

# Affixes' Selections of Verbal Stems/Forms

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## Abstract

Assuming that some lexemes may be associated with more than one stem (Bonami and Boyé 2006), a phenomenon is provided on which stem form of verbal lexemes the past tense affix, the so-called ‘non-past’ tense affix and the conditional /(r)eba/ affix, the imperative affix, the negative affix and the voice morphemes selects, the shorter or the longer, in Yanagawa-Japanese dialect. Our analysis is that the verbal stems entertain default implicative relations in the stem dependency hierarchy of the dialect.

## 1 Phenomena on the stems of verbal lexemes in Yanagawa-Japanese dialect

### 1.1 Selections of stems of the verbal lexemes by affixes and voice morphemes:

Koga and Ono 2010 observe that both the so-called ‘non-past’ tense morpheme and the conditional /(r)eba/ select the shorter stem of each verbal lexeme in Yanagawa-Japanese dialect, as given in the second left most column of Table 1.

stems	‘-Non-past/if’	‘-Past’	‘-Imper’	‘-Not’	‘-cause’
<b>n(e)</b> ‘sleep’	<b>*ne-ru/*ne-reba</b> <b>n-u-ru/n-u-reba</b>	<b>ne-ta</b> <b>*n-ita</b>	<b>ne-ro</b> <b>*n-e</b>	<b>ne-N</b> <b>*n-aN</b>	<b>ne-sas(e)</b> <b>*n-as(e)</b>
<b>tab(e)</b> ‘eat’	<b>*tabe-ru/*tabe-reba</b> <b>tab-u-ru/tab-u-reba</b>	<b>tabe-ta</b> <b>*tab-ita</b>	<b>tabe-ro</b> <b>*tab-e</b>	<b>tabe-N</b> <b>*tab-aN</b>	<b>tabe-sas(e)</b> <b>*tab-as(e)</b>
<b>k(o)</b> ‘come’	<b>*ko-ru/*ko-reba</b> <b>k-u-ru/k-u-reba</b>	<b>*ko-ta</b> <b>k-ita</b>	<b>*ko-ro</b> <b>k-e</b>	<b>ko-N</b> <b>*k-aN</b>	<b>ko-sase</b> <b>*k-ase</b>
<b>s(e)</b> ‘do’	<b>*se-ru/*se-reba</b> <b>s-u-ru/s-u-reba</b>	<b>*se-ta</b> <b>s-ita</b>	<b>se-ro</b> <b>*s-e</b>	<b>se-N</b> <b>*s-aN</b>	<b>??se-sase</b> <b>s-ase</b>
<b>hanas</b> ‘talk’	<b>hanas-u/hanas-eba</b>	<b>hanas-ita</b>	<b>hanas-e</b>	<b>hanas-aN</b>	<b>hanas-ase</b>
<b>oki</b> ‘wake’	<b>oki-ru/oki-reba</b>	<b>oki-ta</b>	<b>oki-ro</b>	<b>oki-N</b>	<b>oki-sase</b>

Table 1: The verbal forms of the so-called standard vowel /e/-final base verbal lexemes and the strong base verbal lexemes in Yanagawa-Japanese dialect

It is assumed here along the line of studies, e.g., Bonami and Boyé’s 2006, that some lexemes may be associated with more than one stem. In particular, each of the so-called standard ‘vowel /e/ final’ base verbal lexemes is assumed to be associated with two stems in Yanagawa-Japanese dialect: the vowel /e/ final stem and one the same as the one except for the last phoneme /e/ absent, for example, /ne/ ‘sleep’ and /n/ ‘sleep’ for the verbal lexeme /n(e)/ ‘sleep’ in the dialect.<sup>1</sup> The strong /k/ and /s/ lexemes are associated with two stems, /k/ and /ko/ for the former and /s/ and /se/ for the latter respectively in the dialect. See Koga and Ono’s 2010 arguments for the analysis of the intermediary /u/, as in the first occurrence of /u/ of /n-u-ru/ ‘sleep [Non-past]’, as another occurrence of the tense expletive and against analyses of the intermediary /u/

<sup>1</sup>The so-called standard ‘vowel /e/ final base’ verbal lexemes will be defined as the verbal lexemes whose basic stem ends with the vowel /e/ in our analysis to be proposed later.

1) as the phonological insertion, 2) as a part of the stems and 3) as the phonological alternation from /e/ to /u/.

