

Past Affix' Selection of Verbal Stems*

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Summary. Observing which stem form the affixes, the so-called 'non-past' affix (or the tense expletive), the past affix, the imperative affix, the negative affix and the voice affix-like verbs, select between the longer and the shorter in Japanese-Yanagawa dialect on the assumption that verbal lexemes may be associated with more than one stem, we present our finding that the verbal stems entertain default implicative relations in the stem dependency hierarchy. As two examples of affixes, we propose an implemented analysis of the past affix and an implementation of Koga and Ono's (2010) selectional analysis of the tense expletive, which both include the morphological specifications as well as syntactic and semantic ones.

Keywords: affixes, verbal stems, past affix, Yanagawa-Japanese dialect

1 Phenomenon

Koga and Ono (2010) observed that both the so-called 'non-past' tense morpheme and the conditional /*(r)eba*/ select the shorter stem of each verbal lexeme in Japanese-Yanagawa dialect on the assumption along the line of studies, e.g., Bonami and Boyé (2006), that **for the strong base verbal lexemes /*k(o)*/ 'come' and /*s(e)*/ 'do' and the so-called 'vowel /*e*-final' base verbal lexemes like /*n(e)*/ and /*tab(e)*/, each lexeme is associated with two stems in the dialect.** We provide a further phenomenon on **which stem each of the other affixes (or the past tense morpheme, the imperative morpheme, the voice morphemes and the negative morpheme) selects, the shorter or the longer**, as given in Table 1.

For example, 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 negative affix selects the longer ones for all the verbal lexemes as well as the voice verbal affixes *do*. Here we regard *?se-sas(e)* 'do-cause' as grammatical, sounding a little bit odd, as in (1a), as supported by the fact that the sequence *?nes-se-sas(e)* [heat-do-cause] 'cause (him) to heat (it)' is preferred to the shorter one **nes-s-as(e)*, if the verbal stem, consisting of one Chinese character ending with /*tsu*/ plus the light verb /*s/* 'do' like */netsu-s-u-ru/* (phonetically realizing as [ness-u-ru]), as in (1b).

- (1) a. *si-taka koto ba {?se-sase, s-ase}-ta*
do [prp]-want thing Acc {do [base]-cause, do [base]-cause}-Past
'(We) let (him) do things that (he) wants to do.'

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Table 1: The verbal forms of the vowel /e/-final base verbs and the strong base verbs in Yanagawa dialect

| stems | meaning | ‘-Non-past/if’ | ‘-Past’ | ‘Imper’ | ‘-not’ | ‘-cause’ |
|--------|---------|---------------------------------------------------------------|-----------------------------|-----------------------|-------------------|---------------------------|
| n(e) | ‘sleep’ | *ne-ru/*ne-reba *n-u/*n-eba n-u-ru/n-u-reba | ne-ta *n-ta *[nda] | ne-ro *n-e | ne-N *n-aN | ne-sas(e) *n-as(e) |
| tab(e) | ‘eat’ | *tabe-ru/*tabe-reba *tab-u/*tab-eba tab-u-ru/tab-u-reba | tabe-ta *tab-ta *[tanda] | tabe-ro *tab-e | tabe-N *tab-aN | tabe-sas(e) *tab-as(e) |
| oki | ‘wake’ | oki-ru/oki-reba | oki-ta | oki-ro | ?oki-N | oki-sas(e) |
| k(o) | ‘come’ | *ko-ru/*ko-reba *k-u/*k-eba k-u-ru/k-u-reba | *ko-ta k-ita | *ko-ro /k-e/ [ke:] | ko-N *k-aN | ko-sas(e) *k-as(e) |
| s(e) | ‘do’ | *se-ru/*se-reba *s-u/*s-eba s-u-ru/s-u-reba | *se-ta s-ita | se-ro *s-e | se-N *s-aN | ?se-sas(e) s-as(e) |
| yob | ‘call’ | yob-u/yob-eba | /yob-ta/ [yonda] | yob-e | yob-aN | yob-as(e) |
| kak | ‘write’ | kak-u/kak-eba | /kak-ita/ [kaita] | kak-e | kak-aN | kak-as(e) |
| hanas | ‘talk’ | hanas-u/hanas-eba | hanas-ita | hanas-e | hanas-aN | hanas-as(e) |

- b. {?[nes-se-sase-ta], *[ness-ase-ta] [fast speech]}
 {?/netsu-se-sase-ta/, */netsu-s-ase-ta/ [slow speech]}
 {heat [base]-cause-Past}
 ‘(We) let (him) heat it.’

