

Consecutive occurrences of the tense expletive: in case of a ‘shorter’ event-describing morpheme plus /s/*

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Abstract

The current paper provides verbal forms of a ‘shorter’ event-describing morpheme (especially the phoneme sequence of one Chinese character) plus the phoneme /s/ in Japanese like ‘愛 s’ (/ais/), as in /aisanai/ ‘does not love’, ‘熟 s’ (/jukus/), as in /jukusanai/ ‘does not ripen’, behaving morphologically similarly 1) to so called verbal noun plus the light verb /s/ ‘do’ (VN-LV) and 2) to the /s/ consonant-final base verbs. It proposes an analysis of the ‘non-past’ forms of the verbs in question, assuming each as having three base forms, which are not only the lexically formed /s/ consonant-final base form, as suggested in Kageyama 1980, but also the base forms /s/ and /si/ of the light verb syntactically compounded with a ‘shorter’ event-describing morpheme as its counterpart of Verbal Noun-Light Verb analyzed in Shimada and Kordoni 2003. The study implies that Koga and Ono’s 2010 surface constraints of prosodic minimality and morphological economy explain apparently irregular verbal forms of a ‘shorter’ event-describing morpheme plus /s/.

【Keywords】 verbs of a ‘shorter’ event-describing morpheme plus /s/, tense expletive (or default morpheme of tense)

1. Verbal forms of the ‘shorter’ event-describing form plus /s/ in Japanese

There is a morphological group of verbs in Japanese consisting of a ‘shorter’ event-describing morpheme, especially one Chinese character, plus the phoneme /s/ at the end, abbreviated as SE/s/, like /ais/ ‘love’ and /jukus/ ‘ripen’, as given by Yuzawa 1977 (55-61), where the Chinese character does not end with either the glottal stop (or the first consonant of a consonant geminate) or the syllabic nasal.¹

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1.1. In contrast with the verbs of verbal noun plus light verb, VN-LV

The verbs of a ‘shorter’ event-describing morpheme, especially one Chinese character, SE/s/, are distinct from the event-describing noun plus the light verb (VN-LV) as follows. The negative forms of the verbs of this pattern end with /anai/, as exemplified in the first cell from the top of the verb /jukus/ ‘ripen’ in Table 1, in contrast with /inai/ of the VN-LV /kanjukus/ ‘completely ripen’, as in its counterpart in Table 2.

meaning of affix	Stem-Affix
‘not’	jukusanai
‘Present participle’	jukusi
‘Non-past’	jukusuru, ?jukusu
/(r)eba/ ‘if’	jukusureba, jukuse ba
‘imperative’	jukuse

Table 1: Verbal forms of the ‘shorter’ event-describing form plus /s/ (SE/s/) /jukus/ ‘ripen’

meaning of affix	Stem-Affix
‘not’	kanjukusinai
‘Present participle’	kanjukusi
‘Non-past’	kanjukusuru
/eba/ ‘if’	kanjukusureba
‘imperative’	kanjukus iro

Table 2: Verbal forms of the event-describing noun plus light verb (VN-LV) /kanjukus/ ‘completely ripen’

The ‘present participle’ forms end with /i/, as in Table 1, the same as those of the VN-LVs, as in Table 2. The ‘non-past’ forms end with either /uru/ or /u/, as in Table 1, in contrast with /uru/ **only** of the VN-LVs, as in Table 2 although the latter sounds classical as marked with ?. The /(r)eba/ conditional forms end with either /ureba/ or /**eba**/, as in Table 1, in contrast with /ureba/ **only** of the VN-LVs, as in Table 2. The imperative forms end with /e/, as in Table 1, in contrast with /**iro**/ of the VN-LVs,

as in Table 2.