Furthermore, on the plural stem assumption, another phenomenon is observed on which stem each of 1) the past tense affix /*(i)ta*/, 2) the imperative affix /*e ~ ro*/, 3) the negative affix /*(a)N*/ and 4) the voice verbal morphemes (e.g., the causative verbal morpheme /*(s)as(e)*/) selects between the longer and the shorter if there are two, as given in the third to sixth columns of Table 1.<sup>2</sup> The past tense affix selects the longer ones for the so-called standard vowel /e/ final base verbal lexemes and the shorter ones for the strong /k/ and /s/ base verbal lexemes. The imperative affix selects the longer ones for the so-called standard vowel /e/ final base verbal lexemes and the strong /s/ base verbal lexemes and the shorter one for the strong /k/ base verbal lexeme. The negative affix selects the longer ones for all the verbal lexemes as well as the voice verbal morphemes do. Here we regard *?/se-sas(e)* ‘do-cause’ as grammatical although it sounds a little bit odd, as in */si-taka koto ba {?se-saseta/s-asetu}/* [do-want events Acc do-let] ‘(She) let (him) do what he wanted to do’.<sup>3</sup>

**1.2 The stems for the past affix as the base:** We claim that the stems for the past affix are the base.<sup>4</sup> The present participle forms of the verbal lexemes, which are the second most prevalent verbal forms except for the stems, can derive from the stems for the past affix more simply than those for any other affixes and morphemes that take the stems of verbal lexemes as a complement. The lexical rule deriving the present participle forms from the stems for the past affix can be formulated as Lexical Rule (1) or similar to that.

- (1) If the past stem of a verbal lexeme is consonant-final, then its present participle form is the same as the stem except for /i/ added to the final, as in */hanas-i* ‘talk-Prp’, */k-i* ‘come-Prp’ and */s-i* ‘do-Prp’. If it is vowel-final, then its present participle form is the same as that, as in */tabe* ‘eat [Prp]’ and */oki* ‘wake [Prp]’.<sup>5</sup>

The desiderative adjectival morpheme */taka* ‘want [Non-past]’ takes the present participle forms of verb in Japanese. If the ‘non-past’ stems were used to derive their present participle forms, then the present participles of the ‘standard vowel /e/-final’ base verbs would have the vowel /i/ at the ends since their ‘non-past’ forms are consonant-final like */tab* ‘eat’. Actually, this is not the case, as in the ungrammaticality of (2a) in contrast with the grammatical one (2b).

- (2) a. \* *tab-i taka.* [Yanagawa-Japanese]  
eat-Prp want [Non-past]  
b. *tabe taka.*  
eat [Prp] want [Non-past] [Yanagawa-Japanese]  
‘(He) wants to eat (it).’

<sup>2</sup>Each of the other affixes or morphemes that select the stems of the verbal lexemes patterns in one way of these four.

<sup>3</sup>To regard it as grammatical is supported by the fact that the voice forms of the verbal noun, consisting of one Chinese character and underlyingly ending with /tsu/ like */netsu* ‘heat’, plus the light verb /s/ are like */nes-se-sas(e)* [heat-do-cause] ‘cause (him) to heat (it)’ in contrast with *\*/nes-s-as(e)* [heat-do-cause].

<sup>4</sup>The stems selected by the past affix /*(i)ta*/ are exactly the same as those selected by the gerundive affix /*(i)te*/.

<sup>5</sup>This means that the present participle morpheme is /*(i)*/ on the assumption that the boundaries of affixation are either C#V or V#C, but NOT C#C or V#V.

If either the imperative stems, or the negative stems, or the voice stems were used to derive their present participle forms, then the present participle forms of strong base verbal lexemes would have been respectively /se/ ‘do’ or /ko/ ‘come’. Actually, neither of these is true, as in the ungrammaticality of (3a) in contrast with the grammatical one (3b) and as in the ungrammaticality of (3c) in contrast with the grammatical one (3d).

- (3) a. \*se taka.  
do [Prp] want [Non-past]
- b. s-i taka.  
do-Prp want [non-past]  
‘(He) wants to do (it).’
- c. \*ko taka.  
come [Prp] want [Non-past]
- d. k-i taka.  
come-Prp want [Non-past]  
‘(He) wants to come (here).’

## 2 An analysis along the line of researches, e.g., Bonami and Boyé’s 2006

**2.1 Stem dependency:** Suppose a verbal lexeme, possibly an apparently irregular verbal lexeme, and an affix or form that selects its stem form are given. Here if a hierarchical structure among the stem forms grouped under stem-selecting affixes or forms are assumed, then its stem form will be the same as that for the affix at the immediately higher node of the stem dependency hierarchy unless otherwise specified. We assume that there are five groups, or five stem slots, –1) a stem slot of the stem forms, e.g., for the past affix, 2) that, e.g., for the tense expletive, 3) that, e.g., for the imperative affix, 4) that, e.g., for the negative affix, and 5) that, e.g., for the voice affixes—in Yanagawa-Japanese dialect, and those stem slots form a hierarchical structure with the stem slot FOR PAST at the top node and the rest is organized as that as in Figure 1.

