings in conjunction with *-te iru*. Consequently, the implication of the analysis of ergative pairs with the aspectual marker *-te iru* is that the pairs can be sub-grouped by virtue of the two aspectual features, namely duration and endpoint.

The organization of the chapter is as follows. In Section 5.2, I discuss transitive and intransitive verb pairs in Japanese and pose two questions on the aspectual properties of these verb pairs combined with the aspectual marker *-te iru*. In Section 5.3, I review Vendlerian linguistic aspectual classifications. I point out that two aspectual categories (achievement and accomplishment) might be closely related to transitivity status of a verb. In Section 5.4, I review two aspectual classifications of Japanese verbs, one is by Kindaichi (1950) and the other by Fujii (1976) and Takahashi (1976). I propose that the semantic property result or change of state is a key factor in achieving a unified approach to Japanese aspectual classification. In Section 5.5, I discuss Jacobsen's prominence theory, illustrating that the choice between progressive and perfect associated with *-te iru* predicates is determined by the thematic role of an argument which occupies the syntactic

subject position. In Section 5.6, I propose to apply the theory of interval semantics (Dowty 1979) to the aspectual classification of Japanese verbs. Along the lines of Fujii (1976) and Takahashi (1976), this framework stresses the importance of taking interval of time into account in dealing with aspectual studies in general. Subsequent to the syntactic test *x V-owar-* ‘x finish V-ing,’ I will demonstrate that the concept of “change” should be first separated into “interval” and “non-interval,” and that the interval class should be further divided into “specified endpoint” and “unspecified endpoint.” I will conclude that when intransitive verbs imply “change of state or location,” it is the interval of time and the specified endpoint of the change that produce a progressive meaning in the *-te iru* construction.

5.2 Japanese Aspectual Properties: Issues

In Japanese there is an aspectual marker *-te iru*, consisting of a gerundive *te* and an existential verb *iru*,¹ which is most commonly equated with the English progressive marker *-ing*. For instance, the verb *nemur-* ‘sleep’ combines with the aspectual marker, giving rise to a progressive reading:

- (1) Taroo-wa suyasuya to nemut-te iru
 Taro-TOP soundly sleep-ASP
 ‘Taro is sleeping soundly’

What is striking about *-te iru* is that there are many verbs that express a perfect meaning when occurring with the suffix. The aspectual property ‘perfect’ or ‘resultative state’

¹ The gerundive *te* becomes *de* following a nasal sound *n* as in *sin-de* (< *sin-* ‘die’) and *yom-de* (< *yom-* ‘read’).

arising from *-te iru* predicates as in (2) is characterized as “a state resulting from an event” (Jacobsen 1992:162).²

- (2) a. Takusii-wa gohun-mae ni tui-te iru
 taxi-TOP five minutes-ago arrive-ASP
 ‘The taxi arrived five minutes ago’
- b. Taroo-wa maeba-ga kake-te iru
 Taro-TOP front tooth-NOM be chipped-ASP
 ‘As for Taro, his front tooth is chipped’
- c. Hodoo-ni sai-hu-ga oti-te iru
 sidewalk-on wallet-NOM drop-ASP
 ‘A wallet is lying on the sidewalk’

The difference between progressive and perfect is mainly due to the lexical meaning of verbs to which *-te iru* attaches. Shirai (1998:663) observes that verbs like *nemur-* ‘sleep’ and *uta-* ‘sing,’ which are dynamic and durative, express progressive in *-te iru*, and verbs like *ore-* ‘break,’ which represent punctual change of state, express perfect in *-te iru*.³

In relation to the progressive/perfect distinction, Japanese ergative pairs provide a further interesting set of data. It has been noticed in the literature that cutting across these pairs there is a general tendency for intransitive ergative members to have perfect readings and for transitive members to have progressive readings combining with *-te iru* (Kindaichi 1950, Yoshikawa 1976, Okuda 1978b, Jacobsen 1982a, 1992, Takezawa

² Many researchers recognize more than two aspectual categories associated with *-te iru*. For instance, Yoshikawa (1976) proposes five categories (progressive, resultative state, simple state, experiential, and iterative), while Shirai (2000) proposes four of them (progressive, resultative state, perfect, and habitual). In this dissertation, I follow Jacobsen’s dichotomous view (i.e., progressive versus perfect) because our main focus of this chapter is on the distinction between progressive and non-progressive.

³ While admitting the correlation between verbal aspects such as activities, achievements, etc. and the progressive/perfect distinction, McClure (1996:283) asserts that almost all Japanese verbs can have perfect readings with *-te iru*.

1991, Tsujimura 1996, Ogihara 1998, Shirai 1998, 2000). The translation of each *-te iru* form given below reflects this tendency.

| | | |
|-----|--------------------------------|------------------------------|
| (3) | TRANSITIVE + <i>te iru</i> | INTRANSITIVE + <i>te iru</i> |
| | kit-te iru ‘be cutting’ | kire-te iru ‘be cut’ |
| | wat-te iru ‘be breaking’ | ware-te iru ‘be broken’ |
| | taosi-te iru ‘be letting fall’ | taore-te iru ‘have fallen’ |
| | ake-te iru ‘be opening’ | ai-te iru ‘be open’ |
| | kowasi-te iru ‘be breaking’ | koware-te iru ‘be broken’ |

The obvious question that arises from these examples is why such different readings emerge for ergative pairs regarding *-te iru* forms.

It is clear that transitivity status itself has nothing to do with the different readings. This is illustrated by sentence (1) above where the progressive reading results from the intransitive *nemur-* in combination with *-te iru*. As discussed in Chapter 3, one apparent semantic property that distinguishes between transitive and intransitive members of ergative pairs is the presence of CAUSE in the semantic representation of transitives, which is roughly paraphrased into ‘cause to V-intransitive.’ Given this fact, one may argue that the semantic feature CAUSE induces a progressive reading in transitives with *-te iru*. However, there are a number of cases where non-causative verbs express progressive in conjunction with the aspectual marker. For instance, the intransitive *wara-* ‘laugh’ receives a progressive interpretation occurring with *-te iru* although it lacks CAUSE as one of its semantic components.

- (4) Taroo-ga oogoe-de warat-te iru
 Taro-NOM out loud laugh-ASP
 ‘Taro is laughing out loud’

It is clear that while the semantic property CAUSE might be relevant to the surfacing of a progressive meaning in the *-te iru* transitive ergative, the question of how we should account for cases like (1) still remains.

A more complicated issue, however, has to do with the possibility of interpreting some ergative intransitive verbs as progressive or perfect depending on the context. The ergative intransitive *yaker-* ‘broil, roast’ is a case in point. In (5a), *yake-te iru* describes a situation in which the process of broiling is complete. In (5b), on the other hand, the same process is still in progress.

- (5) a. Kono niku-wa moo zyuubunni yake-te iru.
 this meat-TOP already well broil-ASP
 ‘This meat is already well-done’
- b. Niku-wa zyuuzyuu oto-o tate nagara yake-te iru.
 meat-TOP nice sound-ACC making while broil-ASP
 ‘The meat is broiling, (while) making a nice sound’

The contrast between (5a) and (5b) casts further doubt on the view of considering CAUSE to be solely responsible for the distinction between progressive and perfect. Instead, it seems necessary to consider whether there are any other factors involved in the emergence of the two different aspectual meanings.

5.3 Classifications of English Lexical Aspect

Classifications of verbs based on their lexical aspect have long been discussed in the literature of philosophy (Ryle 1949, Kenny 1963) and linguistics (Vendler 1957, Comrie 1976, and Dowty 1979, among others). The most well-known aspectual classification in the field of linguistics is Vendler’s (1957) four-way classification consisting of *states*, *activities*, *accomplishments*, and *achievements*.

- (6) a. *States*: have, possess, desire, want, like, dislike, love, hate, rule, dominate, know, believe, etc.
 b. *Activities*: run, write, walk, swim, push, pull, etc.
 c. *Accomplishments*: paint a picture, make a chair, build a house, write/read a novel, deliver a sermon, give/attend a lecture, play a game of chess, grow up, recover from illness, get ready (for something), etc.

- d. *Achievements*: recognize, realize, spot, identify, lose/find an object, reach the summit, win the race, cross the border, start, stop, resume, be born, die, etc.

(Vendler 1957:150)

Vendler suggests that the four aspectual categories are distinguished from each other according to temporal schemata such as time stretch and time instant. Smith (1991) characterizes and schematizes each aspectual category, which she calls “situation type,” by utilizing three features (i.e., ‘static,’ ‘durative,’ and ‘telic’).

| (7) Situations ⁴ | State | Durative | Telic |
|-----------------------------|-------|----------|-------|
| States | [+] | [+] | [-] |
| Activity | [-] | [+] | [-] |
| Accomplishment | [-] | [+] | [+] |
| Achievement | [-] | [-] | [-] |

According to this schematization, activities are distinguished from accomplishments in that the former does not involve telicity, while the latter does. On the other hand, accomplishments are distinguished from achievements in that the former represents a durative event, while the latter represents a punctual event (Dowty 1979, Tenny 1987, 1994, Van Valin 1990).⁵

As mentioned above, some aspectual classifications seem to point to a correlation between aspectual properties and transitivity. More specifically, Dowty’s list of verbs of the four aspectual categories suggests that there is a tendency for transitives to be accomplishments and intransitives to be achievements (Dowty 1979:66-71; cf. Hasegawa

⁴ Smith (1991) adds another situation “semelfactive” to Vendler’s four-way classification. In the current discussion, however, I follow Vender’s classification.

⁵ The temporal features do not always distinguish aspectual categories. For instance, Van Valin (1993:154) notes that Achievement verbs can also express durative events.

1996:58). What is more striking is that when ergative verbs are added to categories, ergative intransitives and trans itives are invariably achievements and accomplishments, respectively (cf. Shirai 1998). For instance, examples from Shirai (1996:340), originally from Foley and Van Valin (1984) and Van Valin (1990, 1993), categorize the intransitive *break*, *shatter*, and *cool* as achievements, and the transitive counterparts as accomplishments.⁶ If we posit that English ergative pairs can be differentiated in terms of lexical aspect, then it may well be that progressive and perfect readings associated with *-te iru* forms are attributed to differing lexical aspect inherent in Japanese ergative pairs. In the following section I outline how Japanese verbs have been characterized aspectually in the literature.

5.4 Japanese Verbs and their Aspectual Properties

Aspectual analyses of Japanese verbs have been intensively conducted for more than a century. While Japanese linguists had long been aware that Japanese verbs are characterizable aspectually (cf. Otsuki 1897), Kindaichi (1950) is considered the first to have presented a systematic classification. Kindaichi's aspectual class, which happens to be a four-way classification analogous to Vendler's, consists of Stative, Continuative, Instantaneous, and Type Four (Kindaichi 1950:50-1; for translation of each class, I follow Jacobsen 1992:162-3).

- (8) a. Stative verbs:
 ar- "exist," deki- "be able," wakar- "understand," mie- "be visible,"
 yoos- "need", etc.

⁶ Under the framework of causal chain, Smith (1991:64n) characterizes Achievements and Accomplishments as "inchoative" and "causative," respectively. I assume that this distinction has relevance to the ergative intransitive/transitive contrast.