See Koga and Ono (2010) for 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/ 1) as the phonological insertion, 2) as a part of the stems and 3) as the phonological alternation from /e/ to /u/. 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 proposal. (The voice affixes prefer to select the shorter form for the verbal lexeme /s(e)/ ‘do’, as supported by the appropriateness of /s-as(e)/ ‘do-cause’. This fact may be relevant to the fact that the strong base verb /s(e)/ ‘do’ is the light verb syntactically combining with the verbal noun, as in /benkyou s(e)/ ‘study’. We will leave this for a future research.)

2 Proposal

My proposal is as follows: **Each stem has a morphological feature of STEMS, consisting of two features: 1) SFORM and 2) LENGTH.** The SFORM specification indicates whether the stem is the basic form, *basic*, or the form adjusted with a vowel eliminated from or added to the basic form, *vwl_adjstd*. The LENGTH specification indicates whether the stem is the longer or the shorter. **For the so-called ‘vowel /e/-final’ base verbal lexemes, the longer are the basic ones and the shorter are the derived ones,** which are the same as the basic ones except with the final vowel /e/ absent. For example, you will see the analysis of /ne/ of the verbal lexeme /n(e)/ ‘sleep’ in the feature specification under NON_HD_DTR of Figure 4. The other stem /n/ is analyzed as having the same feature specifications as the basic one except for [PHON <n>] and [STEMS [SFORM *vwl_adjstd*] [LENGTH *shorter*]]. **For the strong base verbal lexemes, the shorter /k/ ‘come’ and /s/ ‘do’ are the basic ones and the longer are the derived ones, specifically the former with the vowel /o/ occurring at the final and the latter with the vowel /e/ occurring there.** We could assume a morphological rule associating basic stem forms to their vowel-adjusted

ones with the use of relevant thematic vowels added or with the final vowel absent, and yet leave it for a future research. We just stipulate the two stem forms for each verbal lexeme in our current proposal.

2.1 The verbal stem dependency for Yanagawa dialect

On the basic-and-derived plural stem assumption, if we look closer at the phenomenon of Table 1, a novel description will be found that the verbal stems entertain default implicative relations of such a stem dependency hierarchy as given in Figure 1.

