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| Title        | A Synchronic Study of Spontaneous Voice in Japanese                                 |
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| Citation     | 大阪外国語大学学報. 1968, 18, p. 109-130                                                     |
| Version Type | VoR                                                                                 |
| URL          | <a href="https://hdl.handle.net/11094/80301">https://hdl.handle.net/11094/80301</a> |
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# A Synchronic Study of Spontaneous Voice in Japanese

Hideo Teramura

## 1. Introduction

Japanese has a fairly large number of verbal forms which constitute various types of transitive-intransitive pairs. In addition, there are forms which have transitive functions but no corresponding intransitive forms ('transitive proper'), e.g., *taberu* 'eat', *korosu* 'kill', and forms which have intransitive functions but no corresponding transitive forms, ('intransitive proper') e.g., *aruku* 'walk', *saku* 'bloom'. There are still other forms which are used both as transitive and as intransitive verbs, e.g., *hiraku* 'open', *sosogu* 'pour'. Very few verbs belong to this last group.

Looking more closely at the various kinds of transitive-intransitive pairs, we can easily recognize several distinct types of morphological contrast. Perhaps the most exhaustive study of the transitive-intransitive contrasts from a synchronic point of view is that by SAKUMA Kanae.<sup>1</sup> According to SAKUMA, the first systematic presentation of the subject appeared in MOTOORI Haruniwa's *Kotoba no Kayoi* in 1828.

The particular semantic property common to some intransitive verbs composing some types of contrast has led several grammarians to borrow the grammatical category 'Middle voice' from classical Greek grammar or what was called 'Atmane-Pada' ('word directed to oneself') as opposed to 'Parasmai-Pada' ('word directed to another') in Sanscrit grammar.<sup>2</sup>

The introduction of the grammatical category Voice, such as Active and Passive, into Japanese grammar goes back to the end of the previous century.<sup>3</sup> Even in MOTOORI's presentation mentioned above we can recognize basically the same consideration, and it is now customary for contemporary Japanese grammars to recognize such grammatical categories as Active, Passive, Causative, Potential, and sometimes Middle (or Spontaneous).<sup>4</sup>

It seems to me, however, that the linguistic basis upon which to admit these as grammatical categories has not been clearly provided. Limiting ourselves to what is called the Middle (or Spontaneous) Voice, we find that the verbs usually included in this category are neither identical with the Middle Voice expressions in Greek grammar, nor are they

identical with the so-called Middle verbs or the 'Activo-Passive' use of some verbs.<sup>4</sup> Although a thorough comparative study is outside the scope of this paper, it should be made clear that the notion of the Middle Voice in Greek grammar developed from the discussion about the functions of the morpheme *mai*.<sup>5</sup> In English grammars the discussion centers around the passive-like use of some transitive verbs.

In Japanese, we can set up Spontaneous Voice as a grammatical category on a clear morphological-syntactic basis, that is, certain verbal forms which are supposed to denote the Spontaneous Voice are found to have some definable morphological shapes that are correlated with certain syntactic features.

This paper attempts to investigate the possibility of setting up the grammatical category Spontaneous Voice by examining various types of so-called transitive-intransitive pairs and relating particular semantic properties to types of morphological contrast. Before introducing the main contention of the paper, however, it is necessary to present a rough characterization of Voice mainly from a syntactic point of view.

## 2. Voice in Japanese Grammar

2.1. Before discussing Spontaneous Voice in particular, we shall make a brief, general survey of the grammatical category Voice. A concise definition of Voice is given in Mario Pei's *Dictionary of Linguistics* as "the verbal category expressing whether the subject of the verb is the agent of the action or exists in the condition or state denoted by the verb (active voice), or is the recipient or target of the action (passive voice)."<sup>7</sup> He then adds, "Many languages have also a middle voice."

It is quite natural, then, that we should be able to incorporate this traditional notion of Voice into the transformational-generative grammar developed by Zelig Harris<sup>8</sup> and Noam Chomsky.<sup>9</sup> Although we will not enter into theoretical problems here, the theoretical bases provided by Chomsky and others are assumed throughout the following discussion. We would have the base rules generate the base Phrase markers underlying the sentences involving the unmarked Voice (Active Voice, here), which are converted by transformational rules into various derived Phrase markers underlying the sentences involving Passive, Causative, Spontaneous expressions and so on. In order for a transformation rule to apply, a sentence must have a specific Phrase marker which meets certain conditions, and since, apparently, the possibility of a transformation, e. g., the Passive transformation, also lies in a particular property of the verb in the base, this information has to be provided by a lexicon.

In the following description, however, the base rules to generate base Phrase markers which undergo Voice transformations, as well as the content of each lexical entry, are omitted for simplicity of presentation. For the purpose of the present paper, it suffices to describe how the Passive expressions, Causative expression, Potential expression, etc., are derived from basic strings with particular structural descriptions.

## 2.2. Active Voice

The Active Voice is unmarked. We consider, however, that the Active Voice as a grammatical category should only be recognized with the transitive verbs which have corresponding intransitive forms.

## 2.3. Passive Voice

We recognize two different kinds of Passive in Japanese: the Direct Passive and the Indirect Passive.<sup>10</sup>

### (1) Direct Passive

$NP_1 \text{ ga } NP_2 \text{ o} \dots VP\text{-M } \neg[\text{PASSIVE}]$

$\rightarrow NP_2 \text{ ga } NP_1 \text{ ni } \dots VP\text{-}\left\{\begin{smallmatrix} are \\ rare \end{smallmatrix}\right\}\text{-M}$

where: *ga*...a postposition indicating that the Noun phrase preceding it is the subject of the following Verb phrase.

*o*...a postposition indicating that the Noun phrase preceding it is the object of the following transitive verb phrase. Some transitive verbs require NP *ni* in place of NP *o*.

*ni* in the Passive sentence indicates that the noun phrase preceding it is the agent of the action, similar to 'by' in English passive expression. *Ni* is sometimes replaced by such postpositions as *kara* or *ni yotte*, depending upon the particular character of the verb.

-M...an inflectional element expressing tense, mood, or aspect.

