A Distributed Morphology-Based Study on Verb Derivation in Japanese

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Abstract
This study uncovers Japanese verb derivation based upon the approach ‘distributed morphology’, conveying three ways of deriving a transitive (vt) or an intransitive verb (vi) in Japanese: (a) derived from the same adjective stem; (b) adding a morpheme that indicates vt or vi properties to a stem; and (c) verbalising a loanword or a Japanese-originated lexicon. In terms of deriving vt and vi from the same adjective stem, there is a semantic compositionality between the stem and the later added morphemes. Syntactically, the category of the derived vt and vi is established after the merger. In the second method of verb derivation, four pairs of vt/vi morphemes are confirmed: ‘-o- (-u)’; ‘-e-’/ ‘-ar-’; ‘-o-(-u)’/ ‘-e-’; ‘-o-(-u)’; ‘-os-(-osu)’; ‘-as-(-asu)’/ ‘-i-’; ‘-as-(-asu)’; ‘-s- (-su)’/ ‘-e-’. Furthermore, three verbalisers, ‘る’, ‘する’ and aspect ‘てる’, participate in the third type of verbalisation and, most essentially, the category of the base is not limited to nouns, but extends to mimetics and phrases. A proposal to treat these variations is put forward: the syntactic category of Japanese vt and vi are not predetermined. Verb derivation is a completely syntactic operation. The derivations, however, split into two paths: the process by which vt and vi derive from the same adjective stem is a case of ‘word-derivation’, and the process by which a verb is derived by adding a morpheme that indicates vt or vi properties to a stem and verbalising a loanword or a Japanese-originated lexicon is a manipulation of ‘root-derivation’.

Keywords: distributed morphology, word formation, verb derivation
1. Introduction

There are three ways of deriving a transitive (vt) or an intransitive verb (vi) in Japanese. First, vt and vi derive from the same adjective stem, as illustrated in (1).

(1) Intransitive and transitive verbs derive from the same adjective stems

<table>
<thead>
<tr>
<th>Adj</th>
<th>Intransitive V</th>
<th>Transitive V</th>
</tr>
</thead>
<tbody>
<tr>
<td>fukai</td>
<td>FUKAM-ar-u</td>
<td>FUKAM-e-ru</td>
</tr>
<tr>
<td>takai</td>
<td>ATATAM-ar-u</td>
<td>ATATAM-e-ru</td>
</tr>
</tbody>
</table>

Second, a morpheme that indicates vt or vi properties is added to the verb stem, as in (2).

(2) A morpheme that indicates transitive/intransitive properties is added to the verb stem, for example:

KOWA-s-(r)u/KOWA-re-ru; TAT-Ø-(r)u/TAT-e-ru; KIR-Ø-(r)u/KIR-e-ru

These two ways of deriving a verb represent transitive/intransitive verb alternation. More illustrations of alternation are provided in Table 1.

Table 1. Intransitive/transitive verb pairs in Japanese

<table>
<thead>
<tr>
<th>Intransitive verb</th>
<th>Transitive verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>kir-e-ru (cut. intr)</td>
<td>kir-ø-(r)u (cut. tran)</td>
</tr>
<tr>
<td>-i/-os ot-i-ru (fall)</td>
<td>ot-os-u (drop)</td>
</tr>
<tr>
<td>-e/-akas obi-e-ru (become frightened at)</td>
<td>obiy-akas-u (frighten)</td>
</tr>
</tbody>
</table>

As an agglutinative language, morphology plays an essential role. vt and vi alternation appears systemic, except for the morpheme ‘-e’, which may indicate an intransitive verb (e.g. 折れる ‘or-e-ru’) or a transitive verb (e.g. 集める ‘atsum-e-ru’). The multi-function of -e inspires us to ponder the question of whether there is no ‘base’ transitive or ‘base’ intransitive verb in the first place. Maybe all verbs are derived at a syntactic level.

A third way of building a verb is ‘verbalisation’, which contains two variations:

(3) a. verbalising a gairaigo (the category of the base can be any part of speech: nouns, adjectives, adverbs, etc.)
   b. verbalising a Japanese-originated lexicon

---

1 There is a third method of transitive/intransitive verb alternation, in which transitive/intransitive verbs share the same word form, as shown below.