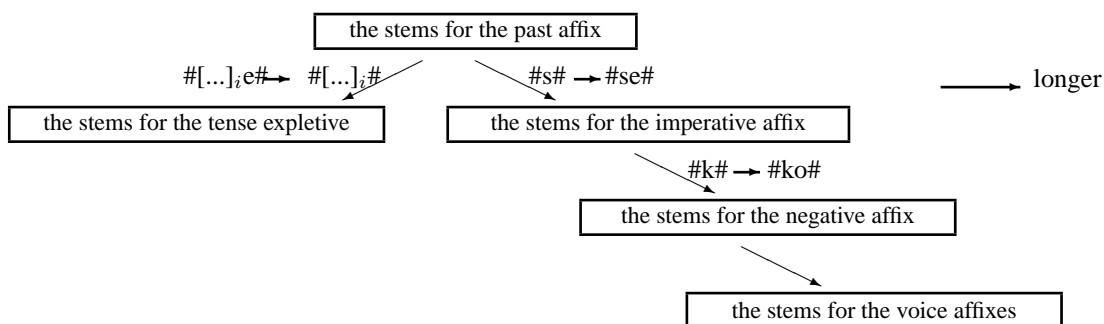


Figure 1: The verbal stem dependency of Japanese-Yanagawa dialect

For an affix given, the verbal stem to be selected is the same as that for the affix at the immediately higher node unless otherwise specified. The hierarchy has the stems for the past affix at the top node. Each local relation between the affix at a node and the affix at its immediately lower node can describe either 1) one between a relation (R) for the higher node and its argument (A) for the lower node like one between negation for R and causative for A, as in /ne-sase-N/ ([*Negative* [*Voice* [*Verb* ne] sase] N)) [sleep-cause-not] ‘do not let (him) sleep’, or 2) one between a marked element (M) for a higher node and its unmarked element (UM) for the lower node like one between the past tense for M and the tense expletive (or the identity function) for UM. Even for the apparent ‘irregularity’ of the strong base verbal lexeme /k(o)/ ‘come’, the hierarchy discovers its implicative relation, i.e., the fact that the shorter stem /k/ ‘come’, which is the basic stem, is selected by the past affix, the ‘non-past’ affix and the imperative affix, as in [kee] (underlyingly /k-e/) ‘Come’, whereas the longer stem /ko/ ‘come’ is selected by the negative affix and the voice affixes. Note that if an affix A describes a relation or an unmarked element and another affix B describes its argument of the relation or its marked element for the unmarked element, then the stems for the affix B will be equal to or longer than those for the affix A. My speculation for an agglutinative language like Japanese is that the more deeply embedded or marked the affix is, the longer or at least equally lengthened verbal stem will be selected in order for the audibility of the verbal stem.

The rules of the vowel /e/-deletion for the so-called vowel /e/-final base verbs and the vowel-/o/ and /e/ additions for the strong base verbs in the proposal are well motivated. Let’s assume that the imperative form /...-e~i~ro/ ‘...Imperative’ will be inappropriate without distinct audibility between the verbal stem and the affix in question, for example, if the verbal stem consists of one consonant and the POA’s of the consonant and the imperative affix /e~i~ro/ are not far away. On this assumption, the imperative form */s-e/ ‘do-Imperative’ will be correctly predicted not to have distinct audibility between its verbal stem and the affix and be inappropriate since the POA’s of the consonant /s/ and the vowel /e/ are close. On the other hand, the imperative form /k-e/ ‘come-Imperative’, phonetically realizing as [ke:], is correctly predicted to have distinct audibility since the POA’s of the consonant /k/ before the vowel /e/ are far away. Furthermore, we

can easily explain how the other stem derives from the one-consonant stem assuming that the thematic vowels (or the vowels added to produce stem forms) are /e/ and /o/ in the dialect (and also Japanese) as well as usual in the linguistics of India-European languages. As pointed out by Koji Ono (personal communication), **the thematic vowel close to the final consonant will be added at its final in the stem formations**. Thus, the verbal stem forms of the verb ‘come’ are /k/ and /ko/, and the verbal stem forms of the verb ‘do’ are /s/ and /se/.

Suppose the stems for the voice affixes, the most predicative verbal stems, were analyzed as the top of the hierarchy with the opposite hierarchy, as in Figure 2, as a unanimous reviewer pointed out, which will be rejected soon.

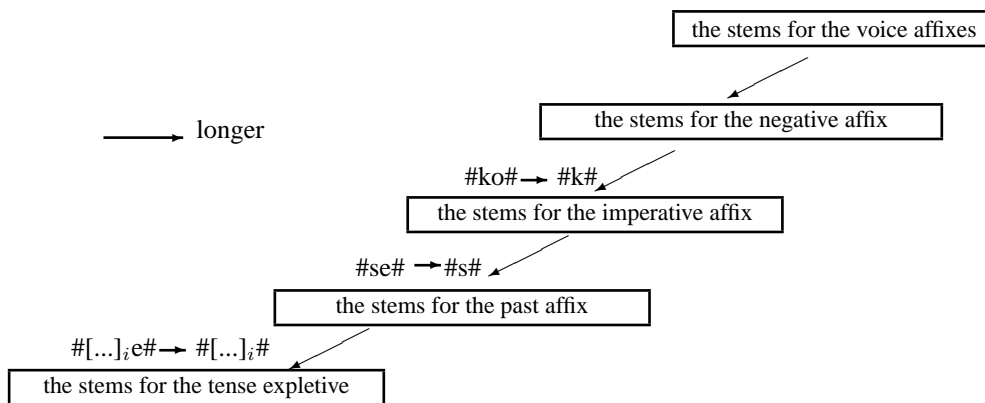


Figure 2: The verbal stem dependency of Japanese-Yanagawa dialect: undesirable hierarchy