### (2) Indirect Passive

$\left\{ \begin{array}{l} NP_1 \text{ ga } \#S\# \neg[\text{PASSIVE}]\text{-M} \\ NP_2 \text{ ga } (NP_3 \text{ o}) \dots VP \end{array} \right.$

$\rightarrow NP_2 \text{ ga } NP_1 \text{ ni } (NP_3 \text{ o}) \dots VP\text{-}\left\{\begin{smallmatrix} are \\ rare \end{smallmatrix}\right\}\text{-M}$

This is what has been called a 'generalized transformation' which embeds the second sentence ('constituent sentence') into the first ('matrix sentence'). The symbol  $\#S\#$  stands for the string to be filled by a trans-

form of another sentence. This idea of  $\#S\#$  has been introduced by Chomsky and others to make possible a significant simplification of the theory of transformational grammar, allowing the rules of the base to apply cyclically.<sup>11</sup> [PASSIVE] is an abstract element which combines with  $\#S\#$  and forms the (Indirect) Passive expression. The Passive sentence resulting from the above transformation always implies some kind of embarrassment or nuisance on the part of NP<sub>1</sub>.

#### 2.4. Causative Voice

$\left\{ \begin{array}{l} \text{NP}_1 \text{ ga } \#S\# \text{ } -[\text{CAUSATIVE}] \text{ } -M \\ \text{NP}_2 \text{ ga } (\text{NP}_3 \text{ o}) \dots \text{VP} \end{array} \right.$

$\rightarrow \text{NP}_1 \text{ ga } \text{NP}_2 \left\{ \begin{array}{l} o \\ ni \end{array} \right\} (\text{NP}_3 \text{ o}) \dots \text{VP} - \left\{ \begin{array}{l} ase \\ sase \end{array} \right\} -M$

e.g.  $\left\{ \begin{array}{l} \text{Watasi ga } \#S\# \text{ } -[\text{CAUSATIVE}] \text{ } -ta \\ \text{Ootoo ga Kyotoo e ik-u} \end{array} \right.$  'I made (let)...' 'Younger brother goes to Kyoto'

$\rightarrow \text{Watasi ga ootoo o Kyotoo e ik-ase-ta}$

'I made (let) younger brother go to Kyoto.'

where: *watasi* 'I', *otooto* 'younger brother' *ik-u* 'go'

$\left\{ \begin{array}{l} \text{Sensei ga } \#S\# \text{ } -[\text{CAUSATIVE}] \text{ } \text{'The teacher...'} \\ \text{Gakusei ga repooto o kaku} \text{ 'Students write reports.'} \end{array} \right.$

$\rightarrow \text{Sensei ga gakusei ni repooto o kakaseru.}$

'The teacher lets (makes) students write reports.'

#### 2.5. Potential Voice

In Japanese, what is called the Potential form of the verb, that is, the attachment of the morpheme  $\{-e-\infty-rare-\}$  to the stem, is not merely a morphemic change, as, for example, in English ('read'  $\rightarrow$  'can read'). It causes a change in the whole sentence structure. For example, *Watasi ga huransu-go o yomu* 'I read French' will change to *Watasi ni/niwa / wa huransu-go ga yomeru*. The latter sentence is usually translated into English as 'I can read French.' But if we translate the two sentences in this way, we are in danger of overlooking the fact that the phrase *huransu-go o* (the object of the verb *yomu* 'read') has changed to *huransu-go ga*, a noun-phrase followed by the subject indicator *ga*. Therefore, the structural meaning involved in the second sentence would be more exactly expressed by an English sentence such as '(As) for me, French is readable.' Omitting further details, the above observation suggests that this type of structural change should be generally formulated roughly as follows:

$\left\{ \begin{array}{l} \text{NP}_1 \text{ } ni- \text{ } \#S\# \text{ } ga- \text{ } [\text{POTENTIAL}] \text{ } -M \\ \text{NP}_1 \text{ } ga \text{ } (\text{NP}_2 \text{ } o) \dots \text{VP} \end{array} \right.$

(Matrix sentence)  
 (Constituent sentence)

$$\rightarrow \text{NP}_1 \text{ niwa/ wa } (\text{NP}_2 \text{ ga}) \dots \text{VP} - \left\{ \begin{smallmatrix} e \\ \text{rare} \end{smallmatrix} \right\} - \text{M}$$

If the VP above is the representative verb *suru* 'do',

then VP-{\textit{Potential}}  $\rightarrow$  *deki*-M

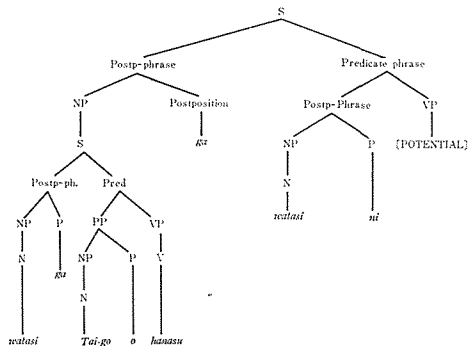
e. g. *Watasi m- #S# ga- [POTENTIAL]* 'For me, ... is possible'  
*Watasi ga Tai-go o osieru* 'I teach Thai.'

→ *Watasi ni/niwa/wa Tai-go ga osie-rare-ru*

'I can teach Thai' ('For me Thai is teachable.')

[POTENTIAL] is the same kind of abstract element as discussed in 2.4. It combines with the string  $\#S\#$  which is a transform of another sentence, forming the Potential expression.

The co-occurrence of NP<sub>1</sub> *ni* in the Matrix sentence with [POTENTIAL] will be formally described as the node Predicate-phrase dominating this postpositional-phrase and the abstract element [POTENTIAL]. This would be illustrated by a tree diagram roughly as follows:



## 2.6. Spontaneous Voice

NP<sub>1</sub> *ga-* NP<sub>2</sub> *o-* VP-M -[SPONTANEOUS]

→ NP<sub>2</sub> ga- VP- {Spontaneous} -M

e. g. *Δ ga* (Unspecified subject) *okane o mookeru* 'Δ makes money.'

→ *Okane ga mookaru* ('Money is gained.')..... (1)

*Δ ga yama o miru* ('Δ sees the mountain.')

→ *Yama ga mieru*. ('The mountain is seen, or visible.').....(2)

*Δ ga kono hon o uru* ('Δ sells this book.')