- b. Continuative verbs:
yom- “read,” kak- “write,” wara- “laugh,” syaber- “chat,” uta- “sing,”
mi- “see,” kik- “hear,” tabe- “eat,” etc.
- c. Instantaneous verbs:
sin- “die,” tuk- “arrive,” ik- “go,” kimar- “be decided,” tomar-
“stop,” mitukar- “be found,” kekkon-suru “get married,” etc.
- d. “Type Four” verbs:
sobie-te iru “tower above,” sugure-te iru “be excellent,” arihure-te iru
“be common,” ni-te iru “resemble,” etc.

One main distinctive feature in Kindaichi’s classification is that of punctuality. This is best illustrated by the two categories ‘continuative’ and ‘instantaneous,’ where the distinction is made on the basis of whether or not the event denoted by a verb continues for a certain interval of time. Under this duration approach, continuous verbs represent events that continue for a certain amount of time, whereas the instantaneous verbs represent events that may take place and end almost simultaneously.

What is notable about Kindaichi’s classification is that the aspectual marker *-te iru* is utilized as a syntactic and/or semantic test to validate his four-way classification. Note in particular that for continuous and instantaneous verbs, the affixation of *-te iru* results in an additional aspectual distinction between ‘progressive’ and ‘perfect,’ respectively.

- (9) a. continuative + *-te iru* → progressive
Taro-wa ima hon-o yon-de iru
Taro-TOP now book-ACC read-ASP
‘Taro is reading a book now’
- b. instantaneous + *-te iru* → perfect
Kono sakana-wa moo sinde-iru yo
this fish-TOP already die-ASP EMP
‘This fish is already dead’

In short, Kindaichi advances two types of aspectual properties of verbs in his classification, that is the lexical aspectual distinction between continuative and instantaneous on the one hand, and the grammatical aspectual distinction between progressive and perfect on the other.

Fujii (1976) suggests that the duration distinction between continuative and instantaneous is not always concomitant with the distinction between progressive and perfect in the *-te iru* construction. For instance, while *tir-* ‘(flowers) scatter’ is a continuous verb, it receives a perfect reading when combined with *-te iru*.

- (10) Zimen-ni hana-ga tit-te iru
 ground-on flowers-NOM scatter-ASP
 ‘The flowers are scattered on the ground’ (Fujii 1976:106)

Similarly, *hutor-* ‘become fat’ and *yaser-* ‘become thin,’ both of which imply gradual, continuous events, express a perfect meaning with *-te iru* (Okuda 1978a:38; see also Jacobsen 1982a:90, 1992:181).

- (11) a. Ano hito-wa sukosi hutot-te iru
 that person-TOP a little get fat-ASP
 ‘That person is a little fat’
 b. Ano hito-wa zuibun yase-te iru
 that person-TOP very get thin-ASP
 ‘That person is very thin’

Based on the observation just presented, Takahashi (1976) proposes an overarching distinction between ‘result’ and ‘non-result’ above the distinction between continuative and instantaneous.⁷

(12) I. Result verbs

- A. Continuative verbs: *nobi-* ‘become long,’ (*hana ga tir-* ‘(flowers) scatter,’ *ki-* ‘put on (clothes),’ *kabur-* ‘put on (a hat)’

⁷ Towards the end of his article Kindaichi (1950) also briefly discusses the possibility of using the concept “change” for a classification of Japanese verbs.

B. Instantaneous verbs: *panku-suru* “(a tire) gets punctured,” *kie-* “become extinguished,” *de-* “come out,” *sin-* “die,” *kekkon-suru* “get married”

II. Non-result verbs

A. Continuative verbs: *hasir-* “run,” *mi-* “see,” *asob-* “play,” *hur-* “(rain) falls,” *urayamasigar-* “show signs of envy.”

B. Instantaneous verbs: *itibetu-suru* “glance at,” *butukar-* “bump into,” *mokugeki-suru* “witness (an event).”

(Takahashi 1976:126 translated by Jacobsen 1992:171)

In Takahashi’s terms, result verbs involve a result or a change of state undergone by a Theme in the course of an event or an activity, whereas non-result verbs do not entail such meanings. In short, Takahashi argues that all verbs labeled as result induce a perfect reading with *-te iru*, whether they are continuative or instantaneous. Given this view, we may well explain that *hutot-te iru* and *yase-te iru* in (11) are interpreted as perfect simply because they represent results or changes of state brought about in Themes.

As will be discussed later, the distinction between result and non-result has a strong influence on Okuda (1978a.b), who, flatly denying the duration distinction (i.e., continuative vs. instantaneous), claims that Japanese verbs are aspectually classified into change and non-change groups solely depending on whether subjects are perceived to undergo a change of state. In particular, Okuda considers the semantic property “change” to be fairly significant for perfect readings of intransitive members of ergative pairs in *-te iru* (cf. Kiryu 1999:50). In his view, the intransitive member of the ergative pair *nagare-/nagas-* ‘flow/let flow’ does not have a perfect meaning in *te-iru* because the verb pair does not entail any change of state brought upon a Theme (Okuda 1978b:22).

To summarize, we have observed that researchers hardly reached agreement as to how Japanese verbs should be classified in terms of aspect. Moreover, the issue is

complicated by the aspectual marker *-te iru*. Since the classifications by Fujii and Okuda, however, result or change of state has emerged as one key factor for a possible consensus classification. Given this observation, I suggest that ergative pairs, which are generally characterized as involving change of state, might serve in part as a solution to a uniform classification due to their consistent behaviors concerning progressive versus perfect readings combined with *-te iru*.

5.5 Ergative Pairs and their Aspectual Properties

In the preceding section, we have observed that result or change of state associated with Theme arguments is considered in the recent literature the primary semantic property responsible for the emergence of perfect meaning in verbs with the aspectual marker *-te iru*. This observation poses a problem for analysis of a sentence like the following.

- (13) Taroo-ga tuginugi-to kyoositu-no mado-o wat-te iru
 Taro-NOM continuously classroom-GEN window-ACC break-ASP
 ‘Taro is now breaking windows of the classroom over there’

Recall that *war-* is paired with the intransitive counterpart *ware-* in Japanese, forming an ergative pair. That the transitive *war-* entails a change of state as part of its inherent meaning is substantiated by the following example.

- (14) Taroo-ga kabin-o wat-te simat-te moo tukae-nai
 Taro-NOM vase-ACC break-ASP-and any more use-NEG
 ‘Taro has broken the vase and we cannot use it any more’

The uselessness of the vase indicates that *war-* ‘break’ in (14) apparently entails a change of state. Nevertheless, the same verb in (13) does not mean a resultant state but expresses

an iterative meaning.⁸ In fact, this observation brings us back to the ergative pairs given in (3) above, where all the transitive change-of-state members are progressive in *-te iru* forms. This suggests that it is necessary to conduct a further analysis of ergative pairs to pinpoint the cause of their different aspectual meanings in *-te iru*.

5.5.1 Grammatical Functions and Thematic Roles

Okuda (1978), Jacobsen (1992), and Tsujimura (1996), among others, consider grammatical functions of arguments to be crucial in determining the aspectual meaning of a given verb in conjunction with *-te iru*. Recall that the ergative alternation is characterized by the configurational parallelism between the object of a transitive use and the subject of an intransitive use. Accordingly, the subject of the transitive use is usually an Agent, while the subject of the intransitive use invariably bears a Theme role. Given this observation, Okuda argues that the difference in aspectual meaning between *-te iru* ergative intransitives and *-te iru* ergative transitives is due to different thematic roles associated with the subjects of ergative pairs (cf. Shirai 1998). On this view, the subjects of transitive uses of ergative pairs are Agents, which cause changes of state but do not undergo any of those changes. It is this association of the thematic role Agent with an argument in the subject position that gives rise to a progressive interpretation in transitive ergative *-te iru* forms (Tsujimura 1996:322; cf. Miyagawa 1987:40). By contrast, the subjects of intransitive members of ergative pairs are logical objects which in general

⁸ Strictly speaking, the actions represented by *ot-te iru* and *wat-te iru* are not continuation of a single act, which is the most common situation associated with progressive, but rather a series of repeated actions often referred to as “iterative” (Jacobsen 1992:165). I consider such an iterative action to be part of the category of progressive.

bear the thematic role of Theme.⁹ As a consequence, intransitive uses of ergative pairs, whose subjects undergo change of state, receive perfect readings with *-te iru*.

One question that needs to be answered regarding Okuda's analysis is why the thematic role of an argument in the subject position is so crucial in determining the aspectual meaning of ergative pairs. Particularly, in a transitive construction, where the Agent and Theme arguments occur in the subject and object position respectively, it is necessary to explain why the aspectual marker *-te iru* should be linked to the Agent over the Theme, inducing a progressive interpretation in *-te iru* forms. Jacobsen (1992) holds that the degree of 'focus' associated with each grammatical function determines the aspectual meanings of ergative pairs (cf. Tsujimura 1996). On his view, the grammatical function 'subject,' regardless of the thematic role type that it is associated with, is inherently more focal than that of 'object.' Therefore, in a typical Japanese transitive template as demonstrated below, the Agent X, which takes the subject position, receives greater focus than the Theme Y does because of the position that the former occupies.

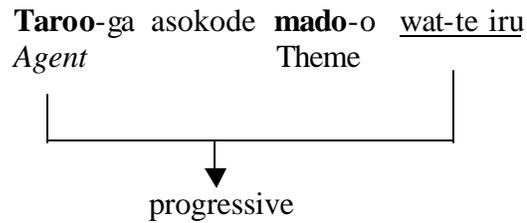
(15) X -ga Y -o V (transitive construction)
 Agent Theme

Jacobsen assumes that the aspectual marker *-te iru* is simply connected with the Agent subject over the Theme object, resulting in a progressive reading of a whole verb predicate *V-te iru*. Thus, we assume that agentivity associated with *Taroo* in (16)

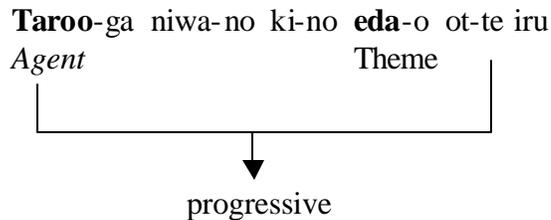
⁹ Drawing on a GB framework, Takezawa (1991) explains that the perfect readings of intransitive verbs emerge when an NP in the subject position holds an A-chain with the NP trace in the post-verbal position of the intransitives as a result of NP movement. According to Takezawa, this A-chain accounts for why passives also take on perfect readings when the predicates combine with *-te iru*.

becomes more prominent than the changes of state undergone by *mado* ‘window’ and *eda* ‘branch,’ inducing progressive readings over perfect readings.

