

# A Contrastive Study of Function Verbs in English and Japanese

## – *Cut* and *Kiru*

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### Abstract

This paper gives a contrastive analysis of function verbs in English and Japanese, *cut* and *kiru* in the framework of the Generative Lexicon (Pustejovsky 1995). Despite their division sense, these two express performance of an event when they take constituents which denote eventuality. They differ, however, in the resulting event structures. On the one hand, ‘*cut*+an event nominal’ can be dealt with as involving a generative operation called *co-composition*, and describes a temporally bounded event. On the other hand, *V-kiru* denotes an accomplishment event by means of another operation, *type coercion*. This analysis also accounts for the difference in selection restriction between the two forms.

### 1 Introduction

*Cut* and *kiru*, as main verbs, both express division sense such as in *cut a cake* and *keeki-o kiru* ‘to cut a cake’. It is well known among Japanese linguists that a verb *kiru* ‘to cut’ in Japanese is also used as a function verb<sup>1</sup>, expressing performance of an event, like (1) (Himeno 1980 and others). It is interesting to note that the English counterpart to *kiru*, i.e. *cut* can participate in so-called Light Verb Construction when it co-occurs with event nominals, similarly to other well-established light verbs like *take* and *have*. For instance, parallel to (2a), we can say (2b) as well as (2c).

(1) Taroo-ga biiru-o nomi-ki-tta.

Taroo-NOM beer-ACC drink-cut-PAST

‘Taroo drank the beer to the last drop.’

(2) a. John looked at the clock quickly.

b. John cut a quick look at the clock.

c. John {had/took} a quick look at the clock. [Light Verb Construction]

From observation of (3), however, it seems that these two verbs differ in selection restrictions on their complements. While *kiru* co-occurs with a constituent that denotes an activity of drinking, *cut* does not. Conversely, while *cut* takes *a look* as its complement, *kiru* does not combine with *mi-* ‘to look’.

(3) a. Taroo-ga biiru-o nomi-ki-tta. (=1)

‘Taroo drank the beer to the last drop.’

b. \*John cut a drink of the beer.

c. \*Taroo-ga subayaku tokei-o mi-ki-tta.

Taroo-NOM quickly clock-ACC look-at-cut-PAST

‘Taroo looked at the clock quickly and thoroughly.’

d. John cut a quick look at the clock. (=2b)

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<sup>1</sup> Function verbs are verbs which have little lexical content and mainly provide grammatical information.

Based on the Generative Lexicon Theory, this paper analyzes the event structures of these two forms ‘cut+an event nominal’ and V-*kiru*, and accounts for the difference in selection restriction between the two.

## 2 What *Cut* and *Kiru* Have in Common

### 2.1 The main verbs *cut* and *kiru* – division and creation

*Cut* and *kiru*, as main verbs, both express not only division sense but also creation sense as in (4).

- (4) a. John cut {a pattern out of paper/a key/a slice of cake}.  
 b. Taroo-ga {katagami/mado/irori}-o ki-tta.  
 Taroo-NOM {pattern/window/fireplace}-ACC cut-PAST  
 ‘Taroo {cut a pattern/installed a window frame/built in a fireplace}.’

When a nominal is incompatible with the type of complement that a verb calls for, it could be that the interaction between these constituents gives rise to a new sense. This semantic operation is called *co-composition* (see Pustejovsky 1995). This generative device explains the mechanism by which the creation sense is derived from the division sense of *cut*. For example, the composition of *cut* and *a key* produces a sense of creation. Since *a key* in *cut a key* is not a cut material but a product, it would appear that this nominal conflicts with the meaning of *cut*. However, considering that keys are artifacts produced by cutting metal, it would be appropriate to assume that this information is unified with the sense of *cut* in a certain way. Figure 1 is a semantic representation of *cut a key*. This figure shows that *cut a key* embeds within it division sense, or the inherent sense of *cut*. This compositional operation is done by unification of qualia values for the agentive role in *cut* and its argument nominal *a key*, or ‘divide (e)’, as represented by the Generative Lexicon notation. In this way the creation sense arises compositionally and therefore it should not be enumerated in its name in the lexicon. Although details of creation sense of *kiru* must be omitted due to limitations of space, it has the same compositional process as that of *cut*. The sense is thus not an inherent but a derived one for the same reason.