→ *Kono hon ga ureru* ('This book sells, or is sold.') .....(3)

As the above examples show, the Spontaneous transformation is motivated by the shifting

of 'focus' from NP<sub>1</sub> *ga* to NP<sub>2</sub> *o* (in the active sentence) just as in the case of the Direct Passive transformation we have seen in 2.3. However, it is different from the Direct Passive in that the actor of the action expressed by the stem of the verb is *always* unspecified. In other words, in the Direct Passive expression, although the speaker's focus of attention does shift to the object (of the Active sentence), the existence of the actor (the 'agent') always underlies the speaker's consciousness, whether or not it is actually mentioned in the Passive expression, while in the Spontaneous expression, the existence of the agent totally disappears. Thus the Predicate of the Passive expression can always be supplemented by the phrase NP *ni/niyotte/kara* ('by or from NP'), whereas that of the Spontaneous expression can not be so supplemented. The Spontaneous form of the verb expresses an action as if it occurred spontaneously. It might be possible to formulate this transformation as a kind of generalized transformation of the type used with the Indirect Passive, the only difference lying in the special restriction on the structure of the string to be embedded, i. e., the subject and the object of the sentence to be embedded should be identical with each other and also with the subject of the Matrix sentence. This is to regard the Spontaneous expression as 'reflexive.' This problem will be discussed again in the following section.

### 3. Examining various types of transitive-intransitive contrast

This section is subdivided in terms of the type of morphemic contrast that transitive-intransitive pairs present. Each subsection is organized in the following way:

(1) Type of morphemic contrast.

(*u*) or (*ru*) means that the inflected part of the verb is *-u* (the 'consonant-stem verb'), or *-ru* (the 'vowel-stem verb') respectively.

(2) Example(s) of syntactic change.

It is tentatively assumed that the sentence with the intransitive verb is derived from the one with the corresponding transitive verb as its predicate. Examination of the productivity and the potentiality of each of the pairs may necessitate the reverse interpretation.

(3) Semantic features.

A brief account of some semantic feature(s) common to the formal contrast.

(4) Potentiality test.

In general, a typical transitive verb, such as the 'transitive proper' in Section 1, is expected to have a potentiality for having forms corresponding to the Passive (both Direct and Indirect), Causative, and Potential Voices. Some transitive verbs have

Spontaneous Voice forms. And a typical intransitive verb, such as the ‘intransitive proper’, is expected to have a potentiality of developing into the Indirect Passive, Causative, and Potential Voices, although there are some restrictions imposed by certain intrinsic properties of the verb.

A verbal form denoting a particular Voice, however, has no potentiality for developing into further Voice forms. The only exception to this is that the Causative Voice forms can usually develop into Passive (‘Casuative-Passive’), e.g., *koros (u)* ‘kill’ → *korosase(ru)* ‘make some one kill’ → *korosaserare(ru)* ‘be made to kill (some one) (by somebody)’.

Hence the potentiality test would suggest that a certain verbal form should either be regarded as an independent verb, transitive or intransitive, or it should be regarded merely as a form denoting a particular Voice.

For the main purpose of this paper, we shall put to this test those verbal forms which are generally considered intransitive verbs to see whether they are really ‘independent’ intransitive verbs or should be classified as forms denoting the Spontaneous Voice. However, as a natural development of the discussion, the test will be extended to some of the transitive verbs to see whether they are really ‘independent’ transitive verbs or should be regarded as forms denoting the Causative Voice. Thus if both the transitive and the intransitive forms have a complete, or nearly complete, potentiality, we propose to regard them as verbs making transitive-intransitive pairs in the strict sense of the word.

### 3.1. Type 1.

Morphemic contrast:

|              |                          |                            |
|--------------|--------------------------|----------------------------|
| Transitive   | -( <i>u</i> )            | (-( <i>ru</i> ))           |
| Intransitive | - <i>e</i> ( <i>ru</i> ) | (- <i>e</i> ( <i>ru</i> )) |

Syntactic change:

|                                 |                                     |
|---------------------------------|-------------------------------------|
| <i>Hon-ya ga kono hon o uru</i> | ‘A book-seller sells this book.’    |
| → <i>Kono hon ga ureru</i>      | ‘This book sells, or sold.’         |
| <i>Watasi ga kugi o nuku</i>    | ‘I pull off, or take off the nail.’ |
| → <i>Kugi ga nukeru</i>         | ‘The nail comes off.’               |
| <i>Hito ga yama o miru</i>      | ‘People see the mountain.’          |
| → <i>Yama ga mieru</i>          | ‘The mountain is seen, or visible.’ |



The subject of the first sentences of the sentence pairs above ('Active expression') is usually animate, which is entirely out of the question in the second sentences, hence, it is impossible to put the phrase denoting the agent (*...ni/niyotte/kara*) before the verb in the second sentences.

*Ano hon-ya ga kono hon o uru*

→ *Kono hon ga ano hon-ya niyotte ur-are-ru* (Passive)

'This book is sold by that bookseller.'

but not *—\*Kono hon ga ano hon-ya niyotte ur-e-ru*

The only exception to this general rule is the case with the verb *siru* 'find out, know'. The form *sir-e-ru* admits the presence of NP *ni*.

*Keisatu ga kono koto o siru* 'The police finds out this fact.'

→ *Kono koto ga keisatu ni sireru*. 'This fact is discovered by the police, or gets known to the police.'

It is doubtful however, that this NP *ni* is interpreted as denoting the agent. It might be interpreted more exactly as meaning 'to NP.'

It is interesting to note that, as in English, two ways of looking at the formation of the form *kireru* are possible.

e. g.

(Unspecified subject *ga*) *tuna o kiru* '(Somebody) cut a rope.'

→ *Kono tuna ga kireru*. 'This rope is cut.'

*Kono naihu ga* (Unspecified object *o*) *kiru* 'This knife cuts (something).'

→ *Kono naihu ga (yoku) kireru* 'This knife cuts (well).'

In English, expressions such as 'This knife cuts well,' 'The book sells well,' 'This business does not pay,' etc., are classified as the 'activo-passive' use of the verb.<sup>10</sup>

The sentence involving this *-e(ru)* form expresses that a certain incident occurs not as a result of somebody's action but spontaneously—that something happens as if by a spontaneous move of the noun phrase which is supposed to be the object of an action denoted by the stem of the verb. With most of the verbs this *-e(ru)* form cannot have Passive, Potential, or Causative form. Thus this form can be reasonably considered as a typical Spontaneous Voice form of the corresponding transitive forms.