(i). HIRA-ku (doa –o-hiraku ‘open the door’ / doa-ga-hiraku ‘the door opens’)
(ii). MA-ku (asakao-ga-tsuru-o-maku ‘The morning glory rolled up the tendril’ / asakao—no-tsutu-ga-maku ‘The tendrils of the morning glory rolled up’)

2 The term gairaigo literally means ‘words that came from outside’. Linguistically, it refers to loanwords that are originated in languages other than Chinese. They are written in ‘katakana’.
When adopting a *gairaigo*, Japanese tends to re-shape it. (4) provides an illustration of verbalising a *gairaigo*.

(4) Verbalising a *gairaigo*

a. original lexicon: サボタージュ (French) ‘sabotage’ (noun)

b. verbalised lexicon: サボる ‘to cut class’ (verb)

The French-origin noun サボタージュ’s verbalisation into the verb サボる includes two steps. First, the original lexicon サボタージュ is abbreviated into a two-syllable lexicon, サボ. Second, the two-syllable lexicon is combined with a verbaliser る.

Verbalisation can also take place for Japanese-originated lexicons, as exemplified by (5).

(5) Verbalising a Japanese-originated lexicon

a. original lexicon: 神 ‘God’ (noun)

b. verbalised lexicon: 神ってる ‘behaving like God’ (verb)

The Japanese noun 神 is combined with a PROGRESSIVE aspect, ‘ってる’, transiting into ‘神ってる’. The new verb indicates a state and a means: ‘(somebody) always performs splendidly, like God’.

Previous research on word formations in Japanese have focused on transitive/intransitive verb alternation, tackling the question of which is the base and which is derived. Remarkable approaches include ‘morphological perspective’ (Okutsu 1967, Nishiyama 2000); ‘subject’s animacy’ (Morita 1994); and ‘lexical conceptual structure’ (Suga 1993; Kageyama 1993, 1996, 1999). Kageyama’s (1996) proposal of a two-way derivation of an intransitive verb is influential, i.e. decausativisation and anticausativisation. Deriving an intransitive verb from a transitive verb is a manipulation of ‘decausativisation’, for example //kim-e-ru// → //kim-ar-u//, cf. (6).

(6) x CONTROL [y BECOME [y BE AT-z]]

x = y CONTROL [y BECOME [y BE AT-z]]

‘Anticausativisation’ refers to the morpheme ‘-e-’ identifying the agent and the object, giving rise to the identification of the internal and external arguments; this in turn leads to the derivation of transitive verbs into intransitive verbs (Kageyama 1996), for example //kir-o-(r)u// → //kir-e-ru//, cf. (7).

(7) x CONTROL [y BECOME [y BE AT-z]]

↓

Ø

Two issues, however, remain to be explored. First, the double functions of the morpheme ‘-e-’ pose the question of whether there is no ‘base’ vt or ‘base’ vi in the first place. Second, the verbalisation of loanwords as well as the Japanese-originated lexicon are neglected. They...
ought to be taken into consideration, for more and more new lexicons are being created. Their composition patterns and category transition need to be tackled in more depth.

This paper is organised as follows. Section 2 sheds light on the ‘distributed morphology’ framework adopted in this study. Section 3 considers two issues: verbs derived from the same adjective stem, and verbs derived via a morpheme. Section 4 turns to verbalisation regarding gairaigo and Japanese-originated lexicons. Particular attention is placed on how different lexical categories might transit into verbs. Section 5 highlights the results and concludes the paper.

The data is extracted using the Balanced Corpus of Modern Written Japanese, compiled by the National Institute for the Japanese Language and Linguistics (2011).

2. The ‘Distributed Morphology’ Framework

The distributed morphology framework was initially put forward by Halle and Marantz (1993), (1994). Three relevant lists are involved:

(a). Formative List
(b). Exponent List
(c). Encyclopaedia

The ‘Formative List’ contains no grammatical categories in and of themselves. The ‘Exponent List’ is also known as ‘vocabulary items’, associating phonological content. ‘Encyclopaedia’ associates syntactic units with special, non-compositional aspects of meaning. Figure 1 provides a grammatical model of the framework.