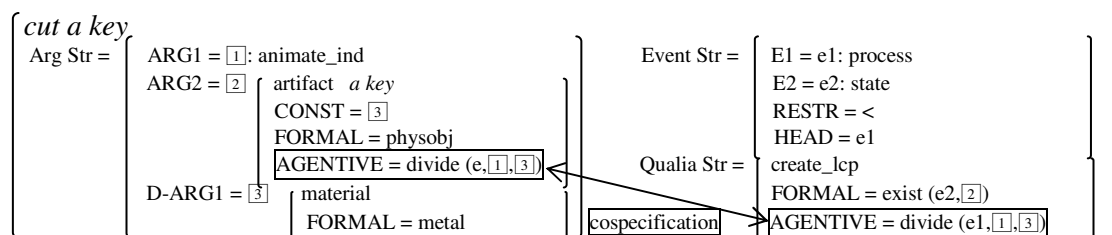


Figure 1. Representation of *cut a key* in the framework of Generative Lexicon

### 2.2 The function verbs *cut* and *kiru* – performance and delimitedness

When *cut* and *kiru* play a role as function verb, combining with a constituent that expresses eventuality, what they depict is not cessation but performance of the event that the constituent denotes. For instance, sentences in (5) are approximately equal to ‘John looked at the clock quickly’ or ‘Taroo drank the beer to the last drop’, not to ‘John stopped looking at the clock quickly’ or ‘Taroo stopped drinking the beer’.

- (5) a. John cut a quick look at the clock. (=2b)  
 b. Taroo-ga biiru-o nomi-ki-tta. (=1)  
 Taroo-NOM beer-ACC drink-cut-PAST  
 ‘Taroo drank the beer to the last drop.’

‘Cut+an event nominal’ and V-*kiru* have another feature in common: events these forms express are delimited. This is verified by the fact that durative adverbials cannot co-occur with *cut* or *kiru*, although they can be used in the corresponding non Light Verb Construction.

- (6) a. John {looked/\*cut a look} at the clouds *all day*.  
 b. John {smiled/\*cut a smile} *all the way home*.  
 (7) Taroo-ga *ichi-nichi-juu* shimbun-o {yom-da/\*yomi-ki-tta}.  
 Taroo-NOM one-day-for newspaper-ACC {read-PAST/read-cut-PAST}.  
 ‘Taroo {read the newspaper/read the newspaper to the end} all day.’

### 3 Event Types

In terms of classification of events that predicates express, this paper follows Van Valin & LaPolla (1997). As seen from Table 1, they explicitly differentiate basic (non-causative) event types from their causative counterparts. The former correspond to Vendler’s (1967) four aspectual classes (states, activities, achievements, and accomplishments). Furthermore, Van Valin & LaPolla add another type to these; *active accomplishments*, which are the accomplishment use of activity predicates. *Carl ran to the store* is a basic version of this type. They argue that active accomplishments are not causative, since ‘Carl’s running caused him to arrive at the store’ does not paraphrase the original sentence appropriately.

	Basic	Causative
States	John knew the story.	John frightened the dog.
Activities	John ran.	John ran the dog.
Achievements	The balloon popped.	John popped the balloon.
Accomplishments	The ice melted. Carl ran to the store. (Active)	The hot water melted the ice. Carl ran the dog to the store. (Active)

Table 1. Event types (Van Valin & LaPolla 1997)

*Run* is a lexical activity predicate. This verb can be modified by a durative adverbial as in (8a), not by a frame adverbial. In contrast, when it combines with a prepositional phrase *to the store*, modification by a frame adverbial is well formed, while that by a durative adverbial is ill formed. Therefore, what (8b) expresses is an accomplishment. According to Pustejovsky (1991), the prepositional phrase in this example plays the role of a function shifting an argument *walk* from activity to accomplishment. To return to the main topic of this paper, we can also regard *cut* or *kiru* as aspectual function<sup>2</sup>, since these verbs shift delimitedness, as we have already seen in Section 2. In the following sections, the properties of the verbs as aspectual functions are discussed in more detail.