Potentiality test:

We now put this *-e(ru)* form to the test. It is not necessary to apply this test to the transitive forms, because they are all capable of forming all these Voice forms. In the

following + means that the the form in question is possible, and — means that it is not possible. \* indicates that there will be additional notes or comments.

| Tr.                                 | Intr.                                          | Pass(Indirect). | Causative | Potential |
|-------------------------------------|------------------------------------------------|-----------------|-----------|-----------|
| <i>ur(u)</i> 'sell'                 | <i>ure(ru)</i> 'be sold'                       | —, +            | —         | —         |
| <i>kir(u)</i> 'cut'                 | <i>kire(ru)</i> 'be cut'                       | —, +            | —         | —         |
| <i>sir(u)</i> 'find out'            | <i>sire(ru)</i> 'get known'                    | —, +            | —         | —         |
| <i>tur(u)</i> 'fish'                | <i>ture(ru)</i> '(fish) be caught'             | —               | —         | —         |
| <i>tok(u)</i> 'solve, loosen'       | <i>toke(ru)</i> 'be solved, be untied'         | +               | —         | —         |
| <i>tor(u)</i> 'take, obtain'        | <i>tore(ru)</i> 'be taken, obtained, come off' | —               | —         | —         |
| <i>nuk(u)</i> 'pull off'            | <i>nuke(ru)</i> 'come off'                     | —               | —*        | +         |
| <i>nug(u)</i> 'take off (clothing)' | <i>nuge(ru)</i> 'be taken off'                 | —               | —         | —         |
| <i>hik(u)</i> 'pull, attract'       | <i>hike(ru)**</i>                              | —               | —         | —         |
| <i>hor(u)</i> 'dig'                 | <i>hore(ru)</i> ' (hole) is made, be dug'      | —               | —         | —         |
| <i>makur(u)</i> 'roll up'           | <i>makure(ru)</i> 'be rolled up and exposed'   | —               | —         | —         |
| <i>mom(u)</i> 'rub, crumple'        | <i>mome(ru)***</i>                             | +               | +*        | —         |
| <i>mot(u)</i> 'have'                | <i>mote(ru)****</i>                            | —               | —         | —         |
| <i>muk(u)</i> 'peel'                | <i>muke(ru)</i> 'peel off'                     | —, +            | +         | —         |
| <i>yabur(u)</i> 'tear'              | <i>yabure(ru)</i> 'be torn'                    | —               | —         | —         |
| <i>yak(u)</i> 'burn, broil'         | <i>yake(ru)</i> 'be burned, broiled'           | —               | —         | —         |
| <i>sak(u)</i> 'tear, sever, cut up' | <i>sake(ru)</i> 'be severed'                   | —               | +         | —         |
| <i>mi(ru)</i> 'see'                 | <i>mie(ru)</i> 'be seen, be visible'           | +               | +         | —         |
| <i>ni(ru)</i> boil'                 | <i>nie(ru)</i> 'be boiled, boil (int.)'        | —               | +         | —         |
| <i>kik(u)</i> 'hear'                | <i>kikoe(ru)</i> 'be heard, be audible'*****   | +               | +         | —         |

Notes: \* *nuke-sase(ru)* is possible only when *nukeru* is used in the sense that 'somebody gets rid of himself (from) a party, etc.' This *nukeru* might better be regarded as a transitive verb because it takes 'NP o.'

\*\**hikeru* is only used in idiomatic phrases such as *Ki ga hikeru* 'feel ashamed, have the pricks of conscience. ; *Gakkoo ga hikeru* 'be dismissed from school', etc.

\*\*\* *momeru* is also used in idiomatic expressions such as *Kaigi ga momeru* 'the meeting falls into trouble or confusion.' (But there is no \* *Kaigi o momu.*)

\*\*\*\**moteru* is also considered as an idiomatic expression as in *Ano otoko wa moteru* 'That fellow always gets on well with women.'

\*\*\*\*\*the form *kikoe(ru)* is considered an irregular form belonging to this type.

### 3.2. Type 2.

Morphemic contrast:

|       |        |
|-------|--------|
| Tr.   | -e(ru) |
| Intr. | -a(ru) |

Examples of syntactic change:

*Hito ga okane o mookeru* 'A person makes money.'

→ *Okane ga mookaru* 'Money comes in.' 'be profitable'

*Kare ga watasi no asi ni mizu o kakeru.*

'He puts, or splashes, water on my foot.'

→ *Watasi no asi ni mizu ga kakaru.*

'Water is put, or splashed, on my foot.'

*Kirisuto-kyoo o Nihon ni hiomeru* '(Some one) spreads, or

propagates Christianity throughout Japan.'

→ *Kirisuto-kyoo ga Nihon ni hiromaru*

'Christianity spreads, or gains a large number of followers in Japan.'

The semantic correspondence between the sentences having corresponding transitive and intransitive verbs is essentially the same as we have seen in the preceding type. Many of the transitive forms comprising this type expect both NP *ni* (Indirect object, or simply 'in, or to NP') and NP *o* (Object).

It may be worthwhile to note that some of these verbs are formally related to some adjectives, e. g.,

*katai* (adjective) 'hard, solid' — *katameru* 'harden' (tr.)

–*katamaru* ‘be hardened, become solid’ (intr.)

*takai* (adjective) ‘high’ –*takameru* ‘make something higher, raise, promote, exalt’

–*takamaru* ‘become high, be exalted’

As in Type 1, the intransitive form belonging to this type of contrast has a very limited potentiality for developing other Voice forms. This, together with the semantic features, leads us to classify them as the Spontaneous Voice forms of the corresponding transitive forms.

Potentiality test:

| Tr.                                                       | Intr.                                            | Pass(Ind) | Caus. | Pot. |
|-----------------------------------------------------------|--------------------------------------------------|-----------|-------|------|
| <i>ate(ru)</i> ‘hit something upon something’             | <i>atar(u)</i> ‘be hit on,’<br>‘hit on,’         | +         | +     | +, – |
| <i>atume(ru)</i> ‘gather’                                 | <i>atumar(u)</i> ‘gather’ (int)                  | +         | +     | +,   |
| <i>uwe(ru)</i> ‘plant’                                    | <i>uwar(u)</i> ‘be planted’                      | –         | –     | –    |
| <i>uke(ru)</i> ‘take(exam)’                               | <i>ukar(u)</i> ‘pass (exam)’                     | –         | +     | +    |
| <i>usume(ru)</i> ‘dilute’                                 | <i>usumar(u)</i> ‘be diluted,<br>become thin’    | –         | –     | –    |
| <i>uzume(ru)</i> ‘bury’                                   | <i>uzumar(u)</i> ‘be buried’                     | –         | –     | –    |
| <i>owe(ru)</i> ‘finish’                                   | <i>owar(u)</i> ‘end, finish<br>(intr.)’          | +         | +     | +    |
| <i>osame(ru)</i> ‘subdue (riot)’                          | <i>osamar(u)</i> ‘be subdued’                    | –         | –     | –, + |
| <i>kabuse(ru)</i> ‘cover (cloth)<br>over(a box)’          | <i>kabusar(u)</i> ‘(cloth)covers<br>over(box)’   | +         | –     | –    |
| <i>kake(ru)</i> ‘put, hang (tr.)’                         | <i>kakar(u)</i> ‘be put over,<br>hang(intr.)’    | +         | –     | –    |
| <i>kasane(ru)</i> ‘lay something<br>on top of<br>another’ | <i>kasamar(u)</i> ‘be laid,<br>be piled on,’     | –, +      | +     | –    |
| <i>katame(ru)</i> ‘harden’                                | <i>katamar(u)</i> ‘be hardened,<br>become solid’ | +         | +     | +, – |
| <i>kime(ru)</i> ‘decide’                                  | <i>kimar(u)</i> ‘be decided’                     | +         | –     | –    |
| <i>kuwawe(ru)</i> ‘add’                                   | <i>kuwawar(u)</i> ‘add(intr.),<br>join’          | +         | +     | +    |
| <i>some(ru)</i> ‘dye(cloth)’                              | <i>somar(u)</i> ‘dye(intr.),<br>take color’      | +         | +     | –    |

