Language, Information and Computation(PACLIC 11), 1996, 147-156

Beyond Telicity and Affected-Theme: Semantic Factors Contributing to the Resultative Interpretation of Predicates in Japanese

Chiharu Uda Doshisha University cuda@mail.doshisha.ac.jp

Abstract

This paper discusses semantic factors contributing to the resultative interpretation of predicates in the Japanese te-ir construction. The construction ambiguously takes on either progressive or resultative meanings. This ambiguity is due to the lexical meaning of the verb, and it is the purpose of this paper to single out and characterize the classes of verbs which take on the resultative meaning.¹ A number of recent studies have focused on the issues of telicity, transitivity, and particularly on unaccusativity and reflexivity, and it has been argued that the resultative interpretation is closely related to the subject's involvement in the resulting state. While accepting this argument, I will show that notions of unaccusativity and reflexivity alone cannot cover all the data. Similarly, I will argue that Kim's (1993) account of the analogous construction in Korean, which refers to the concept "possession," fails to accommodate a certain set of data without making unlikely stipulation. I will demonstrate that there are in fact two separate sets of verbs allowing the resultative meaning. The first set is definable in terms of the subject's involvement, while the second set makes no reference to the subject's involvement in the resulting state. I will characterize the second set as verbs of spatial configuration (Levin 1993) and propose the notion "affected locative" to optimally characterize the semantic feature licensing the resultative meaning in the second set.

1. Introduction

Te-ir resultative is a type of *te-ir* construction in Japanese, which is composed of a lexical verb followed by an auxiliary verb *ir* '(literally) for an animate entity to exist.' *Te-ir* sentences can take on such meanings as "progressive," "resultative," "habitual," and "experience," among others. Of particular recent interest is the distinction between the progressive reading and the resultative reading, as illustrated by the following examples:

(1)	a.	куок	o -ga	ima	. K1	-0	taosite-iru.	
			NO	M nov	w tree	e ACC	fell-IR	
	'Kyoko is felling the tree.'							
	b.	Ki	-ga	ima	taore	te-iru.		
		tree	NOM	now	lie-IR			
	'A tree has been felled (is lying down).'							
	c.	Ki	-ga	ima	taos-	arete-i	ru.	
		tree	NOM	now	fell-P	AS-IR		

'A tree has been felled/is being felled.'

d. Kyoko -wa ima kami -o somete-iru. TOP now hair ACC dye-IR

'Kyoko has dyed her hair/is dying her hair.'

Thus the sentence (1a) takes on a progressive meaning, while (1b) takes on a resultative meaning.² (1c) and (1d) are ambiguous. This paper focuses on the long-standing issue of predicting when the *te-ir* sentence can convey the resultative reading.

One complication with the resultative interpretation is the relevance of the verb meaning. Some verbs allow resultative interpretation only in the *te-ir* form, while others allow resultative interpretation in its "base" form (i.e, without *te-ir*):

(2) a. Kyoko -wa ima Taroo -no koto -o oboete-iru. TOP now GEN thing ACC remember-IR

'Kyoko remembers (has remembered) Taroo.'

b.*Kyoko -wa go-nenkan Taroo -no koto -o oboeta.

TOP for 5 years GEN thing ACC remember 'Kyoko remembered Taroo for five years.'

(3) a. Kyoko -wa ima hon -o kasite-iru. TOP now book ACC lend-IR

'Kyoko has lent a book.'

b. Kyoko -wa san-syuukan hon -o kasita. TOP for 3 weeks book ACC lend

'Kyoko lent a book for three weeks.'

The relationship between the resultative interpretation in base form and the one in the *te-ir* form seems to involve factors too complicated to discuss here. The discussion in this paper, therefore, focuses only on the resultative interpretation in the *te-ir* construction, ignoring the same interpretation in base forms. The assumption here is that the *te-ir* construction facilitates the resultative interpretation of the sentences as long as they have the potential of the interpretation.

This paper is organized in the following way. The next section (Section 2) analyzes the basic data in order to abstract crucial generalizations, drawing on major studies in the literature. A particular reference will be made to Takezawa's (1991) syntactic analysis and Kim's (1993) semantic analysis. Section 3 presents data which both Takezawa (1991) and Kim (1993) fail to accommodate. A new approach will be proposed in Section 4. Section 5 concludes the discussion.