![Figure 1. Model of distributed morphology](image)

The central claim of distributed morphology lies in that there is a single generative engine for the formation of both complex words and complex phrases. This is named the ‘Single Engine Hypothesis’ (Marantz 1997, Arad 2003, Embick and Noyer 2007).
(8) The Single Engine Hypothesis

The formation (forming a new lexicon by combining two constituents) is a completely syntactic manipulation.

Distributed morphology has been adopted intensively in linguistic typological work since its initial application to Hebrew in 1990s: see, for instance, English inflection and resultative construction (Embick 2004; 2010); Japanese nominalisations (Volpe 2005); Japanese adjective inflection (Nishiyama 1999, Takawa 2013); and Hindi Noun Inflection (Singh and Sarma 2010). The framework appears particularly efficient for languages with vague word classes due to the lack of inflectional morphology, such as Chinese (cf. Cheng 2015, 2016; Hu 2017, etc.).

The framework’s most significant application is ‘word formation’. A crucial proposal, known as the ‘Root Hypothesis’, has been put forward by Marantz (2001), Arad (2003), and Embick and Noyer (2007).

(9) The Root Hypothesis

The syntactic categories (V, N, A) are not predetermined, but are determined by an unspecified ‘√ root’ plus syntactic environment.

According to the ‘Root Hypothesis’, verbs and adjectives are not syntactic atoms, but are shaped afterwards. Marantz (2001: 6–7) demonstrates two places for building words. One is in the domain of a root, attaching a morpheme to the root before attaching a functional head that determines the syntactic category of the word (N, V, Adj). The second place is outside the domain of functional head that determines the syntactic category. We will use Japanese data (the adjective 良い yoi ‘good’) to illustrate the theory.

√yoi in a local relation with n is a noun: 랍 yoshi, cf. (10).

(10)  v yo-shi
      /  \\
     n √yo
      \-shi

√yoi in a local relation with ki is an adnominal adjective: 랍 yoki, cf. (11).

(11)  v yo-ki
      /  \\
     n √yo
      \-ki

√yoi in a local relation with ku is an adverbial, with ‘ku’ being a copula (Nishiyama 2000): 重要讲话 yoku, cf. (12).
Distributed morphology asks the significance of syntax in word formation. There are, however, two ways of forming a lexicon (Arad 2003 and Embick 2010), i.e. root-derived and word-derived. Root-derived formation refers to a word directly derived from the root; the original lexicon has little to do with the derived lexicon. In word-derived, a word derives from a specified constituent and retains its phonetic and semantic features. Having highlighted the framework, the analysis will now follow distributed morphology as a point of departure and incorporate the ‘root-derived’ and ‘word-derived’ insights to account for Japanese verb derivation.

3. Verb Derivation in Terms of the vt and vi Pair

This section proceeds to exploring how a transitive or an intransitive verb can be shaped. Our starting point is a transitive/intransitive verb pair derived from the same adjective stem (3.1). We then move on to deriving vt or vi by adding a morpheme that indicates vt/vi properties to a stem (3.2).

3.1 Verbs Deriving from the Same Adjective Stem

One way to build a vt or vi is to derive from the same adjective stem (13).

(13) FUKAM-e-ru  (Transitive)
    (a).  FUKAM-
           FUKAM-ar-u  (Intransitive)
           HIROM-e-ru  (Transitive)
    (b).  HIROM-
           HIROM-ar-u  (Intransitive)
           TAKAM-e-ru  (Transitive)
    (c).  TAKAM-
           TAKAM-ar-u  (Intransitive)
           TSUYOM-e-ru  (Transitive)
(d). TSUYOM-

TSUYOM-ar-u   (Intransitive)

YOWAM-e-ru   (Transitive)

(e). YOWAM-

YOWAM-ar-u   (Intransitive)

SEBAM-e-ru   (Transitive)

(f). SEBAM-

SEBAM-ar-u   (Intransitive)

Take (13f) as a representative instance. SEBAM-e-ru is transitive, meaning ‘to narrow down’; SEBAM-ar-u is intransitive, meaning ‘become narrow’. Crucially, the stem SEBAM- established the semantic interpretation (i.e. narrow) in the initial stage. The stem’s original meaning is retained by later added morphemes, either vt or vi. With this in place, we may assume that there is a semantic compositionality between the stem and the added morphemes. The category of the derived vt and vi is established after the merger. The derivation process is described in (14).