|                                                        |                                                  |      |      |     |
|--------------------------------------------------------|--------------------------------------------------|------|------|-----|
| <i>sonawe(ru)</i> ‘equip’                              | <i>sonawar(u)</i> ‘get equipped.’                | +, – | –    | –   |
| <i>suwe(ru)</i> fix ‘(machine)<br>on (a floor)’        | <i>suwar(u)</i> ‘be fixed’                       | –    | –    | –   |
| <i>takame(ru)</i> ‘make., high’                        | <i>takamar(u)</i> ‘be heightened’                | –    | –    | –   |
| <i>tame(ru)</i> ‘save, store’                          | <i>tamar(u)</i> ‘be saved’                       | +    | +    | –   |
| <i>tasuke(ru)</i> ‘help, save’                         | <i>tasukar(u)</i> ‘be saved’                     | +, – | –    | –   |
| <i>tutawe(ru)</i> ‘deliver<br>(message, religion)’     | <i>tutawar(u)</i> ‘be delivered’                 | +    | –    | –   |
| <i>tuyome(ru)</i> ‘strengthen’                         | <i>tuyomar(u)</i> ‘get strong’                   | –    | –    | –   |
| <i>tume(ru)</i> ‘block(a hole)<br>with (cement, etc.)’ | <i>tumar(u)</i> ‘be blocked,<br>be stuffed’      | +    | +    | –   |
| <i>hirome(ru)</i> ‘spread’                             | <i>hiromar(u)</i> ‘spread(intr.)’                | +    | +, – | –   |
| <i>hiroge(ru)</i> ‘widen’                              | <i>hirogar(u)</i> ‘get wider’                    | –    | +    | +   |
| <i>mage(ru)</i> ‘bend(a nail)’                         | <i>magar(u)</i> ‘be bent, become<br>crooked’     | +    | +    | – * |
| <i>maze(ru)</i> ‘mix(tr.)’                             | <i>mazar(u)</i> ‘mix(intr.)’                     | +    | +    | +   |
| <i>marume(ru)</i> ‘make something<br>round, rolled’    | <i>marumar(u)</i> ‘become round’                 | +    | –    | –   |
| <i>mooke(ru)</i> ‘gain money’                          | <i>mookar(u)</i> ‘money is gained’<br>(int.)’    | –    | –    | –   |
| <i>yowame(ru)</i> ‘weaken’                             | <i>yowamar(u)</i> ‘get weaker’                   | –    | +    | –   |
| <i>yokotae(ru)</i> ‘lay’                               | <i>yokotawar(u)</i> ‘lie’                        | +    | +    | +   |
| <i>yasume(ru)</i> ‘give something<br>a rest’           | <i>yasumar(u)</i> ‘be made ease,<br>rest(intr.)’ | –    | –    | –   |

\**magaru* in the sense *miti o magaru* ‘turn (the corner of) a street’ is a different verb,  
which has the Potential Voice form.

### 3.3. Type 3.

Morphemic contrast:

|       |        |
|-------|--------|
| Tr.   | –(u)   |
| Intr. | –ar(u) |

Examples of syntactic change:

*Nimotu ga miti o husagu* ‘Baggages block the street.’

→ *Miti ga (nimotu de) husagaru* ‘The street is blocked (with baggage)s’

*Hasi ga sono sima o hondo ni tunagu* ‘A bridge connects the island with the mainland.’

→ *Sono sima ga hondo ni tunagaru* ‘The island is connected with the mainland.’

Sakuma (*op. cit.*) cites some other pairs as belonging to this type, but most of them do not show the same syntactic correspondence as the two examples above. For example, *matagu* ‘bestride, step over’ *vs.* *matagaru*; *kurumu* ‘wrap (a body) (with a blanket, etc.)’ *vs.* *kurumaru*; *karamu* ‘coil around, stick to,’ *vs.* *karamaru*; *tukamu* ‘get hold of,’ *vs.* *tukamaru*, etc. There is no doubt that these forms are related to each other in some way, but it is irrelevant to put these pairs into this category, at least from a synchronic point of view. The forms like *husagaru*, *tunagaru* would be considered Spontaneous forms also, because of their semantic content and their difficulty in making other Voice forms, although this contrasting type is limited to a very few words.

### 3.4. Type 4.

Morphemic contrast:

|       |        |
|-------|--------|
| Tr.   | -s(u). |
| Intr. | -r(u)  |

Examples of syntactic change:

*Watasi ga zimusyo o ni-kai ni utusu* ‘I move the office upstairs.’

→ *Zimusyo ga ni-kai ni uturu* ‘The office moves (is moved) upstairs.’

*Kutu-ya ga kutu o naosu* ‘The shoemaker repairs the shoes.’

→ *Kutu ga naoru* ‘The shoes get repaired, become all right.’

Potentiality test:

In most cases, both transitive and intransitive forms showing this type of contrast have complete potentiality for making Passive, Causative and Potential Voice forms.

e. g. *utusu* ‘move (a position) : *uturu* ‘moves (intr.)’

*kaesu* ‘return (something) : *kaeru* ‘(something) returns’

*hikkuri-kaesu* ‘turn, or topple something over’ : *hikkuri-kaeru* ‘(something) topples over’

*mawasu* ‘revolve, turn (something) round’ : *mawaru* ‘(something) turns round, revolve’

*nokosu* ‘(leave out, leave over something) : *nokoru* ‘(something) is left out, or left over.’