2. Generalization and Existing Analyses

The problems of *te-ir* construction have traditionally been examined primarily in terms of the aspectual event structure of the verbs involved; e.g. in terms of telicity, durativity, change of state, reflexivity, etc. (Jacobsen 1982, Masuoka 1987). The ambiguity obtains only with telic durative verbs. Even with telic durative verbs, sentences may have a resultative interpretation only (i) when the verb (intransitive) is unaccusative, (ii) when the verb (transitive) is in passive voice, or (iii) when the verb (transitive) denotes a reflexive process, i.e., the resulting change is found in the subject. The examples (1b)-(1d) illustrate the conditions (i)-(iii), respectively. The unification of the conditions (i) and (ii) is straightforward; both specify that the subject is the theme argument. Condition (iii) is vague because the idea is not associated with a clearly defined syntactic/s-emantic class. So let me focus on condition (iii) in the remainder of this section to see what it really means and how it is related to the conditions (i) and (ii).

Takezawa (1991) restricts condition (iii) in a syntactic way. He suggests that only when the subject "inalienably" possesses the object is the resultative interpretation available, thus the contrast between (1d) and (4) below, the latter being only progressive:

(4) Kyoko -wa ima kimono -o somete-iru.

TOP now dress ACC dye-IR

'Kyoko is dying a/her dress.'

The contrast in the data below also supports Takezawa's observation just given:

(5) a. Kyoko -wa ima ude -o otte-iru.

TOP now arm ACC break-IR

'Kyoko has broken her arm.'

b. Kyoko -wa ima (niwa -no) ki -no eda -o otte-iru. TOP now garden GEN tree GEN branch ACC break-IR 'Kyoko is breaking a branch of the tree in her garden.'

Arguing for a syntactic analysis accommodating all the three conditions mentioned above, Takezawa (1991) draws on the binding condition A with a further restriction of what he calls "theta-role sharing." Conditions (i) and (ii) mean that the subject NP binds its trace in the theme position, inheriting the role there. Takezawa (1991) renders condition (iii) in similar terms: the subject binds an anaphor, with which it "shares" a theta role, motivated by the inalienability of possession. Thus in (5a) the subject *Kyoko* binds a covert anaphor in the determiner position of the direct object *ude* 'arm,' and *Kyoko* somehow shares the theme role with the direct object, since *Kyoko* is the inalienable possessor of the arm and is the one who is primarily affected by the event of 'breaking the arm' after all. Notice that (2), which apparently lacks the inalienably possessed phrase, could also take one (cf. *kokoro -no naka -ni* 'in one's own mind.')

Takezawa's (1991) account has a strong appeal in its clarity and rigidity. Nevertheless, it is inconceivable that any type of inalienable possession relationship exists between the subject and the object of example (3) given above. A possessive relation is there, but it is certainly an alienable one.

The concept of "possession" finds a more extensive application in Kim (1993), who claims that the resultative reading obtains only when the subject possesses (mentally or physically) the object as a result of the process and the resulting change must occur in the subject.³ In addition, Kim (1993) claims that the resultative sentence in question refers to a property of the subject of an event resulting from the culmination of the event, rather than to a state of the object.

Kim's (1993) usage of the term "possession" (or "contact") is fairly comprehensive. It does not need to be inalienable, and the syntactic compatibility of the possessive phrase is not a problem. Notice that Kim's (1993) analysis successfully predicts the contrast between (1d) and (4) and between (5a) and (5b); having broken a branch, for instance, is unlikely to be taken as describing a state of oneself, even when it belongs to one, while having broken one's own arm is most likely to be so.

In this connection, I would like to point out that Kim's (1993) analysis can explain even the data in (3), which Takezawa (1991) failed to cover. That is, *kari* borrowing' and *kas* 'lending' as well as *kakus* 'keeping to oneself' and *azuke* 'leaving something to someone' are all verbs describing a specific state of possession on the part of the subject. It, therefore, naturally (and rightly) follows from Kim's analysis that all these verbs allow resultative interpretation.

Thus the concept of "possession" and the idea of the subject in focus appear to constitute a very promising tool in analyzing the resultative interpretation of the *te-ir* construction. Interpreted in this way, the essence of condition (iii) covers conditions (i) and (ii) as well. That is, the resultative interpretation obtains when the sentence describes the state of the subject, which is either identical to or conceptually unseparable from the theme argument (or the argument which shows the culmination of the event). This could be expressed as the subject's involvement in the resulting state. This paper, therefore, assumes that the three conditions are reflections of a single principle; roughly, the resultative interpretation obtains when the resulting change following an event is found in the subject.