(14)

\[
\begin{array}{c}
\sqrt{\text{SEBAM-}} \\
-\text{e- TRAN.} / -\text{ar- INTR.}
\end{array}
\]

SEBAM-e-ru / SEBAM-ar-u

a. [[\sqrt{sebam} -e-ru] (vt: narrow down)]

b. [[\sqrt{sebam} -ar-u] (vi: become narrow)]

The stem SEBA- may also form an adjective, for example [[\sqrt{seba} -i-] (adj: narrow). Perhaps we may generalise the derivation of transitive verb, intransitive verb and adjective from the same stem in (15).

(15) Derivation of a transitive verb, intransitive verb and adjective from an adjective stem

\[
\begin{array}{c}
\sqrt{\text{ROOT}} \\
A[+ A] \\
\text{A}[-i-] \\
V [+ V] \\
\text{V}[-\text{e- TRAN. (vt)}] \\
\text{V}[-\text{ar- INTR. (vi)}]
\end{array}
\]
(15) brings us to the point that the later added morphemes (‘-i’, ‘-e-ru’ or ‘-ar-u’) determine the lexicon’s category, i.e. adjective, transitive verb, intransitive verb. This inspires us to contend that deriving a vt or vi from the same adjective stem is a manipulation of ‘word-derivation’.

3.2 Verb Derivation by Adding a Morpheme to a Stem

The second way of deriving a vt or a vi is to add a morpheme that indicates transitive/intransitive properties to a stem. Four variations are confirmed (Table 2).

Table 2. Verb derivation by adding a morpheme to a stem

<table>
<thead>
<tr>
<th>No.</th>
<th>Transitive</th>
<th>Intransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a).</td>
<td>‘-e’-, ‘-ø-(-u)’</td>
<td>‘-ar’-</td>
</tr>
<tr>
<td>(b).</td>
<td>‘-ø-(-u)’</td>
<td>‘-e’-</td>
</tr>
<tr>
<td>(c).</td>
<td>‘-ø-(-u)’, ‘-os- (-osu)’, ‘-as-(-asu)’</td>
<td>‘-i’-</td>
</tr>
<tr>
<td>(d).</td>
<td>‘-as-(-asu)’, ‘-s- (-su)’</td>
<td>‘-e’-</td>
</tr>
</tbody>
</table>

In Table 2:

(I). The morphemes ‘-ø- (-u)’ and ‘-e-’ form transitive verbs; the morpheme ‘-ar-’ forms intransitive verbs.

(II). The morpheme ‘-ø-(-u)’ forms transitive verbs; the morpheme ‘-e-’ forms intransitive verbs.

(III). The morphemes ‘-ø-(-u)’, ‘-os-(-osu)’ and ‘-as-(-asu)’ form transitive verbs; the morpheme ‘-i-’ forms intransitive verbs.

(IV). The morphemes ‘-as-(-asu)’ and ‘-s- (-su)’ form transitive verbs; the morpheme ‘-e-’ forms intransitive verbs.

The first morpheme pair, i.e. ‘-ø- (-u)’or ‘-e-’ / ‘-ar-’, is extremely productive. Illustrations are provided in (16).

<table>
<thead>
<tr>
<th>Transitive</th>
<th>Intransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>(16) a. 決める //kim-e-ru//</td>
<td>決まる //kim-ar-u//</td>
</tr>
<tr>
<td>b. 集める //atsum-e-ru//</td>
<td>集まる //atsum-ar-u//</td>
</tr>
<tr>
<td>c. 掛ける //kak-e-ru//</td>
<td>掛かる //kak-ar-u//</td>
</tr>
<tr>
<td>d. 植える //u-e-ru//</td>
<td>植わる //uw-ar-u//</td>
</tr>
<tr>
<td>e. 詰める //tsum-e-ru//</td>
<td>詰まる //tsum-ar-u//</td>
</tr>
<tr>
<td>f. まぜる //maz-e-ru//</td>
<td>まざる //maz-ar-u//</td>
</tr>
<tr>
<td>g. いためる //itam-e-ru//</td>
<td>いたまる //itam-ar-u//</td>
</tr>
<tr>
<td>h. 儲ける //mouk-e-ru//</td>
<td>儲かる //mouk-ar-u//</td>
</tr>
<tr>
<td>i. 助ける //tasuk-e-ru//</td>
<td>助かる //tasuk-ar-u//</td>
</tr>
<tr>
<td>g. 上げる //ag-e-ru//</td>
<td>上がる //ag-ar-u//</td>
</tr>
</tbody>
</table>
If we take (16g), i.e. 上げる ag-e-ru / 上がる ag-ar-u, as an instance, we have the following derivation process.