- (16) a. Taroo-ga asoko-de mado-o wat-te iru
 Taro-NOM over there window-ACC break-ASP
 ‘Taro is breaking the window over there’



- b. Taroo-ga niwa-no ki-no eda-o ot-te iru
 Taro-NOM garden-GEN tree-GEN branch-ACC break-ASP
 ‘Taro is breaking branches over there’

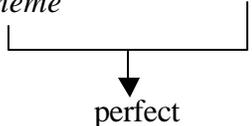
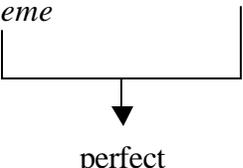


This prominence theory in connection with agentivity appears to account for the dominant progressive readings of the transitive *-te iru* constructions (cf. Moriyama 1988).

It is important to note here that the link between *-te iru* and the argument in the subject position is not necessarily a strict one. Rather, it should be stated that the link is our default perception of an event. This means that if we are provided with proper contexts that affect our perception, then the link may be shifted to a Theme argument in the object position, resulting in a perfect reading. This is most likely to occur when a sentence contains adverbs which strongly imply a resultative state or a perfect situation.¹⁰

¹⁰ Ando (1982:102) suggests that a variety of aspectual meanings associated with *-te iru* are due not only to co-occurring verbs but also to co-occurring adverbs and contextual factors.

For instance, if a sentence contains the aspectual adverb *sudeni* ‘already,’ as in (17), then its natural reading is that of perfect.

- (17) a. Taroo-wa *sudeni* mado-o go-mai wat-te iru
 Taro-TOP already widow-ACC five-CL break-ASP
 ‘Taro has already broken five widows’
- b. Taroo-wa *sudeni* maeba-o sanbon ot-te iru
 Taro-TOP already front tooth-ACC three break-ASP
 ‘Taro has already broken three front teeth’
- (18) a. Taroo -ga *sudeni* kyoositu-no **mado**-o go-mai wat-te iru
 Agent already Theme

 perfect
- b. Taroo-wa *sudeni* maeba-o sanbon ot-te iru
 Experiencer already Theme

 perfect

5.5.2 Terminative Orientedness

One more question surrounding the prominence theory described above is whether there is a theoretical background for assuming that an Agent invariably becomes prominent over a Theme, giving rise to a progressive reading in conjunction with *-te iru*. Kiryu (1999) accounts for this tendency in Japanese by referring to the language as a less ‘terminative-oriented’ language, in contrast to more ‘terminative-oriented’ languages like English.¹¹ According to Kiryu, Japanese verbs of change of state do not necessarily indicate that a change is brought about in a Theme. This is typically illustrated in the following:

¹¹ Ikegami (1982) initially proposed the concept of terminative orientedness under the terminology of “*suru* (‘DO’) verbs and “*naru* (‘BECOME’) verbs.

- (19) a. Ake-ta ga aka-nak-atta
 open-PAST but open-NEG-PAST
 ‘(I) opened it, but it did not open’ (Kiryu 1999:58)
- b. Mizu-o wakasi-ta kedo waka-nak-atta
 water-ACC boil-PAST but boil-NEG-PAST
 ‘(I) boiled the water, but it did not boil’ (Ikegami 1988:394)

In contrast, English change of state verbs ensure that once changes take place they reach their completive stage. Thus, conjoining two seemingly contradictory clauses as in (19) is simply impossible in English as shown in the English translations. Given these facts, Kiryu concludes that for Japanese transitive change-of-state verbs the action component receives more focus than the change component due to its typological characteristic of less degree of terminative orientedness. This in turn results in the association of *-te iru* with an Agent, giving rise to a progressive interpretation. Furthermore, Kiryu argues that since verbs of change of state in Japanese still potentially imply the termination of a change, the shift in focus towards the terminative stage may be triggered given an appropriate context.

In summary, both prominence and termination theories have one key assumption in common; in Japanese, the aspectual marker *-te iru* chooses to combine with the action or activity by an Agent over the change brought about in a Theme. As a consequence, most transitive change-of-state verbs, by default, have progressive readings when occurring with *-te iru*. These theories, however, still fail to provide an account for why, as mentioned above, some intransitive change-of-state verbs which have no Agents can have progressive readings with *-te iru*.

5.6 Ergative Intransitives

5.6.1 Progressives in Ergative Intransitives in *-te iru*

Recall that some Japanese ergative intransitives can take on progressive, as well as perfect, readings combined with *-te iru*. Consider the sentences in (5), repeated in (20) below (cf. Okuda 1978b:18).

- (20) a. Niku-wa sudeni zyuubunni yake-te iru.
 meat-TOP already well broil-ASP
 ‘The meat is already well-done’
- b. Niku-wa zyuuzyuu oto-o tate nagara yake-te iru.
 meat-TOP nice sound-ACC making while broil-ASP
 ‘The meat is broiling, (while) making a nice sound’

The progressive aspect of the predicate *yake-te iru* in (20b) is made more explicit when followed by the genuine progressive predicate *saityuu da* ‘be in the middle of (=PRG).’

- (21) a. *Niku-wa sudeni zyuubunni yake-te iru saityuu da.
 meat-TOP already well broil-ASP PRG
 ‘The meat is already in the middle of being well-done’
- b. Niku-wa zyuuzyuu oto-o tate nagara yake-te iru
 meat-TOP nice sound-ACC making while broil-ASP
 saityuu da.
 PRG
 ‘The meat is in the middle of broiling, (while) making a nice sound’

Since *-te iru* in (21a) retains a perfect meaning, it simply conflicts with the progressive predicate *saityuu-da*, resulting in the ungrammaticality of the whole sentence. Other verbs which show the same phenomenon as *yake-* include *toke-* ‘melt’ and *moe-* ‘burn.’

- (22) a. Koori-wa sukkari toke-te iru
 ice-TOP completely melt-ASP
 ‘The ice has completely melted’
- b. Koori-wa yukkuri toke-te iru
 ice-TOP slowly melt-ASP
 ‘The ice is gradually melting’

- (23) a. Takigi-wa sukkari moe-te-iru
 firewood-TOP completely burn-ASP
 ‘The firewood has completely burned’
- b. Takigi-wa ikioi-yoku moe-te iru
 firewood-TOP fiercely burn-ASP
 ‘The firewood is burning fiercely’

Comparing sentences (22a) and (23a) to sentences (22b) and (23b), one may claim that the *-te iru* forms in the latter sentences receive progressive interpretations since they co-occur with manner adverbs such as *yukkuri* and *zyuuzyuu*. While *yake-te iru* is more likely to be interpreted as perfect without any manner adverbs, *moe-te iru* is unclear as to which meaning—perfect or progressive—is the “default” interpretation. Moreover, as discussed in Section 5.5.1 above, since *-te iru* forms are typically associated with progressive when occurring in contexts which contain agentive subjects in Japanese, progressive interpretations arising from ‘agentless’ intransitive constructions strike us as puzzling.

It is surprising to note that few researchers mention this phenomenon (cf. Okuda 1978b, Jacobsen 1982a). I assume that this is simply because native speakers of Japanese in general hold a close association between intransitive members of ergative pairs and perfect meaning. In fact, some intransitive ergatives will never be interpreted as progressive in *-te iru* constructions, no matter what the contexts may be. For instance, predicates like *koware-te iru* and *ore-te iru* simply do not co-occur with the progressive marker *saityuu da*, as demonstrated below:

- (24) *Dentyuu-ga ore-te iru saityuu da
 utility pole-NOM break-ASP PRG
 ‘The utility pole is in the middle of breaking’

- (25) *Razio-ga koware-te iru saityuu da
 radio-NOM break-ASP PRG
 ‘The radio is in the middle of breaking’

On closer inspection, however, we can readily observe that other intransitive members of ergative pairs are more or less ambiguous as to whether they are progressive or perfect with *-te iru*. For these verbs, it is either contexts or aspectual predicates like *saityuu da* as illustrated in (20) – (23) that may determine their aspect.

Okuda (1978) suggests that for those intransitive members which have the potential to develop both perfect and progressive readings, the events denoted by such verbs should be understood to involve the two sub-events “action” and “change” almost occurring at the same time. In other words, intransitive verbs that are potentially perfect and progressive describe the syntactic subject as doing some action and causing a change to itself at once. On this view, the syntactic subject of *yake-* ‘broil’ is viewed as being engaged in the action of burning as well as undergoing a change of state. Consequently, Okuda claims, it is due to the association of the sub-event “action” with the aspectual marker *-te iru* that induces progressive readings in intransitive *-te iru* constructions.¹²

Apparently, Okuda’s analysis confronts a problem. That is, he does not clarify the criterion whereby we can make a distinction between intransitive verbs which involve both “action” and “change,” on the one hand, and those which involve only “change,” on the other. For instance, Okuda assumes that *nie-* ‘cook’ only has a perfect reading combined with *-te iru* since it involves only “change,” but he gives no specific reasons why it should be so (1978b:25). I argue that the lack of clarity in his analysis makes

¹² Okuda’s view of the complex sub-event structure coincides with the sub-event structure by Pustejovsky (1991) or the complex lexical semantic representation by Levin and Rappaport Hovav (1995).

Okuda claim that *nie-te iru* means nothing but “perfect,” which is proven to be wrong if we look at the progressive reading in (26).

- (26) Zyagaimo-ga gutugutu nie-te iru
 Potato-NOM nicely cook-ASP
 ‘The potatoes are cooking nicely’

In short, while Okuda’s sub-event approach may allow us to account for the progress occurrence of intransitive members of ergative pairs, it nevertheless fails to provide a precise explanation for the question of whether a given intransitive member can be progressive as well as perfect or simply perfect with *-te iru*. In the next section, I propose to apply different theoretical frameworks to the analysis of *-te iru* forms in addition to Okuda’s sub-event approach.

5.6.2 Change of state and endpoint

As part of the solution to the issue of predicting the aspectual properties of *-te iru* constructions, I basically follow Takahashi’s result and non-result distinction. In particular, as observed in Chapter 3, since a good portion of ergative pairs involve change of state or location, I will focus on result/change verb class in addressing the issue. Takahashi’s characterization of result verb class, given in (14) above, is repeated in (27).¹³

- (27) *Result verbs*
 A. *Continuative verbs*
 B. *Instantaneous verbs*

¹³ Hayashi and Shinzato (1999) also develop a classification similar to Fujii and Takahashi. Instead of the aspectual features of change vs. non-change and continuous vs. instantaneous, Hayashi and Shinzato propose to employ the features of [+/- process] and [+/- bound]. On their terms, [process] is concerned with whether an activity or an event needs interval of time and [bound] is concerned with whether an activity or an event has an endpoint.

What is noticeable about Takahashi's result class is that, compared to Okuda's change class, Takahashi takes into consideration a further temporal distinction between continuative and instantaneous. More specifically, Takahashi's framework is concerned not only with a change of state but also with the length of time involved in the change.

In my analysis of the aspectual meanings of Japanese ergative pairs, I consider the length of time or 'interval' needed for change of state to account in part for the cause of the twofold aspectual properties of certain ergative intransitives. Additionally, I propose that change of state be described in terms of whether or not it entails an inherent endpoint. In light of these two aspectual properties 'interval' and 'inherent endpoint,' intransitive ergatives that can have progressive meaning in *-te iru* are aspectually characterized as change-of-state verbs whose process takes place over interval of time and is marked by a clear, specific endpoint.