1.2. If consisting of two base forms, the /s/ consonant-final base form and the /i/ vowel-final base form

If there were two base forms, /s/ consonant-final base form and /i/ vowel-final base form, associated with each verb of the ‘shorter’ event-describing form plus /s/, then it should have the verbal forms as those in Table 3.

stem	If consonant-final	If vowel-final
‘not’	jukus# anai	*jukusi# nai
‘Present participle’	jukus# i	jukusi
‘Non-past’	?jukus# u	*jukusi# ru
/eba/ ‘if’	jukus# eba	*juku# si# reba
‘imperative’	jukus# e	*kanjuku# si# ro

Table 3: If the ‘shorter’ event-describing form plus /s/ is /s/ consonant-final or /i/ vowel-final

This is actually not the case. It follows from the right column of the table that the verbs of a ‘shorter’ event-describing morpheme plus /s/ do not have the /i/ vowel-final base form since the present participle form /jukusi/, which is correct, can be analyzed as /jukus i/, consisting of the /s/ consonant-final base and the present participle form /i/, as the present participle form of a consonant-final base verb /yom/ ‘read’ is /yom# i/ ‘read# Present participle’. It follows from the left column that **each verb of the ‘shorter’ event-describing form plus /s/ has the /s/ consonant-final base form**. And yet, this is not sufficient since **the ‘non-past’ form of each of the ‘shorter’ event-describing form plus /s/ is suffixed with /uru/ rather than /u/ only**, as in /jukus uru/ ‘ripen [Non-past]’, as previously given in Table 1, rather than ?/jukus# u/ ‘ripen [Non-past]’. The latter ‘non-past’ form, which has only /u/ suffixed to the consonant-final base form, sounds classical as marked with ?. Furthermore, **the /(r)eba/ conditional forms are not only suffixed with /eba/ but also with /ureba/**, as in not only /jukus eba/ ‘if (it) ripens, ...’ but also /jukus ureba/ ‘if (it) ripens, ...’, as previously given in Table 1.

On the rest of the paper, we will introduce Koga and Ono’s 2010 framework on the

non-past tense in section 2, and then propose an analysis in the framework in section 3.

2. Koga and Ono's 2010 framework on the non-past tense

We will introduce the framework, specifically, the architecture of the grammar in which we state our analysis in section 2.1, the morpho-syntax and semantics of the grammar section 2.2 and surface constraints in section 2.3.

2.1. Architecture

A grammar as a whole is a function mapping a given meaning (as the given input) (m) to such an optimal candidate ($f(m)$), or output, which is pronounced as ϕ_2 , that its meaning (γ_2') can be equivalent to the input (m), as schematically represented as in Figure 1.

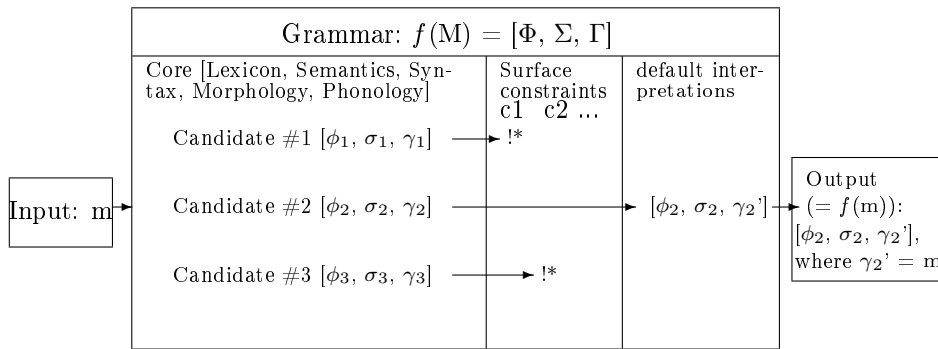


Figure 1: The assumed architecture of the grammar

The core components of the grammar consist of lexicon, phonology, morphology, syntax and semantics, and the grammar contains surface constraints (or filters) and default interpretations. The core components map the given meaning to its candidates (as the ‘generator’ does in the OT-LFG framework, for example, in Lee 2004). Here each candidate is a quadruple of a list of phoneme strings phoneme (Φ), a morpho-syntactic structure of the string (Σ), the semantic content of the string (Γ), and their correspondence function. Some candidates (candidates #1 and #3 in the picture) are excluded as inappropriate, and optimal one (candidate #2) is allowed to be one that invites the least serious violations of violable constraints, ranked in the dialect/language-specific hierarchy. Default

interpretations further specify the meaning of the optimal candidate (γ_2) as another, the meaning γ_2 ' in the picture. Relevant surface violable constraints will be given in section 2.3.