(17) **Derivation process** (上げる ag-e-ru / 上がる ag-ar-u)

TRAN. INTR.

\[ \sqrt{ag-} \quad \text{TRAN.} / \quad \text{INTR.} \]

AG-e-ru \quad AG-ar-u

The second morpheme pair in Table 2, ‘-ø-(-u)’/‘-e-’, is also productive. Illustrations are given in (18).

<table>
<thead>
<tr>
<th>Transitive</th>
<th>Intransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 切る kir-ø-(r)u//</td>
<td>切れる kir-e-ru//</td>
</tr>
<tr>
<td>b. 折る or-ø-(r)u//</td>
<td>折れる or-e-ru//</td>
</tr>
<tr>
<td>c. 割る war-ø-(r)u//</td>
<td>割れる war-e-ru//</td>
</tr>
<tr>
<td>d. 破る yabur-ø-(r)u//</td>
<td>破れる yabur-e-ru//</td>
</tr>
<tr>
<td>e. 解く hodok-ø-(r)u//</td>
<td>解ける hodok-e-ru//</td>
</tr>
<tr>
<td>f. 取る tor-ø-(r)u//</td>
<td>取れる tor-e-ru//</td>
</tr>
<tr>
<td>g. 抜ぐ nuk-ø-(r)u//</td>
<td>抜ける nuk-e-ru//</td>
</tr>
<tr>
<td>h. 砕ぐ kudak-ø-(r)u//</td>
<td>砕れる kudak-e-ru//</td>
</tr>
<tr>
<td>i. 煮る nir-ø-(r)u//</td>
<td>煮える ni-e-ru//</td>
</tr>
</tbody>
</table>

(19) presents the derivation process of above verb pairs, taking (18i), 煮る nir-ø-(r)u / 煮える ni-e-ru, as a representative.

(19) **Derivation process** (煮る nir-ø-(r)u / 煮える ni-e-ru)

TRAN. INTR.

\[ \sqrt{ag-} \quad \text{TRAN.} / \quad \text{INTR.} \]

NIR-ø-u \quad NI-e-ru

The third morpheme pair, ‘-ø-(-u)’ or ‘-os- (-osu)’/‘-as-(-asu)’/‘-i-’, is less productive. Illustrations are provided in (20).

<table>
<thead>
<tr>
<th>Transitive</th>
<th>Intransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 起こす ok-o-su//</td>
<td>起きる ok-i-ru//</td>
</tr>
<tr>
<td>b. 落とす ot-o-su//</td>
<td>落ちる och-i-ru//</td>
</tr>
</tbody>
</table>

(21) describes the formation process of vt/vi in (20).

(21) **Derivation process** (起きる ok-o-su / 起きる ok-i-ru)
The fourth morpheme pair, ‘-as-(asu)’ or ‘-s- (su)’/ ‘-e-’, can be illustrated as in (22).

(22) a. 返す //ka-e-su//
    b. 消す //k-e-su//
    c. 汚す //yog-o-su//
    d. 出す //d-a-su//

The formation of verbs in (22) is shown in (23).

(23) Derivation process (cf. 19a: 返す ka-e-su / 返る ka-e-ru)

The four variations of ‘adding a morpheme that indicates vt/vi properties to a stem’ operate similarly, i.e. vt/vi pairs are formed by merging a root with functional morphemes. Syntactically, √Root and the morphemes added later form the new lexicon’s category. Semantically, √Root and the morphemes added later are not assigned to a compositional relation. This touches on the idea that there is no ‘base’ vt or ‘base’ vi; all vt and vi are ‘root-derived’. This is different from the pre-existing viewpoint that intransitive verbs are derived from transitive verbs via two devices, i.e. decausativisation or anticausativisation (cf. Okutsu 1967; Kageyama 1996).

To summarise Section 3, there are two ways of deriving a vt and a vi: by deriving from the same adjective stem, or by adding a morpheme that indicates vt/vi properties to a stem. The derivation features of the two types are summarised in Table 3.