- (8) a. Carl ran {for an hour/\*in an hour}. [Activity]  
 b. Carl ran to the store {\*for an hour/in an hour}. [Accomplishment]

### 4 The Semantics of ‘Cut+an Event Nominal’

Examining 300 event nominals, I have found that 76 of them occur with *cut*, and that many nominals in this construction contain modifiers, yielding examples like (9). This construction is thus highly productive.

- (9) cut a stark contrast, cut a fine figure, cut a big grin, cut a good interview, cut an impressive look, cut a warning look, cut an imposing presence, cut a genuine smile, cut a swift turn, ...

<sup>2</sup> The word *function* here, used in function-argument context, represents a different concept from *function* in function verbs.

It can be said that not only ‘*cut*+a concrete nominal’ but also ‘*cut*+an event nominal’ generates creation sense, since performing an event is, in other words, creating an event. Compositional operation of the latter construction is parallel to that of the former. As observed in Figure 2, *a scream* is brought about by measuring out an unbounded activity of screaming, ‘*scream\_act* (e)’ (in the sense of Tenny 1994). Since the agentive role of *a scream*, ‘*measure\_out* (e)’, do not contradict that of *cut*, ‘*divide* (e)’, they unify and yield a creation reading, where the entire *cut a scream* expresses a temporally bounded activity of screaming.

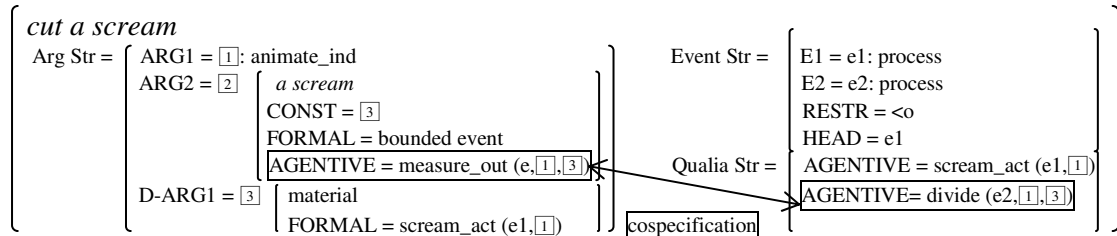


Figure 2. Representation of *cut a scream* in the framework of Generative Lexicon

That is, the sense of *cut* in a ‘*cut*+a concrete nominal’ corresponds to that of *cut* in ‘*cut*+an event nominal’, and both of the constructions share the same compositional process and underlying principles. It is clear that there is no need to enumerate these two words as different lexical items, so to speak, *cut*1 (heavy verb) and *cut*2 (function or light verb) in the lexicon. The only difference is that whether a complement of *cut* is a concrete artifact or an event.

It is not widely known that event nominals collocating with *cut* show a specific distribution. It is predictable, however, what type of nominal *cut* takes. The physical products created by ‘cutting’ consist of one homogeneous material. In *cut a diamond* and *cut a key*, for example, these products are made from diamond and metal, respectively. These materials are uniform in nature. This is one of the distinctive features of *cut* creation, since other means of creation require multiple ingredients, such as *assembling a car from parts*, and *composing a poem from words*. This uniformity of materials is metaphorically conceptualized as atelicity of events, since atelic events do not contain multiple subevents. As shown in Figure 3, states and activities consist of one uniform event and lack an inherent end point. In contrast, the other two types consist of more than one subevent and contain a logical culmination. It is the notion of atelicity that distinguishes the former from the latter. The two latter, atelic events, differ from each other is that whereas the initial event (e1) of an accomplishment is an activity, that of an achievement is underspecified (Alsina 1999).