*toosu* ‘let (something) pass’ : *tooru* ‘(something) passes’

It is difficult to make Cauraitve and Potential forms from some of the intransitive forms of these pairs.

e. g. *okoru* ‘(something) happens, takes place’ (–*okosu*)

*uturu* ‘be photographed’ (–*utusu*)

*karamaru* ‘coil around, stick to’ (–*karamasu*)

*naoru* ‘be repaired, get straightened’ (–*naosu*)

Some of the transitive forms of these pairs lack the Causative form, e. g.,

*kabusu* ‘(cover something up)’ – \**kabus-ase(ru)*

*hara o kudasu* ‘have loose bowels’ (–*hara ga kударu*) – \**kara o kudas-ase(ru)*.

The above observation suggests that, in general, it is better to regard the forms showing this type of contrast as independent transitive and intransitive verbs respectively.

### 3.5. Type 5.

Morphemic contrast:

|       |                |
|-------|----------------|
| Tr.   | – <i>e(ru)</i> |
| Intr. | –( <i>u</i> )  |

Examples of syntactic change:

*Watasi ga mado o akeru* ‘I open the window.’

→ *Mado ga aku* ‘The window opens.’

*Kaigi o tuzukeru* ‘(They) continue a conference.’

→ *Kaigi ga tuzuku* ‘A conference continues.’

Potentiality test:

In most cases, both the transitive and the intransitive forms have a complete potentiality, as in the case of Type 4, but some of the intransitive forms lack the Potential form.

| Tr.                                                     | Intr.                                                     | Pass | Caus. | Pot. |
|---------------------------------------------------------|-----------------------------------------------------------|------|-------|------|
| <i>susume(ru)</i> 'make(something) go ahead'            | <i>susum(u)</i> 'go ahead, advance'                       | +    | +     | +    |
| <i>sorowe(ru)</i> 'arrange, have complete.,'            | <i>sorow(u)</i> 'be arranged, be comolete'                | +    | +     | +    |
| <i>tate(ru)</i> 'stand, build (something)'              | <i>tat(u)</i> '(something) stands'                        | +    | +     | +    |
| <i>tuke(ru)</i> 'attach'                                | <i>tuk(u)</i> 'be attached'                               | +    | +     | +    |
| <i>tikazuke(ru)</i> 'put(something) close to.,'         | <i>tikazuk(u)</i> 'come near'                             | +    | +     | +    |
| <i>muke(ru)</i> 'put(something) in a certain direction' | <i>muk(u)</i> '(something) stands in a certain direction' | +    | +     | +    |
| <i>yurume(ru)</i> 'loosen'                              | <i>yurum(u)</i> 'become loose'                            | +    | +     | —    |
| <i>ake(ru)</i> 'open (something)'                       | <i>ak(u)</i> '(something) opens'                          | —    | —     | —    |
| <i>igame(ru)</i> (= 'yugame(ru)) 'distort, warp'        | <i>igam(u)</i> (= 'yugam(u)) 'be distorted, crooked'      | —    | +     | —    |
| <i>itame(ru)</i> 'hurt(a foot, etc.)'                   | <i>itam(u)</i> '(A leg) aches'                            | —    | +     | —    |
| <i>katamuke(ru)</i> 'tilt, incline'                     | <i>katamuk(u)</i> 'be tilted'                             | +    | +     | —    |
| <i>sodate(ru)</i> 'grow, or raise (a child, etc.)'      | <i>sodat(u)</i> '(A child, etc) grows'                    | +    | +     | —    |
| <i>todoke(ru)</i> 'deliver (something)'                 | <i>todok(u)</i> 'be delivered, (a mail) reaches'          | —    | +     | —    |
| <i>tuzuke(ru)</i> 'continue (something)'                | <i>tuzuk(u)</i> '(something) continues'                   | +    | +     | —    |
| <i>tononowe(ru)</i> 'get(something) ready'              | <i>tononow(u)</i> 'become ready'                          | +    | +     | —    |

The fact that nearly half of the intransitive forms lack the Potential form indicates that this type stands on the borderline. The interpretation of the transitive forms as the Causative Voice form of the corresponding intransitive forms (as we shall see later) is rejected, since these forms can still develop the Causative forms. However, it may be possible to regard the element *-e-* as a morpheme denoting 'transitivity.'

The semantic difference between the Causative form of an intransitive form of the pair and the corresponding transitive form is that in the former the relation of the action of the subject to the incident is indirect, while in the latter, direct.

e. g. *Watasi ga hei o susum-ase(ru)* 'I make the forces go ahead'

*Watasi ga hei o susum-e(ru)* 'I advance the forces.'



### 3.6. Type 6.

Morphemic contrast:

|       |                 |
|-------|-----------------|
| Tr.   | - <i>s(u)</i>   |
| Intr. | - <i>re(ru)</i> |

Examples of syntactic change:

*Kare ga atama o kakusu* 'He hides his head.'

→ *Atama ga kakureru* 'The head hides (itself), or goes out of sight.'

*Watasi ga mizu o nagasu* 'I dash, or drain, or let flow, water.'

→ *Mizu ga nagareru* 'Water flows.'

Potentiality test:

Here again, we find that both the transitive and the intransitive forms have the potential to develop Passive, Causative and Potential forms, except for a few exceptional cases.

| e. g. | Tr.                                                   | Intr.                                                      |
|-------|-------------------------------------------------------|------------------------------------------------------------|
|       | <i>arawas(u)</i> 'show, make something appear.'       | <i>araware(ru)</i> 'appear'                                |
|       | <i>kakus(u)</i> 'hide'                                | : <i>kakure(ru)</i> 'hide (oneself)                        |
|       | <i>tubus(u)</i> 'crash, break'                        | : <i>tubure(ru)</i> '(something)<br>breaks, or is crashed' |
|       | <i>taos(u)</i> 'make something fall'                  | : <i>taore(ru)</i> 'fall'                                  |
|       | <i>nagas(u)</i> 'make (water) flow'                   | : <i>nagare(ru)</i> '(water) flows'                        |
|       | <i>hanas(u)</i> 'make (something) separate'           | : <i>hanare(ru)</i> 'get separated'                        |
|       | <i>hazus(u)</i> 'take off, or undo'                   | : <i>hazure(ru)</i> 'be taken off'                         |
|       | <i>nogas(u)</i> 'have (something) escape, go<br>away' | : <i>nogare(ru)</i> 'escape'                               |

Examples of the intransitive forms lacking the Potential form:

*kobore(ru)* 'be spilt' (←*kobosu*)

*kuzure(ru)* 'be collapsed, fall down' (←*kuzusu*)

*yogore(ru)* 'get dirty' (←*yogosu*)

*kegare(ru)* 'get soiled, contaminated' (←*kegasu*)

### 3.7. Type 7.

Morphemic contrast:

|       |                 |
|-------|-----------------|
| Tr.   | - <i>as(u)</i>  |
| Intr. | - ( <i>ru</i> ) |

Examples of syntactic change:

*Umi no kaze ga matu o karasu* 'The wind from the sea makes the pine trees die.'