5.6.3 Dowty's (1979) Interval Semantics

To separate change-of-state verbs which inherently involve interval of time from those which do not, the present research adopts interval semantics, a theoretical framework originally formulated by Dowty (1979). Interval semantics is concerned primarily with the notion of change of state with its focus on whether a change may take place in one single step or in two or more distinct steps. According to Dowty, the interval-based approach will allow us to reclassify accomplishments and achievements, which are considered to consist exclusively of change-of-state verbs, into the following four separate categories (1979:184):

Table 2: Dowty's interval-based classification of change-of-state verbs

| | Non-Agentive | Agentive |
|-------------------------|-----------------------------------|---|
| Single change of state | <i>notice, realize; ignite</i> | <i>kill, point out (something to someone)</i> |
| Complex change of state | <i>flow from x to y; dissolve</i> | <i>build (a house), walk from x to y, walk a mile</i> |

The remainder of our discussion will focus on the two classes 'single change of state' and 'complex change of state' since the distinction between 'single' and 'complex' is tantamount to a distinction between 'non-interval' and 'interval.' That is, single change-of-state verbs like *notice* and *point out* express events which take place in an instant, whereas complex change-of-state verbs like *dissolve* and *walk a mile* require some interval of time until the events are complete. Among several syntactic tests that Dowty utilizes to ensure that each verb falls into the appropriate category, I propose to focus on *x finished V-ing* test since it differentiates single change of verbs from those of complex change of state, namely it is incompatible with verbs expressing instant interval of events (Kenny 1963, Dowty 1979, Mourelatos 1981, Tsujimura 1996).

(28) a. *John finished noticing the picture. (Binnick 1991:177)

b. John finished walking a mile.

Based on Dowty's interval semantics, I will demonstrate that the syntactic test *x V-owar-*, a Japanese equivalent of the *x finished V-ing*, accounts for the relationship between intransitive members of ergative pairs and their complex aspectual meanings with *-te iru*.

5.6.4 Syntactic Test *-owaru* ‘finish’

While the Japanese verb *owar-* ‘end, finish’ is used most commonly as a free verb (e.g., *zyugyoo-ga owar-u* ‘class ends’), it compounds frequently with other verbs, forming aspectual compound verbs which describe the events denoted by the base verbs as being completed by an Agent (cf. Matsumoto 1996:170).

- (29) a. Taroo-wa gohan-o tabe-owat-ta
 Taro-TOP meal-ACC eat-finish-PAST
 ‘Taro finished eating a meal’
- b. Taroo-wa syukudai-o si-owat-ta
 Taro-TOP homework-ACC do-finish-PAST
 ‘Taro finished doing his homework’

Note that *owar-* is not compatible with verbs that describe events occurring instantly.

- (30) a. *Taroo-wa eki-ni tuki-owat-ta
 Taro-TOP station-at arrive-finish-PAST
 ‘Taro finished arriving at the station’
- b. *Taroo-wa matigai-ni kizuki-owat-ta
 Taro-TOP error-OBL notice-finish-PAST
 ‘Taro finished noticing the errors’

Given (29) and (30), one may generalize that *owar-* occurs felicitously with non-stative verbs that require a certain length of time prior to the completion of the eventualities.

Turning to Japanese ergative intransitives, it is interesting to note that intransitive ergatives that can have progressive readings with *-te iru* are grammatical in compounding with *owar-*. The aforementioned change-of-state intransitive ergatives *yake-*, *toke-*, and *moe-* meet all the criteria.¹⁴

¹⁴ The aspectual verb *-owar-* has a variable form *-oe-*. While restrictions on the choice between the two forms have been extensively discussed in the literature (Shibatani 1973c:66-68, Matsumoto 1996:170ff), I will choose to utilize *-owar-* for my syntactic test for the sake of convenience.

- (31) a. Niku-wa yake-owat-ta
 meat-TOP roast-finish-PAST
 ‘The meat finished cooking’
- b. Koori-wa toke-owat-ta
 ice-TOP melt-finish-PAST
 ‘The ice finished melting’
- c. Takigi-wa moe-owat-ta
 firewood-TOP burn-finish-PAST
 ‘The firewood finished burning’

In contrast, ergative intransitives do not occur with *-owar-* when they refer exclusively to perfect situations in *-te iru* constructions.

- (32) a. Dentyuu-ga ore-te iru.
 utility pole-NOM break-ASP
 ‘The utility pole is broken’
- b. *Dentyuu-ga ore-owat-ta
 utility pole-NOM break-finish-PAST
 ‘The utility pole finished breaking’
- (33) a. Razio-ga koware-te iru
 radio-NOM break-ASP-PRG
 ‘The radio is broken’
- b. *Razio-ga koware-owat-ta
 radio-NOM break-finish-PAST
 ‘The radio finished breaking’

It seems clear that there is a close correlation between the progressive interpretation of *-te iru* ergative intransitive predicates and the compatibility of *owar-* with ergative intransitives. I argue that such ergative intransitives are characterized as verbs entailing (1) change of state involving interval of time and (2) inherent clear endpoint in events. The question that remains is how many intransitive ergatives are compatible with *owar-*. In the next section, I analyze Jacobsen’s list of Japanese ergative pairs with the aim of suggesting an aspectual classification of change-of-state ergative pairs.

5.6.5 V-*owar*- ‘finish V’ Test to the Ergative Pairs in Jacobsen (1992)

We observed in Chapter 4 that many of the ergative pairs in Jacobsen (1992) are semantically opaque and therefore should be separated from those who hold a close semantic link. In the survey that follows, I focus my attention on the ergative pairs which are semantically transparent (see Chapter 4, Section 4.3.1 (25)). Moreover, following Dowty’s view that the *x finished V-ing* test concerns the two different types of change (i.e., single versus complex change), I eliminate from Jacobsen’s data the pairs which do not involve change of state.¹⁵ This leaves us with the following eighty-five ergative pairs which are semantically transparent and entail a change of state as part of the semantic properties.

(34) INTRANSITIVE

agar- ‘rise’
 ak- ‘open’
 are- ‘become ravaged’
 atatamar- ‘warm’
 boke- ‘become unclear’
 hae- ‘grow’
 huyake- ‘become soaked’
 hag- ‘peel off’
 hekom- ‘become dented’
 her- ‘decrease’
 hie- ‘cool (off)’
 hirogar- ‘spread’
 hiromar- ‘spread out’
 hodoke- ‘come untied’
 hogure- ‘become untied’
 hue- ‘increase’
 hukamar- ‘deepen’
 hukuram- ‘swell’

TRANSITIVE

age- ‘raise’
 ake- ‘open’
 aras- ‘ravage’
 atatame- ‘warm’
 bokas- ‘make unclear’
 hayas- ‘let grow’
 huyakas- ‘soak’
 hage- ‘peel off’
 hekomas- ‘dent’
 heras- ‘decrease’
 hiyas- ‘let cool’
 hiroge- ‘spread’
 hirome- ‘spread out’
 hodok- ‘untie’
 hogus- ‘untie’
 huyas- ‘increase’
 hukame- ‘deepen’
 hukuramas- ‘cause to swell’

¹⁵ To determine whether or not a given verb pair expresses a change of state, I referred to the criteria utilized by Levin (1993a) for her classifications of change-of-state verbs in English. In Levin’s classifications, verbs of change of position or location are subsumed under change of state, whereas verbs of appearance or disappearance are not. In dealing with Japanese counterparts in both cases, I follow Levin (1993a).

| | |
|----------------------------------|--------------------------|
| ie- 'heal' | iyas- 'heal' |
| kamar- 'become entangled' | karam- 'entangle' |
| kare- 'wither; dry out' | karas- 'wither; dry out' |
| katamar- 'harden' | katame- 'harden' |
| kawak- 'dry' | kawakas- 'dry' |
| kawar- 'change' | kae- 'change' |
| kire- 'become severed' | kir- 'sever' |
| kiyomar- 'become pure' | kiyome- 'purify' |
| koe- 'become fertile' | koyas- 'make fertile' |
| koge- 'become scorched' | kogas- 'scorch' |
| kozire- 'become worse' | koziras- 'make worse' |
| konare- 'become digested' | konas- 'digest' |
| koor- 'freeze' | kooras- 'freeze' |
| koware- 'become destroyed' | kowas- 'destroy' |
| kudake- 'become smashed' | kudak- 'smash' |
| kusar- 'go bad' | kusaras- 'let go bad' |
| kuzure- 'become razed' | kuzus- 'raze' |
| magar- 'bend' | mage- 'bend' |
| makure- 'become tucked up' | makur- 'tuck up' |
| marumar- 'become round' | marume- 'make round' |
| mekure- '(a page) become turned' | mekur- 'turn (a page)' |
| midare- 'become disordered' | midas- 'put in disorder' |
| moe- 'burn' | moyas- 'burn' |
| muke- 'peel' | muk- 'peel' |
| mure- 'become steamed' | muras- 'steam' |
| nezire- 'become twisted' | nezir- 'twist' |
| nie- 'cook' | ni- 'cook' |
| nigor- 'become muddy' | nigos- 'muddy' |
| nobi- 'become extended' | nobas- 'extend' |
| nukumor- 'warm (up)' | nukume- 'warm (up)' |
| nure- 'become wet' | nuras- 'wet' |
| nurum- 'become lukewarm' | nurume- 'make lukewarm' |
| ore- 'break' | or- 'break' |
| oti- 'drop' | otos- 'drop' |
| sagar- 'become lower' | sage- 'lower' |
| sake- 'tear' | sak- 'tear' |
| same- 'cool (off)' | samas- 'let cool (off)' |
| sebame- 'become narrow' | sebamar- 'make narrow' |
| simar- 'close' | sime- 'close' |
| sime- 'become wet' | simes- 'wet' |
| sodat- 'grow' | sodate- 'grow' |
| somar- 'become dyed' | some- 'dye' |
| sor- 'bend' | soras- 'bend' |
| sum- 'become clear' | sumas- 'make clear' |
| sure- 'become worn out' | sur- 'wear out' |
| takamar- 'heighten' | takame- 'heighten' |

| | |
|-----------------------------|----------------------|
| taore- 'fall' | taos- 'let fall' |
| tawam- 'bend' | tawame- 'bend' |
| tizim- 'shrink' | tizime- 'reduce' |
| togar- 'become sharpened' | tog- 'sharpen' |
| toke- 'dissolve' | tok- 'dissolve' |
| toke- 'melt' | tokas- 'melt' |
| tomor- 'light(up)' | tomos- 'light (up)' |
| toroke- 'melt' | torokas- 'melt' |
| tubure- 'become crushed' | tubus- 'crush' |
| tunagar- 'become connected' | tunage- 'connect' |
| uruo- 'become moistened' | uruowas- 'moisten' |
| wakare- 'become divided' | wake- 'divide' |
| wak- 'boil' | wakas- 'boil' |
| ware- 'break' | war- 'break' |
| yabure- 'tear' | yabur- 'tear' |
| yake- 'roast' | yak- 'roast' |
| yawarag- 'become softened' | yawarage- 'softened' |
| yozire- 'get twisted' | yozir- 'twist' |
| yugam- 'become crooked' | yugame- 'bend' |
| yurum- 'become loose' | yurume- 'loosen' |
| yogore- 'become dirty' | yogos- 'soil' |

The *V-owar-* I applied to the intransitive verbs in (32) shows that twenty-four verbs are grammatical or, at best, marginal.