3. Problematic Data

The remarkable explanatory power demonstrated in the previous section notwithstanding, Kim's (1993) analysis fails with the following data:⁴

(6) a. Kyoko -ga ima mado -0 akete-iru. NOM now window ACC open-IR 'Kyoko has opened/is opening the window.' b. Kyoko -ga ima kuruma -o tomete-iru. NOM now car ACC stop-IR

'Kyoko has parked/is parking the car.'

These sentences allow resultative reading, and accordingly, Kim (1993) claims that these are descriptions of the subject Kyoko. So the resultative reading of, say, (6a) obtains only when the window belongs to Kyoko and, crucially, when the state of the subject Kyoko (rather than that of the window) is focused on.

However, Kim's (1993) analysis of (6a) does not hold through. First of all, his definition of possession/contact here no longer distinguishes between the resultative sentence in (6) and the non-resultative sentences (4) and (5b) given above. Both involve alienable possession, and the state of window/car seems no more likely to describe the state of the subject than that of dress/branch. Besides, as Masuoka (1987) observes, sentences of the type in (6) in fact prefer "defocusing" the subject. According to Masuoka (1987), the sentences sound even more natural as resultative if subjects are left unspecified as follows:

(7) a. Dareka -ga ima mado -o akete-iru.
 someone NOM now window ACC open-IR
 'Someone has opened/is opening the window.'

b. Dareka -ga ima kuruma -o tomete-iru. someone NOM now car ACC stop-IR 'Someone has parked/is parking a car.'

With unspecified subjects, these sentences do not describe the state of some unknown person; it is clearly the state of the window or car that is important.

The sentences of type (6)-(7), therefore, do not fit in either Takezawa's binding analysis or Kim's possession analysis. Such problematic examples can be enumerated with ease: *hon -o naraberu* 'put books in line,' *heya -o kazaru* 'decorate one's room,' etc. Inclusion of such examples has hindered existing analyses from correctly abstracting the conditions on the resultative, while exclusion of them as exceptional simply distorts the reality. I propose, therefore, that the resultative interpretation is available in two separate sets under two distinct conditions. The first set is definable in familiar terms of the subject's involvement. The second set involves a different type of verbs, describing a totally different situation. In what follows I try to identify the verbs of the second set with a view to finding a crucial factor underlying the resultative interpretation.

4. Proposal

4.1. Two classes

There have been various studies on the classification of verbs in Japanese (Kindaichi 1950, Yoshikawa 1973, Jacobsen 1982). The verbs which induce resultative interpretation in the *te-ir* construction are singled out by Yoshikawa (1973) as "result verbs." Merely classifying verbs as such does not explain the membership of result verbs. From the concept "result," one may expect telic verbs producing a substantial change on the theme as a result. This certainly constitutes a necessary condition of the result verb (cf. Kim 1993), and yet it is not sufficient. Verbs of creation which produce a tangible result, which are telic, do not necessarily induce resultative interpretation, as the examples in (8) show:

(8) a. Kyoko -wa ima kono keeki -o yaite-iru. TOP now this cake ACC bake-IR 'Kyoko is baking this cake.'

b. Kyoko -wa ima sono syoosetu -o kaite-iru. TOP now that novel ACC write-IR

'Kyoko is writing that novel.'

Interestingly, however, the same verb kak 'write' can take on the resultative interpretation in a different context. Contrast (8b) with (9) below:⁵

(9) Kyoko -wa ima kaban -ni gakkoo -no namae -o kaiteiru.

TOP now bag LOC school GEN name ACC write-IR 'Kyoko has written/ is writing her school name on her bag.'

What makes this contrast is apparently the ni-phrase. Notice that the sentences (6b) and (7b) are also compatible with a ni-marked locative phrase such as koko -ni 'here' and miti -ni 'on the street':

(10) Kyoko -ga koko/miti -ni kuruma -o tomete-iru. NOM here/road LOC car ACC stop-IR 'Kyoko has parked/is parking the car here/on the street.'