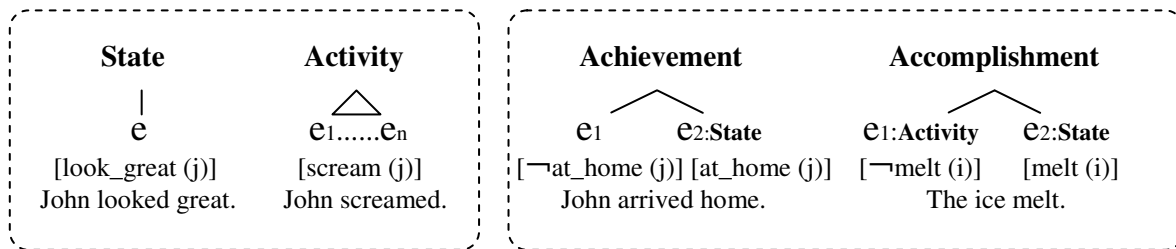


Figure 3. Basic event types and their internal structures

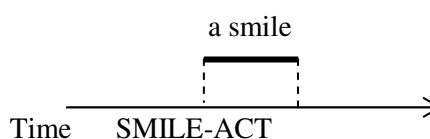
Consequently, as shown in Table 2, *cut* co-occurs with a basic state or activity nominal, but not with other event nominals. Causative events are heterogeneous in that they consist of a causing event and a caused event. Therefore they are not consistent with the type *cut* calls for.

	Basic	Causative
States	a contrast, a stylish look, ...	*annoyance to the neighbors, ...
Activities	a warning look, a scream, ...	*a walk of the dog, ...
Achievements	*an arrival, *a death, ...	*an explosion of a bomb, ...
Accomplishments	*a melt, *a destruction, ...	*a destruction of a town, ...

Table 2. Distribution of nominal complements of *cut*

Another feature of ‘*cut*+a concrete nominal’ is reduction in size of products. Resulting products are inevitably smaller than their materials. This follows naturally from the means of creation involved in cutting, being done by removal, not by addition. This feature is metaphorically conceptualized as temporality of events. The ‘*cut*+*a(n)*’ frame delimits a logically unbounded event. On the one hand, the verbs *look* or *smile* depict an activity with indefinite length. On the other hand, these activities, when nominalized and incorporated into the ‘*cut*+*a(n)*’ frame, result in temporally bounded activities, as in (6) above.

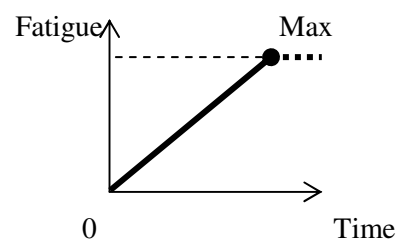
In summary, the function *cut* takes an unbounded basic state or activity as its argument, and converts it into a temporally bounded event. Figure 4 illustrates a scheme of *cut a smile*.

Figure 4. Scheme of *cut a smile*

## 5 The Semantics of V-*Kiru*

In order to find out properties of the function *kiru*, let us first see what kind of constituents precedes this verb. Although V-*kiru* denotes a delimited event as well as ‘*cut*+an event nominal’, we have seen in (3) above that the two verbs differ in selection restrictions on their complements. In examples of (10), *kiru* follows predicates denoting a state, activity, achievement, and accomplishment respectively. As far as these examples are concerned, only an accomplishment co-occurs with *kiru*. The change *Taroo* experiences in (10d) is gradual. Whereas *tsukareru* ‘to get tired’ does not specify the degree of fatigue, an adverbial *sukoshi* in (11), which refers to an intermediate point of the scale, cannot co-occur with *kiru*. It is thus clear that *kiru* denotes that an event gets to the end point of a scale (see Figures 5).

- (10) a. \*Tsukue-ni hana-ga ari-ki-tta.  
table-on flower-NOM be-cut-PAST  
‘There were flowers on the table thoroughly.’  
b. \*Taroo-ga subayaku tokei-o mi-ki-tta. (=3c)  
Taroo-NOM quickly clock-ACC look-at-cut-PAST  
‘Taroo looked at the clock quickly and thoroughly.’  
c. ??Fuusen-ga ware-ki-tta.  
balloon-NOM pop-cut-PAST  
‘A balloon popped through.’  
d. Taroo-ga tsukare-ki-tta.  
Taroo-NOM get-tired-cut-PAST  
‘Taroo got exhausted.’
- (11) Taroo-ga *sukoshi* {tsukare-ta/\*tsukare-ki-tta}.  
Taroo-NOM a-bit {get-tired-PAST/get-tired-cut-PAST}  
‘Taroo got a bit {tired/exhausted}.’