This supposition means that all of the basic stem forms are the longer ones. Then, we will not be able to find any explanation for the contrast between the fact that */ko-i/ (*ko-ro/), including the basic stem form, was not preferred to /k-e/ [ke:], including the derived stem form, and the fact that /se-ro/ (*se-i/), including the basic stem form, was preferred to */s-e/ *[se:], including the derived stem form. (This undesirable contrast will not occur if the basic stems of the strong base verbs are analyzed as the shorter ones, /k/ and /s/, as assumed in our proposal.)

2.2 The past affix’ selection of verbal stems

The analyses of affixes’ selections may or may not be the same since the selections may vary from dialects to dialects. Take an example of the past affix /(i)ta/. Using the feature specifications of STEMS, the stem forms that the past affix selects will be those of [STEMS [SFORM *basic*] [LENGTH *longer*]] if the verbal stem is the so-called vowel /e/-final verb and those of [STEMS [SFORM *basic*] [LENGTH *shorter*]] if the verbal stem is either of the strong base verbs /k/ ‘come’ and /s/ ‘do’. **The largest common feature specifications of the stem forms that the past affix selects are [STEMS [SFORM *basic*]]. Since this is the same in standard and other dialects, the selection by the past affix should be stated in the morphological core component of grammar.** The past affix is thus analyzed as specifying its morphological complement as having the morphological specification of [STEMS [SFORM *basic*]] as well as the specifications in syntax and semantics, as formalized in Figure 3.¹

Here a constraint-based grammar that is only to some extent a lexicalist approach is assumed. For example, the past affix /ta/ can select /ne/ for the verbal lexeme /n(e)/ ‘sleep’, as in Figure 4, but NOT /n/, which has the morphological specification of [STEMS [SFORM *vwl_adjstd*]], as supported by the ungrammaticality of */n-ta/ or *[nda] ‘sleep-Past’.

¹ The feature COMPS in our proposal is the morphological one.