Table 3: *V-owar-* test for Japanese ergative intransitives

| | <i>V-owar-</i> |
|---------------|----------------|
| grammatical | 12 |
| marginal | 12 |
| ungrammatical | 62 |

The 12 intransitive members which are grammatical with *-owar-* are illustrated in actual contexts below.

- (35) a. Doa-ga aki-owara-nai uti-ni kankyaku-wa kannai-ni
 door-NOM open-finish-hardly when audience-TOP hall-into
 nadarekon-da
 storm-PAST
 ‘Hardly did the doors finish opening when the audience stormed into
 the hall’
- b. Men-ga hogure-owaru mae-ni soup-o
 noodle-NOM become expanded-finish before soup base-ACC
 ire-te kudasai
 add-please
 ‘Please add the soup base before the noodles finish expanding’
- c. Sentakumono-ga kawaki-owaru mae-ni kansooki-ga tomat-ta
 laundry-NOM dry-finish before dryer-NOM stop-PAST
 ‘Before the laundry finished drying, the dryer stopped’
- d. Botoru-no mizu-ga koori-owaru made moo sukosi zikan-ga
 bottle-GEN water-NOM freeze-finish before more a little time-NOM
 kakaru yo
 take EMP
 ‘It will take a little more time before the bottled water finishes freezing’
- e. Gomi-ga zenbu moe-owaru mae-ni hi-ga kie-ta
 garbage-NOM all burn-finish before fire-NOM go out-PAST
 ‘The fire went out before all the garbage finished burning’
- f. Zyagaimo-ga yooyaku nie-owat-ta
 potato-NOM at last cook-finish-PAST
 ‘The potatoes finally finished cooking’
- g. Doa-ga simari-owaru made ugoka-naide-kudasi
 door-NOM close-finish until move-not-please
 ‘Do not move until the doors finish closing’
- h. Satoo-ga wazuka ippun-de toke-owat-ta
 sugar-NOM just one minute-in dissolve-finish-PAST
 ‘The sugar finished dissolving in just one minute’
- i. Koori-ga toke-owaru made matte-kudasai
 ice-NOM melt-finish until wait-please
 ‘Will you wait until the ice finishes melting?’
- j. Oyu-ga waki-owaru mae-ni gasu-ga kire-ta
 hot water-NOM boil-finish before gas-NOM run out-PAST
 ‘The gas ran out before the water finish boiling’

- k. Hone-ga tunagari-owaru made ude-o ugokasa-naide kudasai
 bone-NOM heal-finish before arm-ACC move-not please
 ‘Don’t move your arm before the bones finish healing’
- l. Sakana-ga yooyaku yake-owat-ta
 fish-NOM finally bake-finish-PAST
 ‘The fish finally finished roasting’

The verbs in (33) have one essential characteristic in common: they all lexically depict the endpoint of changes of state. For example, the verbs *yake-* and *toke-* lexically refer to specific endpoints of changes, that is, the endpoints where ‘something is ready to be eaten after being roasted’ and ‘a piece of ice has changed into liquid,’ respectively. These verbs are in striking contrast to verbs which do not lexicalize such inherent endpoints. Thus, change-of-state verbs like *koe-* ‘become fat’ and *agar-* ‘rise’ lexically specify no clear endpoint.¹⁶ Consequently, they prove to be ungrammatical when occurring with *-owar-*.

- (36) a. *Taroo-wa koe-owat-ta
 Taro-TOP become fat-finish-PAST
 ‘Taro finished becoming fat’
- b. *Huusen-ga agari-owat-ta
 balloon-NOM rise-finish-PAST
 ‘The balloon finished rising’

Note also that all of the verbs above except for *tunagar-* in (33k) can grammatically co-occur with the progressive suffix *-saiyuu da*, as demonstrated below.

- (37) a. Doa-ga ai-te iru saityuu-ni seki-o tata-naide kudasai
 door-NOM open-ASP while seat-ACC stand-NEG please
 ‘While the door is opening, please do not stand up from your seat’

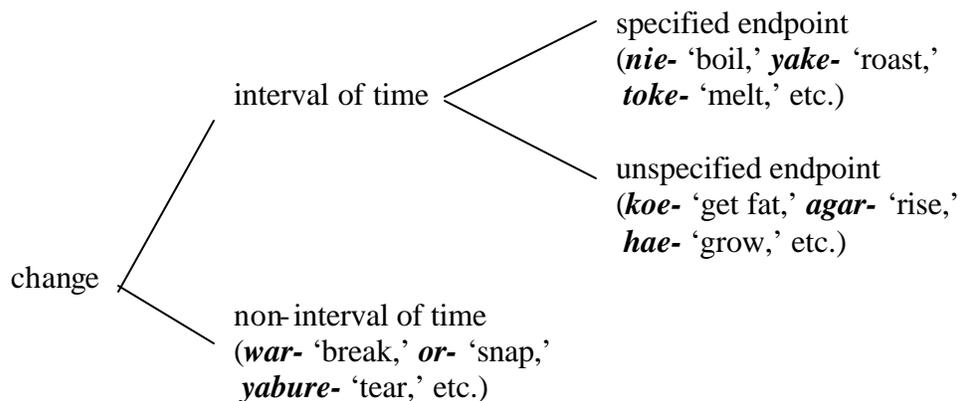
¹⁶ Since I focus on lexical aspects on my analysis, sentences like *hyakkiro made hutoru* ‘gain weight up to 100 kilograms’ and *sankai made aga-tta* ‘go up to the third floor’ are, even though they refer to certain endpoints compositionally, outside the scope of the current study.

- b. Ima oyu-no naka-de men-ga hogure-te iru
 now hot water-GEN inside noodles-NOM become expand-ASP
 saityuu da
 PRG
 ‘The noodles are expanding in the hot water now’
- c. Ima kansooki-no naka-de sentakumono-ga kawai-te iru saityuu da
 now dryer-GEN inside laundry-NOM dry-ASP PRG
 ‘The laundry is drying now in the dryer’
- d. Niku-ga reitooko-no naka-de koot-te iru saityuu da
 meat-NOM freezer-GEN inside freeze-ASP PRG
 ‘The meat is freezing now in the freezer’
- e. Ima syookyakuro-no naka-de gomi-ga moe-te iru saityuu da
 now incinerator-GEN inside garbage burn-ASP PRG
 ‘The garbage is burning in the incinerator’
- f. Zyagaimo-ga gutugutu nie-te iru saityuu da
 potato-NOM nicely cook-ASP PRG
 ‘The potatoes are cooking nicely’
- g. Doa-ga simat-te iru-saityuu niwa sono tikaku-ni tata-naide
 door-NOM close-ASP-PRG while there near stand-NEG
 kudasai
 please
 ‘While the door is closing, please do not stand near it’
- h. Satoo-ga oyu-no naka-de toke-te iru saityuu da
 sugar-NOM hot water-GEN inside dissolve-ASP PRG
 ‘The sugar is dissolving in the hot water’
- i. Koorasite-oita niku-ga ima toke-te iru saityuu da
 frozen meat-NOM now melt-ASP PRG
 ‘The frozen meat is melting now’
- j. Ohuro-ga ima wai-te iru saityuu da
 bath-NOM now boil-ASP PRG
 ‘The bath is getting ready now’
- k. #Kossetu-sita hone-ga ima tunagat-te iru saityuu da
 broken bone-NOM now heal-ASP PRG
 ‘The broken bone is healing now’

1. Sakana-ga zyuuzyuu-to yake-te iru saityuu da
 fish-NOM nicely roast-ASP PRG
 ‘Fish is cooking nicely now’

To summarize, in light of the results of the two syntactic tests, I propose to reclassify Japanese intransitive change-of-state verbs as follows. Firstly, the change-of-state verbs should be separated into “interval” and “non-interval” groups. My findings have shown that a majority of the verbs belong to the interval group. Secondly, verbs of the interval group should be further divided into a specified endpoint group and an unspecified endpoint group. This classification is diagrammed below.

(38)



My conclusion is that when intransitive members of Japanese morphological pairs represent change of state or location, it is the combination of an interval of time and a specific endpoint that enables these verbs to have progressive meanings in the *-te iru* construction.

5.7 Summary

I have maintained in this chapter that change-of-state verbs in Japanese should not be classified as one single group. Instead, in applying the theoretical framework of interval semantics to Japanese morphological pairs, I have demonstrated that change-of-state verbs should be reclassified based on the interval of time and the specificity of the

endpoint of a change. In this way, we are better able to predict the emergence of progressive meanings among intransitive members of morphological pairs. My view is basically consistent with Okuda in that change of state is the most crucial factor in inducing a perfect meaning in the *-te iru* construction. In the course of my analysis, however, I have proposed that the interval of time involving a change of state, which is rejected by Okuda, and the endpoint of change should be taken into account for providing a more precise explanation to some special verbs like *yake-* and *toke-*.

CHAPTER 6 CONCLUSION AND FUTURE RESEARCH

6.1 Conclusion

The primary objective of this dissertation has been to provide a thorough lexical semantic approach for Japanese ergative pairs based on the rich research tradition of the lexical semantic approach to ergative pairs in Western linguistics. Specifically, there were two primary goals of conducting a lexical semantic analysis of Japanese ergative pairs. First, it was expected that additional data from non-European languages like Japanese might add new perspective to the findings of previous studies, serving in part to test the validity of the lexical semantic approach which has been predominantly targeted toward European languages. Second, in light of the fact that Japanese linguistics or *kokugogaku* has a long, rich tradition of detailed morphological description of ergative pairs, my constant position was to de-emphasize and minimize the role of derivational morphology in dealing with ergative alternation so that other areas of studies such as syntax and semantics would receive more of our attention.

As for the first goal, I demonstrated that a lexical semantic approach to the ergative alternation is feasible for explicating the alternating behaviors of certain semantically coherent groups of verbs in Japanese. In essence, change of state, a semantic property that is viewed as a crucial factor in triggering verbs' alternation in English, proved to have significant relevance to the distinction between verbs which undergo the ergative alternation and verbs which do not. I proposed that the unavailability of

**tatakar-*, for instance, as a possible intransitive equivalent of *tatak-* ‘hit’ be accounted for due to the lack of the semantic property change of state associated with the verb, as with the English *hit*.

For those verbs that express change of state but yet fail to alternate in transitivity, I proposed to consider two additional semantic factors, that is (1) specification of a means or an instrument and (2) the contrast between onset and extended causations. For the first factor, it was demonstrated that our understanding that some verbs lexically specify a means or an instrument provided an account for the non-alternating behaviors of change-of-state transitive verbs such as *kar-* ‘cut (with a sickle)’ and *hik-* ‘grind.’ What is more noteworthy about the concept of specification of a means and an instrument is that it proved to correctly account for the pair *kir-/kire-* ‘cut/get cut,’ which is characterized as being inconsistent with respect to its alternating behaviors. The foregoing discussion revealed that *kir-* is lexically optional as to whether it specifies the use of a cutting device and that the alternation between the pair *kir-/kire-* obtains only when the transitive *kir-* is used in a context where the verb does not necessitate the use of an instrument.