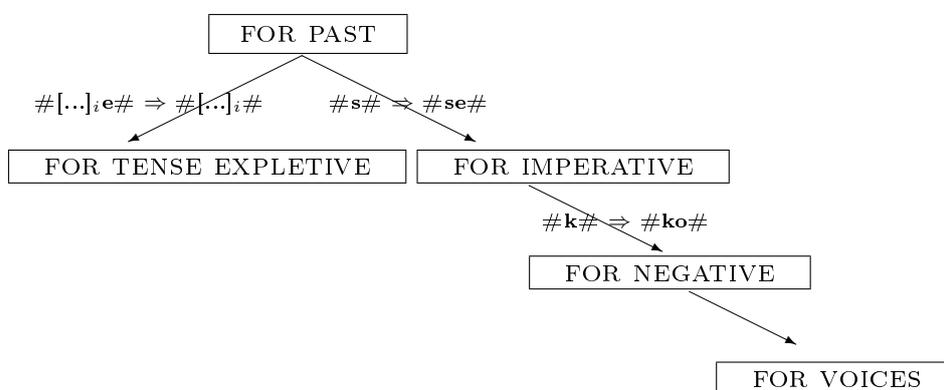


Figure 1: The stem inheritance for Yanagawa-Japanese dialect

The default implicative rule  $x \Rightarrow y$  from stem slot A to stem slot B in the hierarchical structure indicates that if a stem in the slot A satisfies x, then the stem undergoes the replacement of x with y.<sup>6</sup> For example, for the verbal lexeme /tab(e)/ ‘eat’, of which the

<sup>6</sup>The symbol # in the figure indicates a morpheme boundary.

stem form selected by the past affix is /tabe/, its stem for the tense expletive is /tab/ since the stem form for the past affix ends with /e/. Its stem for the imperative affix is /tabe/ since it is not #s#, and its stem for the negative affix is /tabe/ since it is not #k#, and its stem form for the causative affixes is /tabe/. The assumed stem dependency hierarchy is independently motivated since the deeper cognitively is the function of the affix in sentences, the stems for the affix will be longer. My speculation is that the deeper cognitively is the function of the affix in sentences, the more perceptible the stems for the affix need to be.

**2.2 Formalizations:** The stem dependency articulated in the last section will be formalized in this section.

**2.2.1 Stem forms of verbal lexemes with two stems:** Specifically in Yanagawa-Japanese dialect, for the strong base verbs and the so-called ‘vowel /e/-final’ base verbs, each verbal lexeme is associated two stem forms: **the basic stem form and the other stem form which is the same as the basic one except for either 1) with the final vowel absent or 2) with a particular vowel occurring at the final, specifically /o/ for the verbal lexeme /k(o)/ ‘come’ and /e/ for the verbal lexeme /s(e)/ ‘do’.** The basic stem forms are those selected by the past affix, or /(i)ta/, (as well as by the gerundive affix, or /(i)te/), as a motivation for that discussed in the last section.<sup>7</sup> Each stem form of the verbal lexemes with two stem forms is analyzed as having a morphological feature of STEMS, consisting of two feature specifications SFORM and LENGTH regarding its ‘derivation’ and its length, as exemplified by /ne/ in Figure 2 and /n/ in Figure 3 for the verbal lexeme /n(e)/ ‘sleep’.

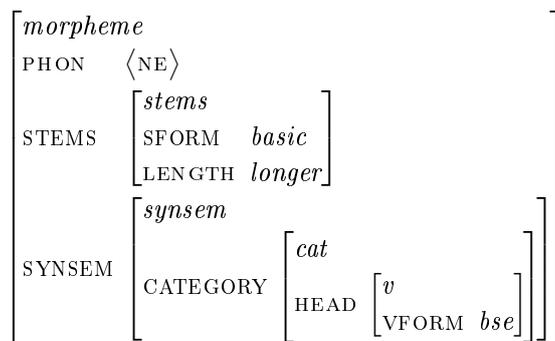


Figure 2: The stem form /ne/ of the verbal lexeme /n(e)/ ‘sleep’

Note that the morphological feature specification, [STEMS ...], is independent of its phonological features and its features of syntax and semantics. The value of the SFORM feature indicates whether it is the basic form, *basic*, or the form adjusted with a vowel from the basic form, *vwl\_adjstd*, and the value of the LENGTH feature indicates whether it is either the longer or the shorter.