Figure 5. Scheme of *tsukare-kiru*

It might appear that the only function of *kiru* is to take, as its argument, a predicate that expresses an accomplishment, and to enforce an interpretation in which the event is carried out completely to the end. But this is not true. Example (12) shows that it is not predictable which predicate combines with *kiru*

only from event types of verbs. The difference in grammaticality of (12a) and (12b) depends on whether or not the theme in an event can undergo an incremental change. Whereas umbrellas can be used semipermanently, bus cards cannot be used any more once they run out of value. Namely, bus cards are incrementally affected. Although *basukaado-o tsukau* in (12a) is ambiguous between an activity and an accomplishment reading, *kiru* resolves the ambiguity to mean an accomplishment exclusively. On the other hand, *kasa-o tsukau* cannot precede *kiru* because using an umbrella lacks a culmination point. The same is said for (13). While (13a) is ambiguous between an activity and an accomplishment reading, (13b) expresses the second reading exclusively where the theme *biiru* is regarded as a certain amount.

- (12) a. Taroo-ga {kasa/basukaado}-o tsuka-tta. [Activity/Accomplishment]  
 Taroo-NOM {umbrella/bus card}-ACC use-PAST  
 ‘Taroo used {an umbrella/a bus card}.’  
 b. Taroo-ga ichi-nichi-de {\*kasa/basukaado}-o tsukai-ki-tta. [Accomplishment]  
 Taroo-NOM one-day-in {umbrella/bus card}-ACC use-cut-PAST  
 ‘Taroo used up {an umbrella/a bus card} in a day’

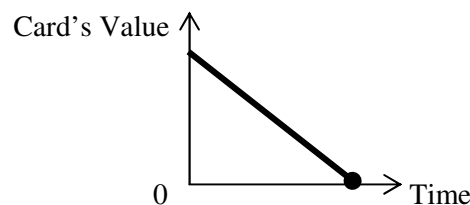


Figure 6. Scheme of *basukaado-o tsukai-kiru*

- (13) a. Taroo-ga biiru-o nom-da. [Activity/Accomplishment]  
 Taroo-NOM beer-ACC drink-PAST  
 ‘Taroo drank beer.’  
 b. Taroo-ga {\*ichi-nichi-juu/ichi-jikan-de} biiru-o nomi-ki-tta. [Accomplishment]  
 Taroo-NOM {one-day-for/one-hour-in} beer-ACC drink-cut-PAST  
 ‘Taroo drank the beer to the last drop {all day/in an hour}.’

In sum, *kiru* is a function that coerces its argument into the accomplishment type. Such a semantic operation is called *type coercion* where, when an argument conflicts with the type that a function calls for, the function shifts it to the appropriate type (Pustejovsky 1995). It is not to say that *kiru* takes any type as its argument. Arguments should have the potential to shift from its original event type to an accomplishment. In composition with *kiru*, a bus card in (12) and beer in (13) can be taken as *an incremental theme* (Dowty 1991). This property enables an original event, or an activity to obtain a state as the final event (e2) to compose an accomplishment (see Figure 7). (10a,b) above are ungrammatical since neither of the themes can be regarded as incrementally affected.

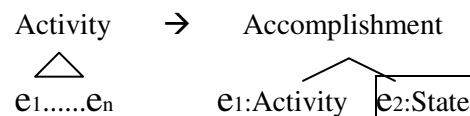


Figure 7. Type coercion from activity to accomplishment

In (14), unlike reading ten books, for example, reading numerous books seems to lack a culmination point, since the number of books is not limited. Nevertheless, *hon-o nansatsu-mo yomu* ‘to read numerous books’ goes along with *kiru*. This is made possible by *kiru*’s assigning the role of incremental theme not to the books as a whole, but to each and every book. The resulting sentence has an iterative reading. This is another example of type coercion by *kiru*.

- (14) Taroo-ga hon-o nansatsu-mo yomi-ki-tta.  
 Taroo-NOM book-ACC numerous read-cut-PAST  
 ‘Taroo read numerous books thoroughly.’

The concept of incremental theme also accounts for why some telic predicates as in (10c) do not co-occur with *kiru*. A balloon in (10c) cannot be thought of as an incremental theme since change to the balloon is not gradual, but instantaneous, in contrast to that of *Taroo* in (10d). By pluralizing the theme as in (15), however, it becomes an incremental theme and the sentence involving *kiru* expresses an accomplishment. In this case, the initial event (e1), whose type is underspecified, shifts to an activity, which has duration (see Figure 8).