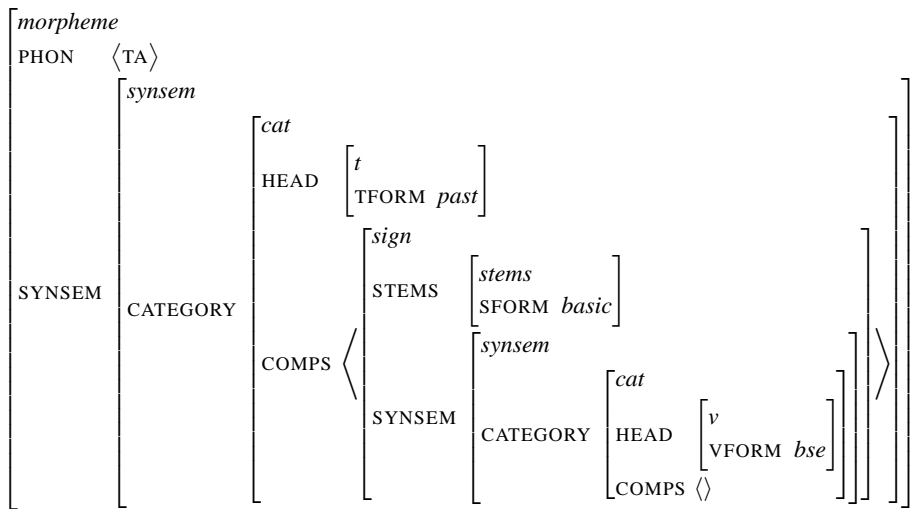


Figure 3: An analysis of the past affix /ta/

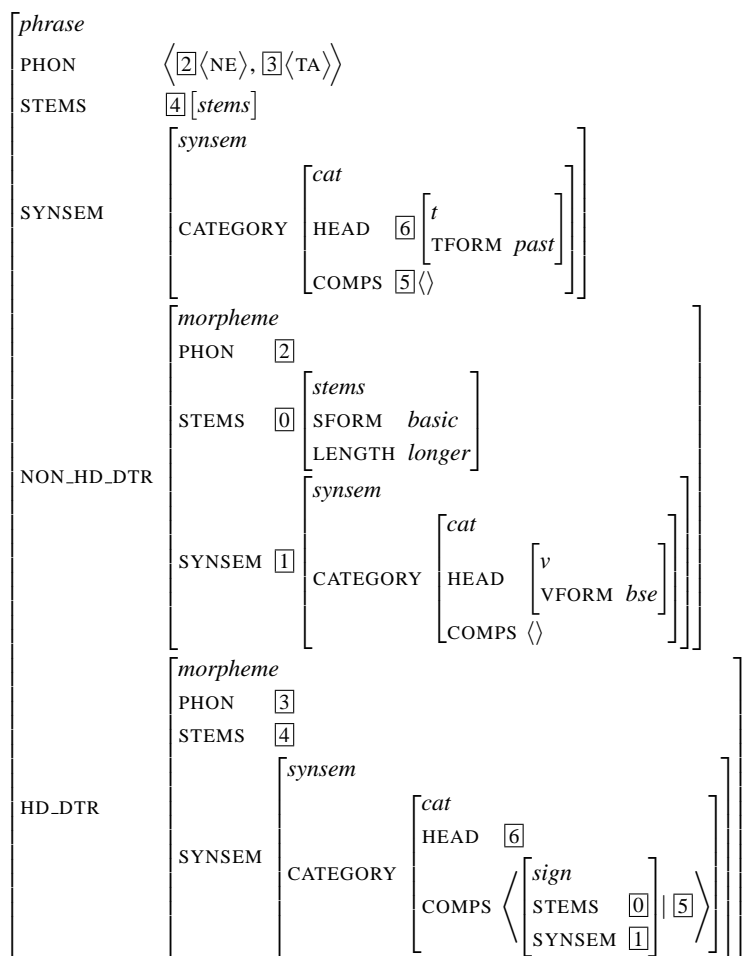


Figure 4: An analysis of the past form /ne-ta/ 'sleep-Past'

2.3 The tense expletive's selections of verbal stems or forms: An implementation of a part of Koga and Ono (2010)

Take another example of the tense expletive. There are dialectal or historical variations for the so-called ‘non-past’ verbal forms. The stem forms that the tense expletive selects will be those of [STEMS [SFORM *vwl_adjstd*] [LENGTH *shorter*]], as in /tab-u-ru/ ‘eat-Non-past-Non-past’ in the dialect, if the verbal stem is the so-called vowel /e/-final verb and those of [STEMS [SFORM *basic*] [LENGTH *shorter*]] if the verbal stem is either of the strong base verbs /k/ ‘come’ and /s/ ‘do’ in the dialect. **The largest common feature specifications of the stem forms that the tense expletive selects are [STEMS [SFORM *shorter*]]. This is the same in standard and other dialects**, and the selection should thus be stated in the core components of grammar.

Differently from that in the dialect and standard, the tense expletive forms in Old Japanese are the shorter stem form plus one occurrence of the tense expletive and the shorter stem form plus two occurrences of the tense expletive, as exemplified in /tab-u/ and /tab-u-ru/ for the example of /tab(e)/ ‘eat’. An Optimality Theoretic (OT)-constraint-based syntax framework (in which syntax is the ‘generator’ to map a set of candidates from a given meaning), including violable constraints outside of the core components, similarly to Lee 2004, will be in order. We can implement Koga and Ono’s (2010) selectional analysis of the tense expletive affix /(r)u/ as selecting a verbal base form with its stem [STEMS [LENGTH *shorter*]] or a tense [expletive] phrase in the core components of grammar, as formalized as in Figure 5.