**2.2.2 Affixes and morphemes that select the stem forms of verbal lexemes:** Differently from stem slots for European languages like in Bonami and Boyé’s 2006 analysis,

<sup>7</sup>We could assume a lexical rule associating the /e/-final basic stem with the same as the basic one except for the final vowel /e/ absent. Another lexical rule adds a vowel either /o/ or /e/ at the final to the one consonant stems /k/ ‘come’ and /s/ ‘do’ in the dialect. In Old Japanese, some of the verbal lexemes ending with the vowel /i/ like /oki/ ‘get up’ also had the final /i/ absent as in /ok#u#ru/ ‘get up [Non-past]’. We leave this formalization for a future research.

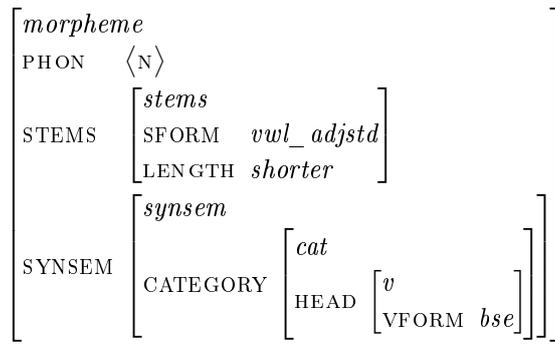


Figure 3: The stem form /n/ of the verbal lexeme /n(e)/ ‘sleep’

stems slots in Japanese-Yanagawa dialect are defined by those two feature specifications. For example, the stem slot for PAST groups the stem forms or verbal lexemes with STEMS [SFORM *basic*]. The past affix specifies its morphological complement as having not only the feature specifications of syntax and semantics but also the morphological specification of STEMS [SFORM *basic*], as formalized as in Figure 4.

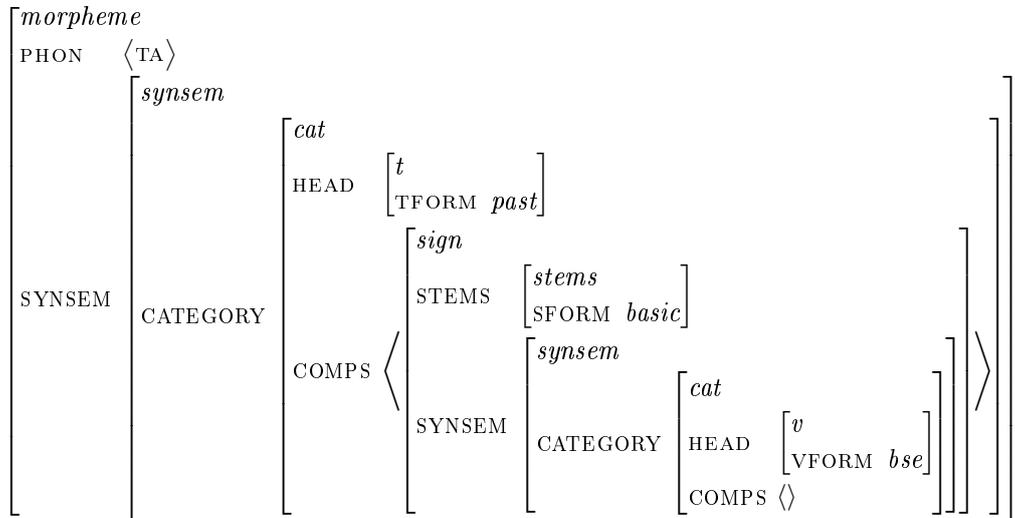


Figure 4: An analysis of the past affix /(i)ta/

Similarly, the stem forms selected by, for example, the tense expletive, are those with STEMS [LENGTH *shorter*]. Correspondingly, the tense expletive selects the verbal base forms with the morphological feature specification STEMS [LENGTH *shorter*]. The stem forms for the negative affix and voice affixes are those with STEMS [LENGTH *longer*]. The stem forms for the imperative affix are those with STEMS [LENGTH *longer*] except that the stem form of the verbal lexeme /k(o)/ ‘come’ with STEMS [LENGTH *shorter*]. Correspondingly, the imperative affix, the negative affix and the voice affixes select verbal base forms with their own morphological feature specifications.