Table 3. Derivation of a transitive or an intransitive verb

<table>
<thead>
<tr>
<th>Derivation of vt / vi</th>
<th>Semantic compositionality</th>
<th>Syntactic category</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i). Derived from the same adjective stem</td>
<td>Yes</td>
<td>Established after the merger</td>
</tr>
<tr>
<td>(ii). Morpheme added indicating vt/vi properties to a stem</td>
<td>No</td>
<td>Established after the merger</td>
</tr>
</tbody>
</table>

It is proposed that deriving a vt or a vi from the same adjective stem is ‘word-derivation’.
Deriving a *vt* or a *vi* by adding a morpheme that indicates *vt/vi* properties to a stem is root-derivation.

4. Verb Derivation and Loanwords

Having drawn a picture of deriving a transitive/intransitive verb pair, this section analyses the derivation of a verb from loanwords and Japanese lexicons. Intriguingly, re-shaping a loanword can be arbitrary: see (24).

(24) **Re-shaping a loanword**

(a) Foreign lexicons are borrowed purely for their phonetic value.

<table>
<thead>
<tr>
<th>Loan words</th>
<th>Original lexicon</th>
<th>Part of speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>クラス</td>
<td>class</td>
<td>noun → noun</td>
</tr>
<tr>
<td>天ぷら</td>
<td>temperar (Portuguese)</td>
<td>verb → noun</td>
</tr>
</tbody>
</table>

(b) Foreign lexicons are combined with Japanese; no category transition.

<table>
<thead>
<tr>
<th>Loan words</th>
<th>Original lexicon</th>
<th>Part of speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>消しゴム</td>
<td>消す + gum</td>
<td>noun → noun</td>
</tr>
<tr>
<td>省エネ</td>
<td>省く + Energie (German)</td>
<td>noun → noun</td>
</tr>
</tbody>
</table>

(c) Foreign lexicons are abbreviated; no category transition.

<table>
<thead>
<tr>
<th>Loan words</th>
<th>Original lexicon</th>
<th>Part of speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>ハイテク</td>
<td>high + technology</td>
<td>noun → noun</td>
</tr>
<tr>
<td>リモコン</td>
<td>remote + controller</td>
<td>noun → noun</td>
</tr>
</tbody>
</table>

(d) Foreign lexicons are localised.

Two ways of localising a loanword are observed:

(a). adjective/adverb-lisation via 「＋な」 or 「＋に」

(b). ‘do’ support, i.e. 「loan word ＋する」

(25) Foreign lexicons are localised; no category transition

<table>
<thead>
<tr>
<th>Loan words</th>
<th>Composition</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a). リアルな; リアルに</td>
<td>real + な/に</td>
<td>not changed</td>
</tr>
<tr>
<td>(b). ドライブする</td>
<td>drive + する</td>
<td>not changed</td>
</tr>
<tr>
<td></td>
<td>kiss + する</td>
<td>not changed</td>
</tr>
<tr>
<td></td>
<td>knock + する</td>
<td>not changed</td>
</tr>
</tbody>
</table>

Although the above loanwords are reformed, their categories do not change. The following reshaping (26) displays a different picture.
(26) Reshaping a loanword; category changed

<table>
<thead>
<tr>
<th>New lexicon</th>
<th>Composition</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a). エレベる</td>
<td>エレベーター + る</td>
<td>noun → verb</td>
</tr>
<tr>
<td>(b). チンする</td>
<td>チン + する</td>
<td>mimetic → verb</td>
</tr>
<tr>
<td>(c). メモる</td>
<td>メモ + る</td>
<td>noun → verb</td>
</tr>
<tr>
<td>(d). トラブルる</td>
<td>トラブル + る</td>
<td>noun → verb</td>
</tr>
<tr>
<td>(e). ANA る</td>
<td>ANA + る</td>
<td>letter → verb</td>
</tr>
</tbody>
</table>

Loanwords are no longer merely borrowed, but derived into new lexical categories, for example from noun to verb (エレベる ‘go up/ down by elevator’) or from mimetic word to verb (チンする ‘heat’ [cf. チン refers to the sound made when using a microwave oven]). There are two verbalisers, ‘る-support’ and ‘する-support’ (‘る-support’ is preferred). This study took a random 200 tokens of verbs from the corpus and found the following transitions.