As for the onset and extended causations, it was shown that the contrast explains the non-alternating behaviors of some transitive change-of-state verbs like *destroy* and *devastate* in English. While these verbs, which represent the semantic class *destroy* verbs, might well be characterized as verbs of total destruction (Levin 1993a), I proposed that the extendedness of causation associated with the verbs would better account for the impossibility of their ergative (or inchoative) use. Interestingly enough, it was shown that the criterion of onset-extended causation does not hold for the Japanese equivalents collectively referred to as *hakai-suru* ‘destroy’ verbs since many of the *hakai-suru* verbs

are intransitive. This presents a striking contrast to the English *destroy* verbs, which are predominantly transitive.

As for the second goal of the research, I analyzed 341 ergative pairs identified and classified by Jacobsen (1992) according to certain regular derivational patterns. The result of my research showed that there are a large number of pairs which, while they are morphologically related, hold more or less tenuous semantic links. I proposed that such semantically less transparent pairs be separated from those which are semantically transparent. Based on the theory of Distributed Morphology I further suggested that the insertion of derivational suffixes take place post-lexically. The implication of this view is that productivity is not necessarily measured by the extent to which the relationship between form and meaning is predictable. Rather, at least in the case of ergative pairs in particular, the semantic coherence and transparency is crucial in determining whether a given pair is listed as separate lexical items or generated from a single lexical item.

We also explored aspectual characteristics of Japanese ergative pairs in combination with the aspectual marker *-te iru*. Our investigations have revealed that the emergence of the two distinct aspectual meanings—progressive and perfect—associated with ergative transitives and ergative intransitives, respectively, has to do with the correlation between thematic roles and their grammatical functions. We observed that the thematic role in the syntactic subject in a sentence determines the aspectual meaning of the *-te iru* predicate in Japanese. That is, an Agent role in the syntactic subject position induces a progressive reading in an ergative transitive *-te iru* predicate and a Theme role in the same position induces a perfect meaning in an ergative intransitive *-te iru* predicate. Furthermore, I pointed out that some ergative intransitives could be interpreted as

progressive, and demonstrated that this phenomenon would be accounted for by further specifying change of state based on 'interval of time' and 'telicity.' This aspectual research has indicated the significance of considering ergative pairs not only from the perspective of semantic verb class but also from the perspective of transitivity within a pair.

Lastly, pedagogical implications of the findings are in order. It is generally agreed that non-native speakers find comprehending and remembering the distinction between ergative transitives and intransitives in Japanese, each of which has rigid morphological oppositions, to be an onerous task (Yoshikawa 1989:71). This is particularly true of learners whose native language, like English, has no such morphological distinctions between ergative pairs. To these learners, even the fact that ergative alternations are universally observed across languages seems to provide little help. In particular, the overwhelming number of morphological pairs could discourage learners from continuing with their study of Japanese.

In this light, while the research method adopted in the present study is rather theoretical, I believe that the pedagogical implications of my findings will hold major significance both for teachers and learners of Japanese. Firstly, the elimination of a number of semantically tenuous and archaic pairs from Jacobsen's list of ergative pairs has enabled us to propose a new, simplified classification of ergative pairs. As a consequence, the semantically, as well as morphologically, constant classification will facilitate the acquisition of this particular group of verbs by learners of Japanese. Secondly, my claim that morphological pairs are partially productive or predictable will help students to better deal with a linguistic phenomenon that has usually been left simply

to a matter of memorization. While it may still be a controversial issue whether the framework of Distributed Morphology is viable for explaining the entire derivational patterns of Japanese ergative verb pairs, I believe that the analysis presented in Chapter 4 may well lead us to further points of debates regarding how we may be able to utilize the notion of productivity to challenge the heavy reliance in the field of pedagogy on memorizing ergative pairs.

6.2 Further Issues

6.2.1 Validity of Lexical Semantics-Syntax Interface

The current research posited the existence of a close correlation between the semantics of verbs and syntactic behaviors like argument structure and alternations. Based on this view, I maintained that verbs of certain semantic classes show noticeable consistent syntactic behaviors both in English and Japanese. As repeatedly mentioned, however, previous studies have also pointed out a number of cases that appear to challenge the semantic class model (cf. C. Rosen 1984, S.T. Rosen 1996, Lemmens 1998, Ritter and Rosen 1998).

One of the difficulties that the semantic class model is confronted with is that a majority of verbs can appear in a bewildering range of syntactic contexts (Levin and Rappaport Hovav 1995:279). For instance, the Japanese verb *orir-* ‘get off’ is shown to take a variety of argument structures.

- (1) a. kuruma-kara ori-ru
 car-from get off-INF
 ‘to get off (from) the car’
- b. kuruma-o ori-ru
 car-ACC get off-INF
 ‘to get off the car’

- c. tugi-no eki-de densya-o ori-ru
 next-GEN station-at train-ACC get off-INF
 ‘to get off the train at the next station’
- d. erebetaa-de sankai-made ori-ru
 elevator-in third floor-down to come down-INF
 ‘to come down to the third floor in an elevator’

Needless to say, lexical semantic approaches alone are incapable of predicting every single syntactic structure involving *orir-*. Given such multi-faceted behaviors of verbs in terms of argument structure, one may well have good reason to question the validity of proposing the semantic class model or universal mapping relations such as Universal Alignment Hypothesis and Uniformity of Theta Assignment Hypothesis (cf. Rosen 1996:192). As discussed in Chapter 3, verbs that belong to the same semantic class can behave differently in terms of the ergative alternation. Ritter and Rosen stress this point, arguing against the use of verb meanings for explicating alternating behaviors of verbs:

The variable behavior of verbs with respect to the different alternations undermines the lexical semantic approach; it is difficult to see how the lexical semantic specification of a single verb could exclude an alternation in one use and allow it in another (Ritter and Rosen 1998:141).

Moreover, it seems that classifications of verbs are not determined solely by their meanings (Ritter and Rosen 1998:141). In other words, the classifications will never be flawless without taking into consideration the constructions in which those verbs occur. In keeping with this view, English verbs like *dance*, *jump*, or *walk* can be said to be ambiguous in a strict sense as to whether they are considered unergative and unaccusative. Rather, for such verbs it might be the context or construction in which they occur that determines their verbal type. For instance, *dance* is viewed as a typical unergative verb, being unable to causativize as illustrated in (2b). However, when the directional phrase

across the room is added the verb can occur in a causative transitive construction as in (2c).

- (2) a. Bill danced.
 b. *Sue danced Bill.
 c. Sue danced Bill across the room. (Ritter and Rosen 1998:141)

Ritter and Rosen (1998) argue that the grammaticality of (c) is due to the newly added telic or ‘delimited’ meaning. Since telicity is one major feature differentiating unaccusativity from unergativity, one may claim that *dance* in (c) has shifted from the original unergative to an unaccusative. The examples appear to suggest that the compositional factor is undeniably relevant to the verb type classification. In short, the examples appear to point to the claim that “it is necessary to distinguish a verb’s core semantics from the semantics of the expression when the verb appears in different argument structure arrays” (Goldberg 1995b:384).

The issue of syntactic-semantic interface has also been addressed under the theory of generative grammar. Based on the Projection Principle, the theory of GB has emphasized the role of the lexicon in accounting for the constructions of phrases and sentences, maintaining the idea that major aspects of the syntax of sentences are directly projected from the lexical properties of verbs. In order to implement the theory of the Projection Principle, verbs must have inherently structured lexical representations which may take the form of an argument structure or may take a lexical semantic representation of some type (Levin and Rappaport Hovav 1995:279). Following the proposal of the Minimalist Program, however, the role of lexicon in syntax has been greatly reduced. The basic tenet of the theory is that there is no internal interface between the lexicon and the syntax (cf. Tyler 1998:40). While there seems to be no specific discussion in Minimalist

Program on the issue of lexical-syntactic interface with respect to the ergative alternation, it is expected that the theory will view the process of alternation as being part of the operations in the computational system (cf. Tyler 1998:7-10).

6.2.2 Causativization

We have observed in Chapter 2 that certain semantically coherent transitive and intransitive verbs never alternate in transitivity under any circumstances. For instance, it was shown that certain unaccusative verbs never alternate with transitive uses (cf. Section 2.5.5). There are some cases, however, where such rules appear to be violated. Consider the following sentences:

- (3) a. The government disappeared him.
 b. Disappear fear.
 c. Clinton promised to grow the economy. (S.T. Rosen 1996:203)

As mentioned in Chapter 1, *disappear* is a member of verbs of occurrence, which are typically unaccusatives and usually characterized as not being used as causative transitives. Along the same lines, the verb *grow* in the sense of ‘develop, strengthen’ is normally used intransitively. Why, then, are the causativized uses of the verbs as shown in (3) possible?

In fact, while S.T. Rosen suggests that there are certain “additional requirements on causativization,” she stops short of explaining what these requirements are. In relation to this issue, I recently found in a newspaper article another instance of a genuine intransitive verb being causativized.¹

¹ Another case where anomalous causativization is observed is children’s misuse of verbs as in *You cried her* (Matsumoto 2000b:190).

- (4) The fire started on the south side of the home, near a spare bedroom, then spread to the attic and *collapsed* the roof, he said. (*The Gainesville Sun*, July 11, 2001)

More interestingly, I also found in another newspaper article an example of a genuine causative transitive verb being used intransitively.

- (5) “Technically, he’s unconscious because he’s not conversing like you and I are conversing, but he is showing very promising signs of starting to *arouse* somehow,” De Campos said. (*The Gainesville Sun*, July 12, 2001)

The use of *arouse* in the intransitive sense as in (5) seems particularly interesting given that it has the intransitive counterpart *arise* as the independent lexical item. Similar examples might well be observed the use of *raise* and *lay* as intransitive in place of *rise* and *lie*, respectively. These examples seem to point to two characteristics that English has shown in the course of history in regard to verbs and their transitivity. Firstly, the syntactic and semantic distinctions between morphologically-related ergative pairs become more and more unclear. Secondly, when this ambiguity occurs, there is a tendency for transitive uses of verbs to eat into the semantic territory of intransitives, not vice versa.

Examples of causativization of unaccusative verbs such as *disappear* and *collapse* do not seem so surprising to me considering the fact that Japanese allows a number of unaccusatives to causativize via the suffixation of *-as* or *-os* to the verb stems.

- (6) a. Ziko-ga okot-ta.
 accident-NOM happen-PAST
 ‘An accident happened’
- b. Torakku-no untensyu-ga ziko-o okosi-ta.
 truck-NOM driver-NOM accident-ACC cause-PAST
 ‘The truck driver caused the accident’

(Kageyama 1996:180)

- (7) a. Kuzira-no sugata-ga suityuu-ni kie-ta
 whale-GEN body-NOM water-into disappear-PAST
 ‘The body of the whale disappeared into the water’
- b. Kuzira-wa suityuu-ni sono sugata-o kes-ita
 whale-TOP water-into its body-ACC make disappear-PAST
 ‘The whale hid its body into the water’

I would assume that unaccusatives in general have potential for causativization cross-linguistically. It is a question of linguistic system in each language whether one language is more prone to causativize unaccusatives. In languages like Japanese where there are semi-productive causativizing suffixes, it is likely that we see more cases of causativization of unaccusatives. By contrast, in languages like English where no causativizing suffixes have been developed, it is very rare to observe such causativization process. Nevertheless, simply because unaccusatives are potentially causative-oriented, we have occasional chances of coming across cases like (6) and (7). Such idiosyncratic utterances might be simply slips of the tongue or intentional wrong uses of words for novel effect.