The compatibility with the ni-marked locative phrase opens a new perspective on the issue of resultatives. In analyzing the data in (6)-(7), Masuoka (1987) identifies a class of verbs which is low in transitivity, with the theme argument foregrounded and the agent backgrounded. The verbs of this type, he says, include *hootis* 'leave' and *haridas* 'post' besides *tome* 'stop.' Intriguingly, the verbs listed by Masuoka (1987) all can take a *ni*-phrase:

- (11) a. Dareka -ga miti -ni kuruma -o hootisite-iru. someone NOM road LOC car ACC leave-IR 'Someone has left a car in the street.'
 - b. Dareka -ga kabe -ni kyuuzin koukoku -o haridasite-iru. someone NOM wall LOC recruitment ad ACC post-IR 'Someone has put/is putting an ad of recruitment on the wall.'

Thus it is unquestionable that the compatibility of ni-locative phrase has a crucial relevance to resultative interpretation. I will refer to this class of verbs compatible with ni-locative phrase as *put*-class verbs.

However, compatibility with the *ni*-phrase does not solve all the problematic cases. The verb phrase *mado -o aketeiru* 'open a window' in (6a) and (7a) is not compatible with a *ni*-phrase. Nor are such verbs as *hirak* 'open,' *sime* 'close,' and *tozi* 'close.' I will refer to this class of verbs as *open*-class verbs. To sum, there are apparently two classes of verbs, *put*-class and *open*-class, of which the former is compatible with ni-phrase, while the latter is not. I will examine the *put*-class verbs first, and then move on to the *open*-class.

4.2. Put-class

The discussion in the previous section has made it clear that the *ni*-marked locative phrase is important. It is now necessary to find which aspects of the *ni*-marked locative phrase induce resultative interpretation.

In view of the recent development in the research on telicity, one might turn to the delimiting function of the ni-phrase in the sense of Tenny (1994). A nilocative phrase is certainly a delimiter, which is crucial in turning an atelic process into a telic one. However, delimiting function is not a sufficient condition, even if it is a necessary one, for a ni-marked phrase to allow resultative interpretation. A goal (destination) phrase marked with ni, which is clearly a delimiter (Klipple 1991), fails to induce resultative interpretation, as shown in (12):

(12) Kyoko -wa ima Tokyo -ni tegami -o okutte-iru.
 TOP now LOC letter ACC send-IR
 'Kyoko is sending a letter to Tokyo.'

To characterize the ni-phrase associated with resultative interpretation, I propose the concept "affected locative," together with that of "spatial configuration." Notice that the ni-locative phrases in (9)-(11) (i.e. those with resultative interpretation) are different from the one in (12) in that they are directly involved in the event and are necessarily affected by the event. Take for example the contrast between (8b) and (9), both involving the verb of writing. In (8b), the result of the event of writing is found solely in the outcoming product, a novel. In (9), on the other hand, the result of the event is found on the surface of the bag, referent of the *ni*-locative phrase. To be more precise, the result is assessed when the theme (*namae* 'name') is in a certain spatial relationship with the locative phrase. The locative phrase is necessarily affected by the event in this sense. Take another example (10). What is meant by this sentence is that a car is located somewhere. With the verb tomeru 'stop,' the point of this sentence is not that the car is stopped, the machine being brought to a halt. The point is that the car is in a certain spatial configuration with respect to the locative referent of the *ni*-phrase.

Notice in this connection that the ni-locative phrase is not really necessary in singling out the verbs of this class. Some verbs in this class allow so-called locative alternation, whereby the locative ni-phrase turns into the direct object. As expected, the alternated predicate induces resultative interpretation without using a ni-phrase as shown in (13). The example of locative alternation further supports the relevance of the concept of affected locative:⁶

(13) a. Kyoko -wa ima heya -ni hana -o kazatte-iru. TOP now room LOC flower ACC decorate-IR 'Kyoko has put/is putting flowers in the room to decorate it.'
b. Kyoko -wa ima heya -o (hana -de) kazatte-iru. TOP now room ACC flower INSTR decorate-IR 'Kyoko has decorated/is decorating the room (with flowers).'

In sum, I claim that the first class of verbs, the *put*-class, in resultative interpretation denotes a process which does not necessarily change the internal property of a theme but locates it in a certain spatial relation with the background which is typically expressed by a *ni*-locative phrase. The theme is moved (or is brought about), but such change is conceptualized only in terms of the change occurring in the locative phrase. Significantly, the locative phrase in question cannot be characterized as a delimiting goal phrase, but rather as an 'affected' locative phrase in the sense that the event necessarily affects the location.