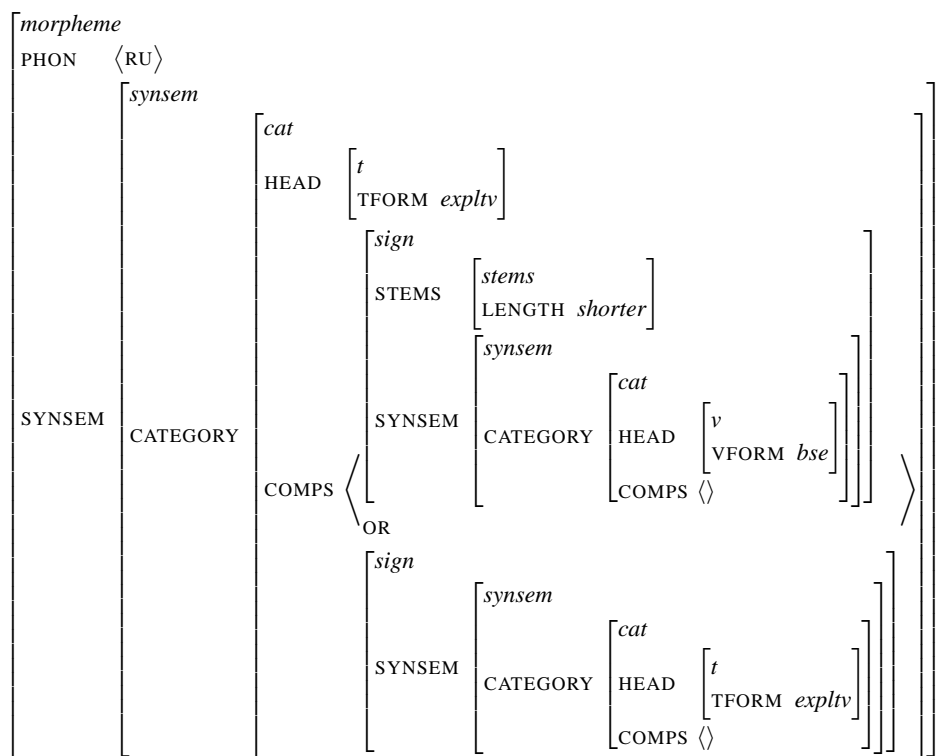


Figure 5: An analysis of /(r)u/ ‘Tense expletive’

We could assume a division of labor among morpho-syntax, phonology and semantics. Our implementation does not include semantics, and the implementation of the semantics is left for a future research. Since the meaning of the tense expletive is analyzed as being inherently the identity function, if the ‘non-past’ tense is cost-free, the meaning of the ‘non-past’ will be conventionally implicated (Koga and Ono, 2010).²

² The meaning of */n-u/ ‘sleep-Tense Expletive’, for example, would be $\lambda X \lambda e \lambda t [X(e)(t) \ \& \ t \in \text{Non} -$

The core components of grammar, then, allow candidates */tab# u/, as in Figure 6, and /tab# u# ru/, disallowing */tabe# ru/ since the stem /tabe/ is [STEMS [LENGTH longer]] for ‘eat [Non-past]’ in the dialect.