APPENDIX
JACOBSEN'S (1992) LIST OF ERGATIVE PAIRS

INTRANSITIVE

TRANSITIVE

I. -e/-ø-

| | |
|----------------------------------|--------------------------------|
| hageru “peel _{in} off” | hagu “peel _{tr} off” |
| hirakeru “open _{in} ” | hiraku “open _{tr} ” |
| hodokeru “come untied” | hodoku “untie” |
| hureru “shake _{in} ” | huru “shake _{tr} ” |
| kakeru “lack _{in} ” | kaku “lack _{tr} ” |
| kireru “become cut off, severed” | kiru “cut, sever” |
| kudakeru “become smashed” | kudaku “smash” |
| kuzikeru “become crushed” | kuziku “crush” |
| makureru “become tucked up” | makuru “tuck up” |
| mogeru “come off” | mogu “pluck off” |
| momeru “become wrinkled” | momu “wrinkle” |
| mukeru “peel _{in} ” | muku “peel _{tr} ” |
| nezireru “become twisted” | neziru “twist” |
| nugeru “come off” | nugu “take off” |
| nukeru “come out” | nuku “pull out” |
| oreru “break _{in} ” | oru “break _{tr} ” |
| sabakeru “sell _{in} ” | sabaku “sell _{tr} ” |
| sakeru “tear _{in} ” | saku “tear _{tr} ” |
| sireru “become known” | siru “come to know” |
| sogeru “become worn down” | sogu “slice off” |
| sureru “rub _{in} ” | suru “rub _{tr} ” |
| (kosureru) | (kosuru) |
| tigireru “become torn off” | tigiru “tear off” |
| tokeru “dissolve _{in} ” | toku “dissolve _{tr} ” |
| toreru “be take, harvested” | toru “take, harvest” |
| tureru “be caught (of fish)” | туру “catch (fish)” |
| ureru “sell _{in} ” | uru “sell _{tr} ” |
| wareru “break _{in} ” | waru “break _{tr} ” |
| yabureru “tear _{in} ” | yaburu “tear _{tr} ” |
| yakeru “burn _{in} ” | yaku “burn _{tr} ” |
| yozireru “become twisted” | yoziru “twist” |

Cf. also:

mieru “become visible”
nieru “boil_{in}”

miru “see”
niru “boil_{tr}”

II. -ø-/-e-

aku “open_{in}”
doku (noku) “get out of the way”
hairu “enter”
hikkomu “draw back”
hisomu “lurk”
hukumu “include (in self)”
husu “lie down”
itamu “hurt_{in}”
kagamu “bend_{in}”
karamu “become connected”
komu “become crowded”
kurusimu “suffer”
mukau “face”
muku “face”
(kata-muku “lean_{in}”
(so-muku “turn (one’s back) on”)
(utu-muku “look down”
nagusamu “become consoled”
narabu “line up_{in}”
nurumu “become lukewarm”
sirizoku “retreat”
sizumu “sink_{intr}”
sitagau “go along with”
sodatu “grow up”
sorou “become complete”
sou “go along with”
sobomu (tubomu) “become narrow”
sukumu “crouch”
susumu “advance_{in}”
tagau “differ”
tatu “stand_{in}”
(ara-datu “become aggravated”
(ira-datu “become irritated”
(saka-datu “stand on end”
tawamu “bend_{in}”
tigau “differ”
(matigau “become mistaken”
tizimu “shrink”
todoku “be delivered”

akeru “open_{tr}”
dokeru (nokeru) “remove”
ireru “put in”
hikkomeru “pull back”
hisomeru “conceal”
hukumeru “include (in another)”
huseru “lay down”
itameru “hurt_{tr}”
kagameru “bend_{tr}”
karameru “connect”
komeru “fill with”
kurusimeru “torment”
mukaeru “meet, welcome”
mukeru “cause to face”
katamukeru “lean_{tr}”
so-mukeru “turn_{tr} away”
utu-mukeru “cause to face down”
nagusameru “console”
naraberu “line up_{tr}”
nurumeru “make lukewarm”
sirizoku “drive back”
sizumeru “sink_{tr}”
sitagaeru “take along with”
sodateru “bring up, raise”
soroeru “make complete”
soeru “add”
sobomeru (tubomeru) “make narrow”
sukumeru “duck (one’s head)”
susumeru “advance_{tr}”
tagaeru “break (one’s word)”
tateru “stand_{tr}”
ara-dateru “aggravate”
ira-dateru “irritate”
saka-dateru “ruffle up”
tawameru “bend_{tr}”
tigaeru “change”
matigaeru “mistake”
tizimeru “reduce”
todokeru “deliver”

tugau “mate_{in} with”
 tuku “adhere to”
 (kata-zuku “become tidy”
 (kizu-tuku “become damaged”
 (na-tuku “become attached to”
 (tika-zuku “approach”
 tumu “become packed”
 tutau “go along”
 tuzuku “continue_{in}”
 ukabu “float_{in}”
 yamu “stop_{in}”
 yasumu “rest_{in}”
 yawaragu “become softened”
 yurumu “become loose”
 yugamu “become crooked”
 yureru “shake”

tugaeru “mate_{tr} with”
 tukeru “attach”
 kata-zukeru “tidy up”
 kizu-tukeru “damage”
 na-tukeru “win over”
 tika-zukeru “allow to approach”
 tumeru “pack”
 tutaeru “transmit”
 tuzukeru “continue_{tr}”
 ukaberu “float_{tr}”
 yameru “stop_{tr}”
 yasumeru “rest_{tr}”
 yawarageru “soften”
 yurumeru “loosen”
 yugameru “bend_{tr}”
 yuru “shake_{tr}”

III. -ar/-e-

agaru “rise”
 aratamaru “become improved”
 ataru “touch”
 atatamaru “become warm”
 atumaru “gather_{in}”
 azukaru “keep”
 butukaru “bump into”
 hamaru “fit_{in} into”
 hayamaru “become hasty”
 hazimaru “begin_{in}”
 hedataru “become separated”
 hikumaru “become lower”
 hirogaru “spread_{in} out”
 hiromaru “spread_{in}”
 hukamaru “deepen_{in}”
 kabusaru “become covered”
 kakaru “hang_{in}, come in contact”
 karamaru “become connected”
 kasanaru “pile up_{in}”
 katamaru “harden_{in}”
 kawaru “change_{in}”
 kimaru “become decided”
 kiwamaru “reach an extreme”
 kiyomaru “become pure”
 kurumaru “become wrapped up in”
 kuwawaru “join_{intr}”
 marumaru “become round”

ageru “raise”
 aratameru “improve”
 ateru “cause to touch”
 atatameru “warm_{tr} up”
 atumeru “gather_{tr}”
 azukeru “entrust to”
 butukeru “strike against”
 hameru “fit_{tr} into”
 \hayameru “hasten”
 hazimeru “begin_{tr}”
 hedateru “separate”
 hikumeru “lower”
 hirogeru “spread_{tr} out”
 hiromeru “spread_{tr}”
 hukameru “deepen_{tr}”
 kabuseru “cover”
 kakeru “hang_{tr}, put in contact”
 karameru “connect”
 kasaneru “pile up_{tr}”
 katameru “harden_{tr}”
 kaeru “change_{tr}”
 kimeru “decide”
 kiwameru “carry to an extreme”
 kiyomeru “purify”
 kurumeru “lump together with”
 kuwaeru “add”
 marumeru “make round”

| | |
|---|--|
| matomaru “take shape” | matomeru “put into order” |
| mazaru “become mixed with” | mazeru “mix with” |
| maziwaru “mingle with” | mazieru “mix with” |
| mitukaru “be found” | mitukeru “find” |
| mookaru “be earned” | mookeru “earn” |
| nukumaru “become warm” | nukumeru “warm _{tr} up” |
| osamaru “subside” | osameru “pacify” |
| osowaru “learn” | osieru “teach” |
| owaru “end _{in} ” | oeru “end _{tr} ” |
| sadamaru “be decided” | sadameru “decide” |
| sagaru “become lower” | sageru “lower” |
| (bura-sagaru “hang _{in} down” | bura-sageru “hang _{tr} down” |
| sazukaru “receive” | sazukeru “grant” |
| sebamaru “become narrow” | sebameru “make narrow” |
| simaru “close _{in} , become tight” | simeru “close _{tr} , tighten” |
| sizumaru “become quiet” | sizumeru “make quiet” |
| somaru “be dyed” | someru “dye” |
| sonawaru “be provided” | sonaeru “provide with” |
| sobomaru (tubomaru) “become narrow” | sobomeru (tubomeru) “make narrow” |
| sutaru “fall into disuse” | suteru “throw away” |
| suwaru “sit” | sueru “set” |
| takamaru “rise” | takameru “raise” |
| tamaru “collect _{in} ” | tameru “collect _{tr} ” |
| tasukaru “be helped” | tasukeru “help” |
| tazusawaru “participate in” | tazusaeru “carry on one’s person” |
| tizimaru (tuzumaru) “shrink” | tizimeru (tuzumeru) “reduce” |
| todomaru “stop _{in} ” | todomeru “stop _{tr} ” |
| tomaru “stop _{in} ” | tomeru “stop _{tr} ” |
| toozakaru “move away” | toozakeru “keep at a distance” |
| tukaru “soak _{in} in” | tukeru “soak _{tr} in” |
| tumaru “become packed” | tumeru “pack” |
| turanaru “line up _{in} ” | turaneru “line up _{tr} ” |
| tutawaru “be handed down” | tutaeru “transmit” |
| tutomaru “be fit for the role of” | tutomeru “play the role of” |
| tuyomeru “become strong” | tuyomeru “strengthen” |
| ukaru “pass (an exam)” | ukeru “take (an exam)” |
| umaru (uzumaru) “be buried” | umeru (uzumeru) “bury” |
| usumaru “become thin” | usumeru “make thin” |
| uwaru “be planted” | ueru “plant” |
| yasumaru “become rested” | yasumeru “rest” |
| yokotawaru “lie down” | yokotaeru “lay down” |
| yowamaru “weaken _{in} ” | yowameru “weaken _{tr} ” |
| yudaru “be boiled” | yuderu “boil” |

IV -ar-/-ø-

hasamaru “become caught between”
 husagaru “become obstructed”
 kurumaru “become wrapped up in”
 matagaru “sit astride”
 tamawaru “be granted”
 togaru “become sharp”
 tukamaru “be caught”
 tunagaru “become connected”

hasamu “put between”
 husagu “obstruct”
 kurumu “wrap up”
 matagu “straddle”
 tamau “grant”
 togu “sharpen”
 tukamu “catch”
 tunagu “connect”