4.3. Open-class

Verbs of the *open*-class are incompatible with a *ni*-locative phrase. One important question to ask is whether they form a class completely separate from the *put*-class or they share certain common traits, which could be considered a source of the resultative interpretation.

Consider again the examples in (6a) and (7a), denoting an event of opening a window. A window is a typical polysemous word. Pustejovsky (1995) points out that it can refer either to a physical objector to an aperture, or to both:

(14) a. Mary broke the window.

(physical object)

b. John crawled through the window. (aperture) sense the window in (6a) and (7a) apparently refers to a physical sense.

In this sense, the window in (6a) and (7a) apparently refers to a physical object; one cannot open a window (by pushing it) if it is already an aperture. Nevertheless, (6a) and (7a) are different from other instances in which a physical object is

opened. Observe that the sentence in (15), with a physical object to be opened, allows only a progressive interpretation:

(15) Kyoko -wa ima tegami -o akete-iru. TOP now letter ACC open-IR 'Kyoko is opening a letter.'

Opening a window, for instance, in contrast to opening a letter, means more than the state of the window *per se*. A window is inherently a relational entity; it can never exist by itself. It is always a part of the wall of some three dimensional object. By saying that the window is open, one is necessarily commenting on the state of the entire wall, room, and so on. Thus (7a) could well be a description of a room rather than that of a particular window. Notice that, in the absence of a *ni*-locative phrase, this is strongly reminiscent of the discussion of *put*-class verbs; in both classes, the change of the theme argument is assessed in relation to another entity on which it is located, and what matters is the spatial configuration⁷ of the theme rather than its internal constitution.

I have argued that the second class of verbs associated with the resultative interpretation shares a common trait with the first class discussed in the previous section, despite the apparent syntactic differences between the two. I believe this in turn supports the analysis developed here.

5. Conclusion and Speculation

This paper has demonstrated that the resultative interpretation of Japanese *te-ir* construction obtains under two disjunctive semantic conditions: one which concerns the involvement of the subject in the result of an event and the other which refers to the involvement of a locative phrase. The first condition dictates that the subject argument represents or is significantly related to the endpoint of the telic event denoted by the predicate. The second condition says that the sentence primarily describes the spatial configuration of the theme argument rather than its internal constitution. The result of the event is assessed in terms of the location of the theme relative to a locative entity, which is typically, but not necessarily, expressed by a *ni*-phrase. The foregoing studies in the literature have needed a forced explanation because they have failed to recognize the second condition and have tried to force a unitary account on two separate phenomena.

Before concluding this paper, let me speculate briefly on the question of why the second condition is relevant at all to the resultative interpretation. What kind of relevance does a *ni*-locative have, for instance? As shown in the previous section, the delimiting function is not relevant here.

To find an answer, I would like to draw on the cognitive approach to language and, in particular, to the concept of the figure/ground relationship (Langacker 1991, Pustejovsky 1995). That is, the progressive interpretation is expected to obtain when the agent is profiled as the figure and the process is foregrounded. The resultative interpretation, on the other hand, obtains when the event is construed in terms of its resultant state rather than the process that precedes the result. Roughly put, therefore, the progressive interpretation is associated with the agentive figure, while the resultative interpretation is associated with the "result" figure. Since the figure is the pivot of predication, it most often coincides with the subject argument. The first condition mentioned above allows the resultative interpretation because it identifies a figure which represents a result. The second condition, I claim, allows the resultative interpretation because it facilitates a resultative figure/ground cognition. Notice that the sentences accommodated by the second condition has an agentive subject, which ought to be profiled as a figure, thus inducing a progressive interpretation. However, the spatial configuration expressed by the predicate, consisting of a theme within a location, readily fits in the typical figure/ground schema; the locative phrase provides the ground within which the theme argument is profiled as the figure. Since this figure/ground relation can prevail over the other, agentive-type of profiling, allowing the resultative interpretation.

This account based on the figure/ground concept also explains aforementioned Masuoka's (1987) observation that this class of verbs prefers an unspecified subject for resultative interpretation; with an unspecified agentive subject, it would be even easier to identify the figure/ground relationship between the theme and the locative, to the exclusion of the agent. The concept of figure/ground, therefore, seems to provide a reasonable explanation of the essential relevance of the spatial configuration to resultative interpretation.