→ *Matu ga kareru* 'The pine trees die.'

*Kare ga hige o hayasu* 'He grows a mustache.'

→ *Hige ga hayeru* 'a mustache grows.'

Transitive verbs of this type have a strong Causative quality. This is clear from the following two facts: first, they cannot develop the Causative form, and second, there is no typical Causative form made by attaching *-(s)ase* to the stem, which does not exist in present-day Japanese, i. e., there is no *\*karas-e(ru)* or *\*hay-ase(ru)*, different from Type 10, as we shall see later.

Potentiality test:

|      |                                            | Pass. | Caus. | Pot. |
|------|--------------------------------------------|-------|-------|------|
| Tr.  | <i>aras(u)</i> 'devastate, ruin'           | +     | -, +  | -    |
| Int. | <i>are(ru)</i> 'rage, be devastated'       | +     | +     | +    |
| Tr.  | <i>okuras(u)</i> 'delay, defer'            | +     | -     | -    |
| Int. | <i>okure(ru)</i> 'be late'                 | +     | +     | +    |
| Tr.  | <i>koyas(u)</i> 'make... fertile, fat'     | +     | -     | -    |
| Int. | <i>koye(ru)</i> 'become fertile, fat'      | +     | +     | +    |
| Tr.  | <i>naras(u)</i> 'get... accustomed, tame'  | +     | -     | -    |
| Int. | <i>nare(ru)</i> 'become accustomed, tamed' | +     | +     | +, - |
| Tr.  | <i>hukuras(u)</i> 'swell, bulge'           | +     | -     | -    |
| Int. | <i>hukure(ru)</i> 'swell, get bigger'      | +     | +     | +    |
| Tr.  | <i>karas(u)</i> 'make (trees) die'         | +     | -     | -    |
| Int. | <i>kare(ru)</i> '(trees) die'              | +     | +     | -    |
| Tr.  | <i>kokas(u)</i> 'make... fall'             | +     | -     | +    |
| Int. | <i>koke(ru)</i> 'fall'                     | +     | +     | +    |
| Tr.  | <i>kogas(u)</i> 'scorch, burn'             | +     | -     | -    |
| Int. | <i>koge(ru)</i> 'scorch, burn (intr.)'     | +     | +     | -    |
| Tr.  | <i>samas(u)</i> 'cool(water), awake'       | +     | -     | +    |
| Int. | <i>same(ru)</i> '(water) gets cool, awake' | +     | +     | -    |
| Tr.  | <i>tayas(u)</i> 'extinguish'               | +     | -     | +    |
| Int. | <i>taye(ru)</i> 'be extinguished'          | +     | -     | +    |

|      |                                    |   |      |   |
|------|------------------------------------|---|------|---|
| Tr.  | <i>nuras(u)</i> ‘get...wet’        | + | +, − | + |
| Int. | <i>nure(ru)</i> ‘get wet’          | + | +    | − |
| Tr.  | <i>nigas(u)</i> ‘let...escape’     | + | −    | + |
| Int. | <i>nige(ru)</i> ‘escape, run away’ | + | +    | + |
| Tr.  | <i>hayas(u)</i> ‘make...grow’      | + | −    | + |
| Int. | <i>haye(ru)</i> ‘grow’             | + | +    | + |
| Tr.  | <i>huyas(u)</i> ‘increase’         | + | −    | + |
| Int. | <i>huye(ru)</i> ‘increase(int.)’   | + | +    | + |
| Tr.  | <i>moras(u)</i> ‘make...leak’      | + | −    | + |
| Int. | <i>more(ru)</i> ‘leak’             | + | +    | − |

### 3.8. Type 8.

Morphemic contrast:

|       |               |
|-------|---------------|
| Tr.   | <i>-as(u)</i> |
| Intr. | <i>-i(ru)</i> |

Example of syntactic change:

*Karera ga mon o tozasu* ‘They close the gate.’

→ *Mon ga toziru* ‘The gate is closed’

This is essentially the same type as Type 7, the only difference being the substitution of *i* in the intransitive form for *e* in that of Type 7. The forms showing this type of pair are few in number.

Potentiality test:

The transitive form has no Causative Voice form, but it does have the potential to develop Passive and Potential forms. All the intransitive forms can develop Passive, Causative, and Potential Voice forms, except that *kori(ru)* ‘have a bitter experience and learn (something) to one’s cost’ has no Potential form, apparently for a semantic reason.

Examples of the pairs:

| Tr.                                               | Intr.                             |
|---------------------------------------------------|-----------------------------------|
| <i>ikas(u)</i> ‘make something alive’             | : <i>iki(ru)</i> ‘live’           |
| <i>koras(u)</i> ‘give somebody bitter experience’ | : <i>kori(ru)</i> (cited above)   |
| <i>tozas(u)</i> ‘shut’                            | : <i>tozi(ru)</i> ‘shut’          |
| <i>nobas(u)</i> ‘extend, make...longer’           | : <i>nobi(ru)</i> ‘become longer’ |
| <i>mitas(u)</i> ‘fill up’                         | : <i>miti(ru)</i> ‘be filled up’  |

### 3.9. Type 9.

Morphemic contrast:

|       |                |
|-------|----------------|
| Tr.   | - <i>os(u)</i> |
| Intr. | - <i>i(ru)</i> |

Example of syntactic change:

*Watasi ga kare o okosu* 'I wake him up.'  
→ *Kare ga okiru* 'He wakes up.'

Forms showing this type of contrast are still fewer in number than the preceding type. These seem to be one variety of the preceding *-as(u)*-*-i(ru)* type. Although it is interesting to note that all the transitive forms ending with *-os(u)* in contrast to the intransitive *-i(ru)* form, so far as we know, begin with the same *o* sound, it is doubtful that they are purely phonologically conditioned, since we have words such as *korasu* and *nobasu*, which make up *-as(u)*-*-i(ru)* pair.