- (15) Fuusen-ga {hyakko/\*hitotsu} ware-ki-tta.  
 balloon-NOM {one hundred/one} pop-cut-PAST  
 ‘{Hundred balloons/A balloon} popped through.’

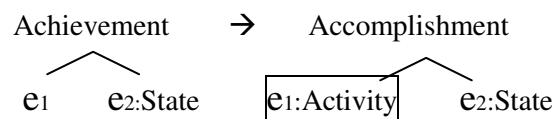


Figure 8. Type coercion from achievement to accomplishment

Table 3 lists the distribution of constituents preceding *kiru*. Although causative expressions were not treated in this paper due to space limitations, yet judging from this table, causality does not seem to involve the selection restriction of *kiru*.

	Basic	Causative
States	* <i>hana-ga ari</i> - ‘there be flowers’, * <i>ie-ni i</i> - ‘to be home’, ...	* <i>Taroo-o odokashi</i> - ‘to frighten Taroo’, ...
Activities	* <i>tokei-o mi</i> - ‘to look at the clock’, * <i>warai</i> - ‘to laugh’, * <i>Jiroo-ni ai</i> - ‘to meet Jiroo’, ...	* <i>Taroo-o warawashi</i> - ‘to make Taroo laugh’, ...
Achievements	* <i>fuusen-ga hitotsu ware</i> - ‘a balloon’s popping’, * <i>ihen-ni kizuki</i> - ‘notice the incident’, ...	* <i>fuusen-o hitotsu wari</i> - ‘to pop a balloon’, ...
Accomplishments	<i>Taroo-ga tsukare</i> - ‘Taroo’s getting tired’, <i>koori-ga toke</i> - ‘ice’s melting’, <i>kishi-made oyogi</i> - ‘to swim to shore’, ...	<i>koori-o tokashi</i> - ‘to melt the ice’, ...

Table 3. Distribution of constituents preceding *kiru*

As pointed out by Yoshimura (2003), semantic connection between the function verb use of *kiru* and its main verb use can be confirmed, in that V-*kiru* denotes an event with an inherent end point. However, this form also has its own function called *type coercion*, which is unpredictable from the semantics of the main verb.

## 6 Conclusion

This paper has dealt with *cut* and *kiru* as aspectual functions, and compared their respective event structures. Commonalities and differences between the two forms are as follows.

### Commonalities

- (a) The main verbs *cut* and *kiru* both have division sense as their lexical sense, and can derive creation sense by means of co-composition.

- (b) *Cut* and *kiru* can be used as a function verb when they combine with constituents which denote eventuality. They mainly provide aspectual information. It is their complements which have lexical content.
- (c) ‘*Cut*+an event nominal’ and *V-kiru* both express performance of an event which is denoted by complements of the verbs.
- (d) An event that these forms express is delimited.

#### Differences

- (a) *Cut* converts a non-bounded homogeneous event, that is, a basic state or activity, into a temporally bounded event. The inherent sense of *cut* is only division. Both creation of concrete artifacts and performance of events are secondary senses derived from co-composition. *Cut* is monosemous since its lexical entry is consistent in any usage.
- (b) *V-kiru* expresses completion of an accomplishment event. Either constituents which lexically denote the accomplishment type, or those which can be coerced into this type can co-occur with *kiru*. In the case of the latter, type shifting of the initial event (e1) or setting up of the final event (e2) enables an original event type to be the accomplishment type. *V-kiru* shares division sense with the main verb use, because this form denotes a telic event, which contains an inherent end point in it. However, it also has its own function called type coercion, which is unpredictable from the semantics of the main verb.

Two main contributions of this study are as follows.

- (a) The analysis of *cut* has shown that, in spite of its seeming polysemous behavior, *cut* is monosemous, and that its multiple senses result from a semantic operation, co-composition.
- (b) The analysis of *V-kiru* has shown that a generative device, type coercion can be applied not only to the word level but also to the morpheme level.

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## Data Sources

The British National Corpus  
<http://www.google.co.jp/>