NOTES

1. Throughout this paper the term "verb meaning" is used in a poorly defined way. What is meant here is not the meaning of a verb itself but rather an entire event structure denoted by the verb with participating arguments. The same idea is expressed by such phrases as "the meaning of a sentence" and "a situation" as well.

2. The definition of the "Resultative" interpretation is often confused. This paper restricts the notion to those cases where the resulting state of a process, which took place at some previous point in time, remains at the time of evaluation. As a test, I insert *ima* 'now' or a durative temporal phrase in sentences under examination. The 'now'-point and the durative phrase must modify not the ongoing process but the resultant state.

3. Kim (1993) analyzes the "resultative progressive" *ko-iss* construction in Korean, which appears to share crucial properties with the *te-ir* construction in Japanese in relevant respects. Notice that it is distinct from the Japanese counterpart in that it cannot be formed with an intransitive verb. The consequence of this difference is not clear at this point.

4. Note also that the relationship between Kyoko and the window/car is clearly not that of inalienable possession, contra, again, Takezawa (1991).

5. One might say that the resultative interpretation for (9) is due to the possessive relation between the subject and the locative phrase (Kyoko and her bag.) This is not really so, since the verb kak 'write' allows a resultative interpretation without such possessive relation as in: Dareka -ga tukue -ni

rakugaki -o kaiteiru 'Someone has written a scribble on the desk.'

6. The concept "affected locative" is used in accounting for the possibility of locative alternation in Japanese by Fukui et al. (1985). Note that the concept is used here in a different sense. According to their definition, affected locative includes the locative occurring with the verb *nur* 'smear' and *kazaru* 'decorate,' while excluding the one with the verb *oku* 'put' and *mak* 'spray.' The affected locative as used here is a more general notion and includes all these cases. Alternatively, this concept could be referred to as "involved locative" in the sense that the location is intrinsically involved in the event denoted.

7. The concept "spatial configuration" is due to Levin (1993), though she uses it in a slightly different sense.

REFERENCES

- Fukui, Naoki, Shigeru Miyagawa, and Carol Tenny. 1985. Verb Classes in English and Japanese: A Case Study in the Interaction of Syntax, Morphology, and Semantics. MIT Lexicon Project Working Papers #3.
- Jacobsen, Wesley. 1982. Transitivity in the Japanese Verbal System. Reproduced by the Indiana University Linguistic Club.
- Kindaichi, Haruhiko. 1950. Kokugo Doosi no Itibunrui (A Classification of Japanese Verbs) (Reprinted in Nihongo Doosi no Asupekuto, edited by Haruhiko Kindaichi ed. 1976. Tokyo: Mugi Shoboo, 5-26.)
- Kim, Yookyung. 1993. The Resultative Progressive in Korean. CLS 29: 251-265.
- Klipple, Elizabeth M. 1991. The Aspectual Nature of Temporal Relations: Locative and Temporal Phrases in English and Chinese. Ph.D. dissertation, MIT.
- Langacker, Ronald W. 1991. Foundations of Cognitive Grammar: Descriptive Application, Vol. 2. Stanford, CA: Stanford UP.
- Levin, Beth. 1993. English Verb Classes and Alternations: A Preliminary Investigation. Chicago: Chicago UP
- Masuoka, Takashi. 1987. Meidai no Bunpoo (Grammar of Proposition). Tokyo: Kuroshio.
- Pustejovsky, James. 1995. The Generative Lexicon. Cambridge MA: The MIT Press.
- Takezawa, Koichi. 1991. Zyudoobun, Nookakubun, Bunrihukanoo-shuyuu Koobun to 'Te-iru' no Kaisyaku (Passives, Ergatives, and the Inalienable Possession Construction and the Interpretation of 'te-iru'). In Yoshio Nitta, ed., *Nihongo no Voisu to Tadoosei* (Voice and Transitivity in Japanese). Tokyo: Kuroshio.
- Tenny, Carol. 1994. Aspectual Roles and the Syntax-Semantics Interface. Dordrecht: Kluwer.
- Yoshikawa, Taketoki. 1973. Gendai Nihongo Doosi no Asupekuto no Kenkyuu (An Aspectual Study of Verbs in Modern Japanese). (Reprinted in Nihongo Doosi no Asupekuto, edited by Haruhiko Kindaichi. 1976. Tokyo: Mugi Shoboo, 155-328.)