(27) Category transition (verbalising loanwords)

<table>
<thead>
<tr>
<th>The category of the base</th>
<th>The category of the new lexicon</th>
<th>Percentage of tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun</td>
<td>verb</td>
<td>94%</td>
</tr>
<tr>
<td>Mimetics</td>
<td>verb</td>
<td>1%</td>
</tr>
<tr>
<td>Adjective</td>
<td>verb</td>
<td>3%</td>
</tr>
<tr>
<td>Letter3</td>
<td>verb</td>
<td>2%</td>
</tr>
</tbody>
</table>

We now examine the derivation process of reforming a loanword. Take (26a) エレベる ereberu ‘go up/down by elevator’ for instance. The procedure is as follows. First, エレベーター is abbreviated into a three-syllable lexicon, エレベ. Second, the abbreviated lexicon エレベ is verbalised by combining it with the verbaliser る. The process is described in (28).

(28)

```
V
 /\N
 /
√エレベ V [+ V]
-RU (る)
```

3 Letter is hardly an independent category; rather, it belongs to noun group. In the database, we found ANA → ANA る; CHANGE → CHANGE る; ASKA → ASKA る, etc.
Apart from loanwords, verbalising takes place on Japanese-originated lexicons. Illustrations are provided in (29).

(29) Verbalising Japanese-originated lexicons

<table>
<thead>
<tr>
<th>New lexicon</th>
<th>Composition</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a). 神ってる ‘like a God’</td>
<td>神＋ってる</td>
<td>noun → verb</td>
</tr>
<tr>
<td>(b). もふる ‘cuddly’</td>
<td>もふもふ</td>
<td>mimetics → verb</td>
</tr>
<tr>
<td>(c). 事故る ‘have an accident’</td>
<td>事故＋る</td>
<td>noun → verb</td>
</tr>
<tr>
<td>(d). 皮肉る ‘mock’</td>
<td>皮肉＋る</td>
<td>noun → verb</td>
</tr>
<tr>
<td>(e). 駄弁る ‘buy a station bento’</td>
<td>駄弁＋る</td>
<td>noun → verb</td>
</tr>
</tbody>
</table>

The category of the base is not limited to nouns, but extends to mimetics and phrases. The category transition, like the loanwords, varies. It can go from noun to verb (神ってる ‘being like a God’), or from mimetic word to verb (もふる ‘cuddly’). Again, this study took at random 200 tokens of verbs from the corpus and the results are summarised in (30).

(30) Category transition (verbalising Japanese-originated lexicon)

<table>
<thead>
<tr>
<th>The category of the base</th>
<th>The category of the new lexicon</th>
<th>Percentage of tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun</td>
<td>verb</td>
<td>94%</td>
</tr>
<tr>
<td>Mimetics</td>
<td>verb</td>
<td>6%</td>
</tr>
</tbody>
</table>

The transitivity of the new lexicon depends on the verbaliser. If the verbaliser is aspect ‘ってる’, the derived verb is unergative. If the verbaliser is ‘る’, the derived verb is transitive.

As in the verbalisation of a loanword, the derivation process consists of two stages: abbreviation and combination. Take (29b) もふる mofuru ‘cuddly’ for instance. First, the mimetic word もふもふ is abbreviated into a two-syllable lexicon, もふ. Second, the abbreviated lexicon is verbalised by combining it with the verbaliser る. The process is shown in (31).

(31)

By pulling these strands together, we arrive at the conclusion that the verbalisation of loanwords and Japanese lexicons operate at a syntactic level. Below is a model of forming an adjective and a verb (32).
Semantically, √Root and the transitive verbalisers ‘する’/‘る’ and the intransitive verbaliser ‘てる’ are not related. Syntactically, the new lexicon’s category is established by √Root and verbalisers. One conclusion that can be drawn is that verbs from loanwords and Japanese-originated lexicons are ‘root-derived’.

5. Conclusion

This paper has discussed three ways of deriving a transitive or an intransitive verb, i.e.

(a). Intransitive and transitive verbs derived from the same adjective stem;

(b). Deriving vt or vi by adding a morpheme that indicates vt/vi properties to a stem; and

(c). Verbalising loanwords/Japanese-originated lexicons into verbs.