V. -r-/-s-

amaru “remain”
 hitaru “soak_{in} in”
 kaeru “return_{in}”
 (hiru-gaeru “wave_{in}”
 (kutu-gaeru “tip_{in} over”
 kaeru “hatch_{in}”
 kieru “go out”
 kitaru “come”
 korogaru “roll_{in}”
 kudaru “go down”
 mawaru “turn_{in}”
 modoru “return_{in}”
 naoru “become better”
 naru “become”
 (nakunaru “become lost, die”
 nigoru “become muddy”
 noboru “rise”
 nokoru “remain”
 okoru “happen”
 satoru “realize”
 simeru “become wet”
 taru “suffice”
 tirakaru “become scattered”
 tomoru “become lit”
 tooru “pass through”
 uturu “appear, become reflected”
 uturu “move_{intr}”
 wataru “cross over”
 yadoru “lodge at”

amasu “let remain”
 hitasu “soak_{tr} in”
 kaesu “return_{tr}”
 hiru-gaesu “wave_{tr}”
 kutugaesu “tip_{tr} over”
 kaesu “hatch_{tr}”
 kesu “extinguish”
 kitasu “bring about”
 korogasu “roll_{tr}”
 kudasu “lower”
 mawasu “turn_{tr}”
 modosu “return_{tr}”
 naosu “fix”
 nasu “make”
 nakunasu “lose”
 nigosu “muddy”
 nobosu “bring up, serve”
 nokosu “leave”
 okosu “cause”
 satosu “make realize”
 simesu “wet”
 tasu “add, supplement”
 tirakasu “scatter”
 tomosu “light”
 toosu “let pass through”
 utusu “capture (an image), reflect”
 uturu “move_{tr}”
 watasu “hand over”
 yadosu “give lodging to”

VI. -re-/-s-

arawareru “appear”

arawasu “show”

hanareru “move away from”
 hazureru “come off”
 kakureru “hide_{in}”
 kegareru “become unclear”
 koboreru “spill_{in}”
 kogareru “burn with passion for”
 konareru “become digested”
 kowareru “break_{in}”
 kuzureru “collapse”
 mabureru “become smeared”
 midareru “become disordered”
 mureru “become steamed”
 nagareru “flow”
 nogareru “escape”
 taoreru “fall”
 tubureru “become crushed”

hanasu “separate from”
 hazusu “take off”
 kakusu “hide_{tr}”
 kegasu “make unclear”
 kobosu “spill_{tr}”
 kogasu “scorch”
 konasu “digest”
 kowasu “break_{tr}”
 kuzusu “demolish”
 mabusu “smear”
 midasu “put into disorder”
 musu “steam”
 nagasu “wash away”
 nogasu “let escape”
 taosu “bring down”
 tubusu “crush”

VII. -ri-/-s-

kariru “borrow”
 tariru “suffice”

kasu “lend”
 tasu “add, supplement”

VIII. -ø-/-as-

aku “open_{in}”
 au “go together”
 hagemu “be diligent in”
 hekomu “become dented”
 heru “decrease_{in}”
 hikaru “shine”
 hikkomu “draw back”
 huku “blow_{in}”
 hukuramu “swell”
 huru “rain”
 kagayaku “shine”
 kawaku “dry_{in}”
 kiku “take effect”
 kooru “freeze_{in}”
 koru “become absorbed in”
 kusaru “spoil_{in}”
 mayou “become perplexed”
 meguru “come around”
 moru “leak_{in}”
 naku “cry”
 naru “ring_{in}”
 nayamu “be troubled”

akasu “reveal”
 awasu “bring together”
 hagemasu “encourage”
 hekomasu “dent”
 herasu “decrease_{tr}”
 hikarasu “cause to shine”
 hikkomasu “pull back”
 hukasu “puff, smoke”
 hukuramasu “cause to swell”
 hurasu “cause to rain”
 kagayakasu “cause to shine”
 kawakasu “dry_{tr}”
 kikasu “use”
 koorasu “freeze_{tr}”
 korasu “concentrate_{tr} on”
 kusarasu “spoil_{tr}”
 mayowasu “perplex”
 megurasu “turn around”
 morasu “leak_{tr}”
 nakasu “cause to cry”
 narasu “ring_{tr}”
 nayamasu “trouble”

odoroku “be surprised”
 sawagu “become excited”
 soru “bend_{in}”
 suberu “slip”
 suku “become transparent”
 sumu “end_{in}”
 teru “shine”
 tiru “scatter_{in}”
 tobu “fly”
 togaru “become sharp”
 tomu “become rich”
 ugoku “move_{in}”
 waku “boil_{in}”
 wazurau “be troubled”
 yorokobu “be happy”

odorokasu “surprise”
 sawagasu “cause excitement”
 sorasu “bend_{tr}”
 suberasu “let slip”
 sukasu “make transparent”
 sumasu “end_{tr}”
 terasu “shine light on”
 tirasu “scatter_{tr}”
 tobasu “let fly”
 togarasu “sharpen”
 tomasu “make rich”
 ugokasu “move_{tr}”
 wakasu “boil_{tr}”
 wazurawasu “trouble”
 yorokobasu “please”

IX. -e-/-as-

akeru “dawn”
 areru “become ravaged”
 bakeru “turn into”
 bareru “come to light”
 bokeru “become unclear”
 deru “come out”
 haeru “grow_{in}”
 hageru “peel_{intr} off”
 hareru “clear_{in} up”
 hateru “come to an end”
 hieru “become cool”
 hueru “increase_{in}”
 hukeru “grow late”
 huyakeru “become soaked”
 ieru “heal_{in}”
 kakeru “become lacking”
 kareru “wither; dry_{in} out”
 kireru “run out_{in}”
 koeru “become fat, fertile”
 kogeru “become scorched”
 korogeru “roll_{in}”
 kozireru “become worse”
 kureru “(day, year) comes to an end”
 magireru “become confused with;
 be distracted”
 makeru “be defeated”
 moeru “burn_{in}”
 moreru “leak_{in}”

akasu “spend (the night)”
 arasu “ravage”
 bakasu “bewitch”
 barasu “expose”
 bokasu “make unclear”
 dasu “take out”
 hayasu “grow_{tr}”
 hagasu “peel_{tr} off”
 harasu “clear_{tr} up”
 hatasu “carry out”
 hiyasu “cool”
 huyasu “increase”
 hukasu “stay up late at (night)”
 huyakasu “soak”
 iyasu “heal_{tr}”
 kakasu “miss (a meeting)”
 karasu “let wither, dry_{tr} out”
 kirasu “run out of”
 koyasu “fatten, fertilize”
 kogasu “scorch”
 korogasu “roll_{tr}”
 kozirasu “make worse”
 kurasu “pass (time)”
 magirasu “conceal in; distract”
 makasu “defeat”
 moyasu “burn_{tr}”
 morasu “leak_{tr}”

mureru “become steamed”
 nareru “become accustomed to”
 nigeru “escape”
 nukeru “be left out”
 nureru “become wet”
 okureru “be late for”
 sameru “awake”
 soreru “deviate”
 taeru “die out”
 tareru “drop_{in}”
 tizireru “become curly”
 tokeru “melt_{in}”
 torokeru “melt_{in}; be bewitched”
 tuieru “be wasted”
 zireru “be impatient”
 zureru “become out of line”
 zyareru “be playful”

murasu “steam”
 narasu “accustom to, tame”
 nigasu “let escape”
 nukasu “leave out”
 nureru “make wet”
 okurasu “delay”
 samasu “wake_{tr} up”
 sorasu “divert”
 tayasu “exterminate”
 tarasu “let drop”
 tizirasu “curl_{tr}”
 tokasu “melt_{tr}”
 torokasu “melt_{tr}; bewitch”
 tuiyasu “consume”
 zirasu “irritate”
 zurasu “shift out of line”
 zyarasu “play with”

X. -i-/as-

akiru “grow tired of”
 dekiru “come into existence”
 ikiru “live”
 koriru “learn (from experience)”
 mitiru “become full”
 nobiru “become extended”
 toziru “close_{in}”

akasu “make (one) tire of”
 dekasu “bring about”
 ikasu “bring to life”
 korasu “give (one) a lesson”
 mitasu “fill”
 nobasu “extend”
 tozasu “close_{tr}”

XI. -i/-os-

hiru “become dry”
 horobiru “go to ruin”
 okiru “get up_{in}”
 oriru “get off”
 otiru “fall”
 sugiru “go past”

hosu “dry”
 horobosu “destroy”
 okosu “get_{tr} up”
 orosu “let off”
 otosu “drop”
 sugosu “pass (time)”

XII. -ø/-se-

abiru “pour (over oneself)”
 kaburu “become covered with, put
 on (one’s own) head”
 kiru “put on (one’s own) body”
 niru “resemble”
 noru “get on”

abiseru “pour (over another)”
 kabuseru “cover (with), put on another’s
 head”
 kseru “put on (another’s) body”
 niseru “model after”
 noseru “put on, give a ride to”

yoru “approach”

yoseru “allow to approach”

Cf. also:
miru “see”

miseru “show”

XIII. -e-/-akas-

amaeru “act dependent (on)”
hagureru “stray from”
obieru “become frightened at”
sobieru “rise high”

amayakasu “spoil”
hagurakasu “put off, evade”
obiyakasu “frighten, threaten”
sobiyakasu “hold (shoulders) high”

Cf. also:
neru “go to bed”

nekaseru “put to bed”

XIV. -or-/-e-

komoru “be fully present”
nukumoru “become warm”

komeru “fill with”
nukumeru “warm_r up”

XV. -are-/-e-

sutareru “fall into disuse”
torawareru “be seized with, caught by”
wakareru “become divided”

suteru “throw away”
toraeru “seize, catch”
wakeru “divide”

XVI. Miscellaneous affix pairs not fitting the above patterns

hagareru “peel_{in} off”
hogureru “become untied”
hosoru “become thin”
hukureru “swell”
kakeru “run”
kasureru “become hoarse”
kikoeru “become audible”
koeru “go over”
kudaru “go down”
kusuburu “smoke”
maziru “become mixed”
nakunaru “become lost”
nigiwau “become prosperous”
nobiru “become extended”
obusaru “get on (someone’s back)”
oyobu “reach”

hagu “peel_r off”
hogusu “untie”
hosomeru “make narrow”
hukuramasu “cause to swell”
karu “drive, spur”
karasu “make hoarse”
kiku “hear”
kosu “go over”
kudasaru “bestow”
kusuberu “fumigate”
mazeru “mix with”
nakusu “lose”
nigiwasu “make prosperous”
noberu “extend”
obuu “carry on (one’s back)”
oyobosu “extend (influence) to”

sasaru “become stuck in”
 tukamaru “become caught”
 tukiru “run out_{in}”
 tumoru “become accumulated”
 umareru “be born”
 uruou “become moistened”
 useru “disappear”
 uzumeru “become buried”
 yureru “sway”

sasu “stick, thrust into”
 tukamaeru “catch”
 tukusu “use up”
 tumu “accumulate”
 umu “give birth to”
 uruosu “moisten”
 usinau “lose”
 uzumeru “bury”
 yurugasu “cause to sway”

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