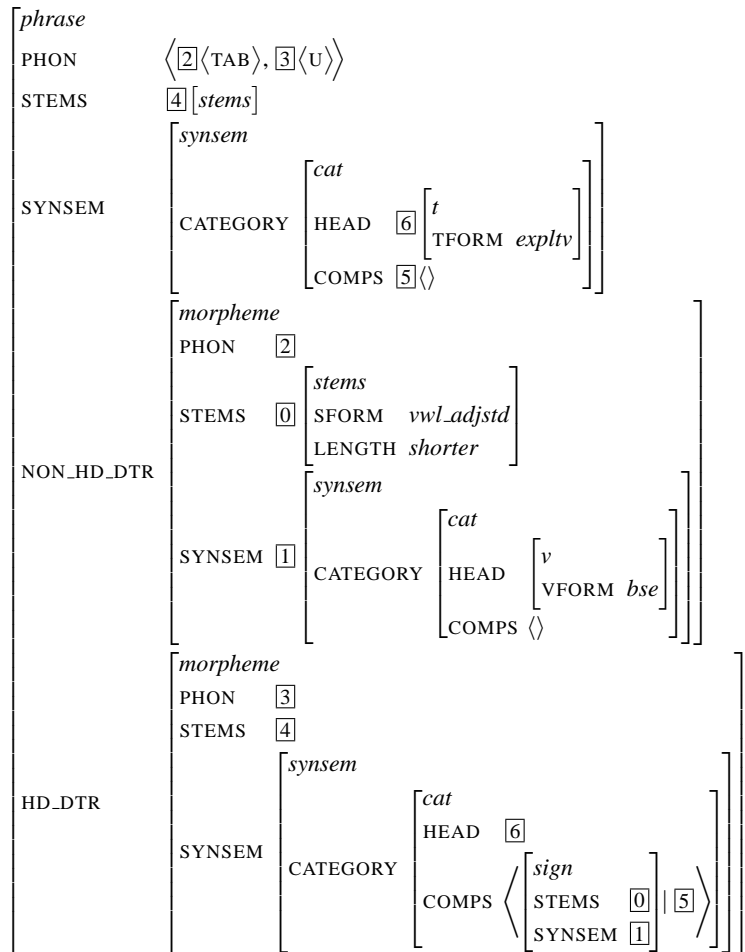


Figure 6: An analysis of */tab#u/ ‘eat-Tense expletive’

Grammatical but inappropriate candidates like /tab# u/ in Figure 6 in the dialect are excluded by surface constraints (SCs) (Koga and Ono, 2010). The characteristic of the surface constraints is that they may use notions of various components, thus suggesting a requirement of heavier loads on computations in brain and children’s errors in the later period of their acquisitions. Here leaving the implementations of the surface constraints for a future research, we repeat Koga and Ono’s (2010) surface constraints. SC1: **The prosodic structure of every tensed form is at smallest bimoraic.** For example, /n# u/ ‘sleep-Tense [expletive]’, violates this. SC2: **Given a subconstituent C of a candidate expression characterized by a set of syntactic specifications, C stands in correspondence to every other listed form that is characterized by the same set of syntactic values within its immediate morphological class** (Steriade, 2008). Constraint SC2 with C being the rest of the verbal stem excludes /tab# u/, which contains the rest of the verbal stem only /u/, since some lexemes within the immediate morphological class whose stem consists only of one consonant, e.g., /n/ ‘sleep’, lead to a violation of this constraint. Thus, the grammar, which is the core components plus the surface constraints, allows /tab# u# ru/ for ‘eat [Non-past]’. See Koga and Ono (2010) for another constraint of the economy of the number of

past]($\lambda X \lambda e \lambda t [X(e)(t)] (\lambda e \lambda t [sleep'(e)(t)])$), equivalently $\lambda e \lambda t [sleep'(e)(t) \& t \in Non - Past]$. See Koga and Ono (2010) for the ideas of the division of labor.

repeated occurrences of the tense expletive. The well-known apparently-irregular ‘conjugations’ of the strong base verbs /k(o)/ ‘come’ and /s(e)/ ‘do’ left unexplained until now will be explained with an explanatory adequacy similarly.

3 Conclusion and implications

We found dependency between the verbal stem forms selected by an affix and those selected by another affix. The stem dependency forms a hierarchical structure of the affixes with the stem forms of the past affix at the top node and with each local relation describing a *either* relation-argument *or* marked-unmarked relation. If an affix A describes a relation or an unmarked element and another affix B describes its argument or its marked element, then the stems for the affix B will be equal to or longer than those for the affix A. As two examples from among the affixes, we presented implementations of the past affix and Koga and Ono’s (2010) selectional analysis of the tense expletive in the core components of the grammar, which both include the morphological selectional specifications as well as syntactic and semantic ones. The current study implies that the more deeply embedded or marked the affix is, the longer or at least equally lengthened verbal stem will be selected, maybe in order for the audibility of verbal stems, in the dialects and standard of Japanese, and that the morphological selectional specifications are analyzed with the use of the features of derivationhood and length.

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