### 3 Predictions and Implications

The formal proposal in sections 2.2.1 and 2.2.2 makes correct predictions regarding the selections of stems forms. For example, the past affix /(i)ta/ selects, for example, only /ne/ for the verbal lexeme /n(e)/ ‘sleep’, as in Figure 5.

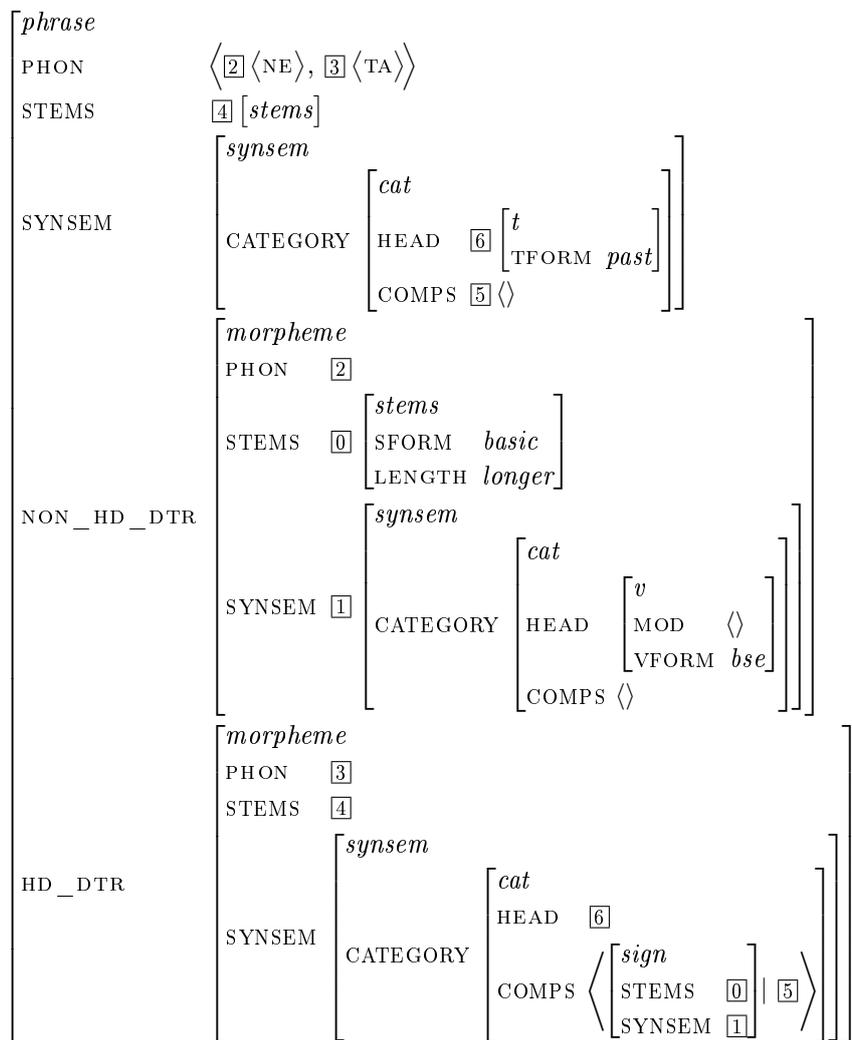


Figure 5: An analysis of the past form of the verbal lexeme /n(e)/ ‘sleep’

The past affix /ita/ cannot select the stem form /n/ for the verbal lexeme /n(e)/ ‘sleep’, as supported by the ungrammaticality of /n# ita/ ‘sleep-Past’, since the stem form /n/ has the morphological specification of STEMS [SFORM *vwl\_ adjstd*], i.e., not being the basic stem form.<sup>8</sup> The current study implies that the hierarchical structure of the stem slots may reflect a hierarchy of cognitive functions, and that stem slots may be defined by dimensions describing derivationhood and length for agglutinative languages.

## References

- Bonami, Olivier and Gilles Boyé (2006) Deriving inflectional irregularity. In Stefan Muller (ed.), *Proceedings of the HPSG '06 conference*, Stanford: CSLI Publications
- Koga, Hiroki and Koji Ono. (2010). Surface constraints on multiple occurrences of the tense expletive. *Proceedings of Workshop on Morphology and Formal Grammar*, 36-40, July 2010, Paris.

<sup>8</sup>The voice affixes prefer to select the shorter form for the verbal lexeme /s(e)/ ‘do’, as evidenced by the inappropriateness of /se#sas(e)/ and the grammaticality of /s#as(e)/. This fact may be relevant to the fact that the strong base verb /s(e)/ is the light verb syntactically combining with the verbal noun.