The findings can be summarised as follows.

(I). In terms of deriving vt and vi from the same adjective stem, there is a semantic compositionality between the stem and the later added morphemes. Syntactically, the category of the derived vt and vi is established after the merger. A model is given as follows.

\[
\begin{array}{c}
\sqrt{\text{ROOT}} \\
A, M, N [+A, +M, +N] \\
-\text{morpheme} \\
\end{array}
\quad
\begin{array}{c}
\sqrt{\text{ROOT}} \\
A[+A] \\
-\text{morpheme} \\
\end{array}
\quad
\begin{array}{c}
\sqrt{\text{ROOT}} \\
A[+A] \\
-\text{morpheme} \\
\end{array}
\]

(II). In terms of the second method of verb derivation (by adding a morpheme that indicates transitive/ intransitive properties to a stem), four pairs of vt/vi morphemes are confirmed:

‘-o- (-u)’; ‘-e-’/‘-ar-’

‘-o-(-u)’ / ‘-e-’
‘-ø-(-u)’; ‘-os-(-osu)’; ‘-as-(-asu)’ / ‘-i-’

‘-as-(-asu)’; ‘-s- (-su)’ / ‘-e-’

Despite these variations, vt/vi pairs are formed in exactly the same way (by merging a root with functional morphemes). Syntactically, √Root and morphemes added later combine to form the new lexicon’s category. Semantically, √Root and morphemes added later are not assigned to a compositional relation. This confirms the idea that there is no ‘base’ vt or ‘base’ vi; all vt and vi are ‘root-derived’. A model is provided below.

TRAN. INTR.

√ROOT

TRAN. / INTR.

‘-ø- (-u)’; ‘-e-’ / ‘-ar-’
‘-ø-(-u)’ / ‘-e-’
‘-as-(-asu)’; ‘-s- (-su)’ / ‘-e-’
‘-ø-(-u); ‘-os-(-osu)’; ‘-as-(-asu)’ / ‘-i-’

(III). A third way to form a verb is via verbalisation, which contains two variations:

a. verbalising a gairaigo; and

b. verbalising a Japanese-originated lexicon

Three verbalisers, する, する and aspect ている, participate in the verbalisation. The category of the base is not limited to nouns, but extends to mimetics and phrases. The transitivity of the new lexicon depends on the verbaliser. If the verbaliser is aspect ている, the derived verb is unergative. If the verbaliser is する or する, the derived verb is transitive. Crucially, verbalisation of loanwords and Japanese lexicons are operated at a syntactic level. Semantically, √Root and the transitive verbalisers する/する and the intransitive verbaliser ている are not related. Syntactically, the new lexicon’s category is established by √Root and verbalisers. A conclusion one may draw is that verbs from loanwords and Japanese-originated lexicons are ‘root-derived’. Below is a model of forming an adjective and a verb.

V

any category (A, M, N)

V

√ROOT

A, M, N [+A, +M, +N] [+V] TRAN. [+ASPECT] INTR.

-morpheme -RU (る) / -SURU (する) っている

The features of the three derivation methods are summarised in Table 4.
Table 4. Features of the three derivation methods

<table>
<thead>
<tr>
<th>Derivation</th>
<th>Semantic compositionality</th>
<th>Syntactic category</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i). Derived from the same adjective stem</td>
<td>Yes</td>
<td>Formed by √Root + added morphemes</td>
</tr>
<tr>
<td>(ii). Morpheme added that indicates vt/vi</td>
<td>No</td>
<td>Formed by √Root + added morphemes</td>
</tr>
<tr>
<td>properties to a stem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii). Loanwords and Japanese lexicons added</td>
<td>No</td>
<td>Formed by √Root + added morphemes</td>
</tr>
</tbody>
</table>

A proposal to treat the variations is put forward: there is no ‘base’ transitive or ‘base’ intransitive verb. Japanese verb derivation is a completely syntactic operation. The derivations split into two paths: the process by which vt and vi derive from the same adjective stem is a case of ‘word-derivation’, and the process by which a verb is derived by adding a morpheme that indicates vt or vi properties to a stem and verbalising a loanword or a Japanese-originated lexicon is a manipulation of ‘root-derivation’.

It is hoped that the Japanese data may help to clarify the distinctions between root-derived formation and word-derived formation.

References


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