Potentiality test:

|                                  | Pass. | Caus. | Pot. |
|----------------------------------|-------|-------|------|
| Tr. <i>okos(u)</i> 'awake...'    | +     | +     | +    |
| Int. <i>oki(ru)</i> 'wake up'    | +     | +     | +    |
| Tr. <i>oros(u)</i> 'put... down' | +     | +     | +    |
| Int. <i>ori(ru)</i> 'go down.'   | +     | +     | +    |
| Tr. <i>otos(u)</i> 'make...fall' | +     | +     | +    |
| Int. <i>oti(ru)</i> 'fall, drop' | +     | +     | -    |
| Tr. <i>o'os(u)</i> 'threaten'    | +     | +, -  | +    |
| Int. <i>odi(ru)</i> 'be scared'  | +     | +     | -    |

The above test indicates that both the transitive and the intransitive forms should be regarded as independent verbs.

### 3.10. Type 10.

Morphemic contrast:

|       |                |
|-------|----------------|
| Tr.   | - <i>as(u)</i> |
| Intr. | -( <i>u</i> )  |

Examples of syntactic change:

*Watasi ga syatu o kawakasu* 'I dry the shirts.'

→*Syatu ga kawaku* 'The shirts get dry.'

*Watasi ga hikooki o tobasu* 'I fly airplanes.'

→*Hikooki ga tobu* 'An airplane flies.'

None of the transitive forms belonging to this type of contrast can have the Causative form. They are in no way different from the typical Causative form *-ase(ru)*. This will lead to the reformulation of the above syntactic relation, namely,

*Syatu ga kawaku*

→*Watasi ga syatu o kawakasu*

*Hikooki ga tobu*

→*Watasi ga hikooki o tobasu*

In fact, almost all of the intransitive verbs can have this form, although there are some which have no typical Causative form. This *-as(u)* form, then, may be regarded as a contraction of *-ase(ru)*.

#### 4. Conclusion

Three significant points have now been made clear: first, many of the intransitive verbs are derivable from the corresponding transitive verbs with a fair degree of regularity, and with essentially the same accompanying semantic properties; second, the derivation of these intransitive forms is always correlated with a definable syntactic change; and third, among those which have generally been conceived as intransitive verbs showing some morphological contrast with transitive verbs, there are some which are capable of producing Passive, Causative, and Potential Voice forms, while there are others which are unable to express either the Potential Voice or the Causative Voice, or both.

These facts seem to support our proposal to introduce a Voice category which we would call 'Spontaneous' in the description of Japanese grammar.

Furthermore, as a byproduct of this investigation, we have found that some of what are generally classified as transitive verbs should be regarded as forms denoting the Causative Voice.

We now divide the so-called transitive-intransitive pairs into three groups:

(1) Type 1: *-(u) --e(ru)*

Type 2: *-e(ru) --ar(u)*

Type 3: -(u) --ar(u)

These intransitive forms (those on the right-hand side in the above pairs) should be regarded as the forms denoting the Spontaneous Voice. Although their predictability is admittedly limited, their high regularity will account for the fact that, in actual speech performance, a number of unfamiliar words are coined in accordance with the above rules and are readily understood by the hearer.

(2) Type 10: -as(u)--(u)

Type 8: -as(u)--i(ru)

Type 9: -os(u)--i(ru)

Type 7: -as(u)--e(ru)

These transitive forms (those on the left-hand side in the above pairs) should rather be regarded as forms denoting the Causative Voice, i. e., variants of the typical Causative Voice denoter *-ase(ru)/sase(ru)*. The eligibility as the complete transitive verb seem to increase downward in the above order.

(3) Type 4: -s(u) --r(u)

Type 5: -e(ru)--(u)

Type 6: -s(u)--re(ru)

Both the transitive and the intransitive forms composing the above types of pairs seem to be eligible for classification as complete transitive and intransitive verbs. In other words, they are the transitive-intransitive pairs in the strict sense of the word.

To what particular property of the verbs the potentiality to undergo Spontaneous Voice transformation should be ascribed, and the reason for some verbs falling into a particular type and other verbs into another, are beyond the scope of the present study.

(September, 1967)

Notes:

1. SAKUMA Kanae, "Jidōshi Tadōshi" ('Intransitive and Transitive verbs') in *Gendai Nihon-go no Hyōgen to Gohō*, Tokyo, 1952.
2. HOSOE Itsuki, "Discussion of Voice of Japanese verbs, and the principles of the development of inflectional forms of verbs," in *Collection of Papers for OKAKAURA Yoshizaburo*, 1928. Also NAGATA Yoshitaro, "On the Voice of the Verb", in *Kokugo to Kokubungaku* 1928. FUKUMURA Torajiro, *Jisei to Tai* ('Tense and Aspect'), 1954.
3. See, for example, OTSUKI Fumihiko's *Dai-Genkai*, published in 1898, or MITSUYA Shigematsu, *Kōtō Nihon Bunpō*, first publication in 1908.

4. Cf., for instance, KINDAICHI Haruhiko, "Toki, Tai, Sō, oyobi Hō ('Tense, Voice, Aspect, and Mood') in *Nihon Bunpō Kōza*, Tokyo, 1965, 235 ff.
5. Cf. Otto Jespersen, *Modern English Grammar*, III. Also, Zelig S. Harris, "Transformational theory" *Language* vol.41, No3, 1965.
6. Cf. KOZU Harushige, *Girisha-go Bunpō*, 1960, pp. 156-8, also 315ff. Also, TANAKA Hidenaka, *Shoto Girisha-go Bunten*, 1955, p.9.
7. Mario Pei, and Frank Gaynor, *A Dictionary of Linguistics*, New York, 1954, p.p.228—9.
8. Zelig S.Harris, "Co-occurrence and transformation in linguistic structure" *Language*, 1957.
9. Noam Chomsky, *Aspects of the Theory of Syntax*, 1965.
10. I have previously discussed this formulation in some details in "Passivization in Japanese", *Journal of the Osaka University of Foreign Studies*, Vol. 16., also in the May issue of *Eigo Seinen*, 1967. There is a view expressed by HASEGAWA Kinsuke which regards both types of passive construction as essentially the same in the Deep structure. See HASEGAWA Kinsuke, "On English Passive Construction" in the November issue of *Eigo Seinen*, 1966, and also "On Passive construction again" in the July issue, *Eigo Seinen*, 1967.
11. Cf. Chomsky, *op. cit.* Also James MacCawley, "On Semantic Structures," *Kotoba no Uchū*, September, 1967.