2.2. Morphology, syntax and semantics and a conventional implicature

[1] The grammar of Japanese, for example, contains the tense expletive, or the default morpheme of tense (DfltMT), /u/, as defined as in DfltMT (the default morpheme of tense) \rightarrow /u/ or /ru, and its morphological recursion rules $[VI/VP-tnsd [VI/VP-tnsd X][DfltMT Y]]$.² The grammar makes this recursion possible by having the content of the default morpheme of tense specified as the identity functions of both /u/' and /ru/' $= \lambda X \lambda e \lambda t [X(e)(t)]$. The content of the default morpheme of tense returns the content of a verb to the same content as the verb. The domain of the identity function is contents of verbs like $\lambda e \lambda t [ripen'(e) \& Cul/Hold(e)(t)]$ of verb /jukus/ 'ripen'.

[2] There are only two base forms for each of the strong base verbs, for example, /s/ and /si/ for the verb meaning 'do'. Note that no such morphemes as /su/ 'do' are not base forms of the verbs in the grammar.

[3] Given a sequence of morphemes that the core components have accepted as a finite clause, the interpretation of its tense will be specified by default if not specified inherently, or within the core components, as formalized in that $\lambda X \lambda e \lambda t [X(e)(t) \& t \in T_{NON-PAST}]$ is free. This is one of the cases where the meaning of a form is further specified by conventional implicatures, as pictured from γ_2 to γ_2' in Figure 1.

A prediction: Koga and Ono' 2010 morpho-syntactic analysis analyzes /... suru/ '(he) will do (it) or does (it)', as in /taro ga tennis o suru/ 'Taro Nom tennis Acc do [Non-past]' 'Taro plays tennis', as in Figure 2.

Koga and Ono's 2010 semantics analyzes the form /... s# u# ru/ that is analyzed as in Figure 2 as having the content as follows. The content of the heavy verb /s/ 'do' is specified as $\lambda e \lambda t [do'(e) \& Cul/Hold(e)(t)]$ in its lexical entry. Since the content of the default morpheme of tense (= DfltMT) /u/ is the identity function, the content of /... s# u/, $[VP-tnsd [VP-bse \dots s] [Tense [DfltMT u]]]$, is computed as the same as that of /s/ $[VP-bse \dots s]$. Furthermore, since the content of the default morpheme of tense (=

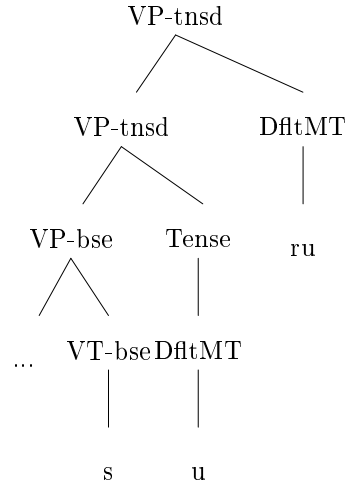


Figure 2: Koga and Ono' 2010 analysis of /... s# u# ru/ '(he) does (it) or will do (it)'

DftMT) /ru/ is the same identity function of /u/, the content of /... s# u# ru/ is the same as that of /... s# u/, which is the same as that of /s/, i.e., $\lambda e\lambda t[do'(e) \ \& \ Cul/Hold(e)(t)]$. This is the inherent meaning of /... s# u# ru/. A finite clause /taro ga tenisu o s# u# ru/ 'Taro will play tennis', for example, has the conventional implicature of the cost-free 'non-past' default interpretation applied, and the verbal part /s# u# ru/ 'do [Non-past]' receives the interpretation $\lambda e\lambda t[do'(e) \ \& \ Cul/Hold(e)(t) \ \& \ t \in T_{NON-PAST}]$.

2.3. Surface constraints

In order to prevent the grammar from allowing a 'non-past' form with less or more occurrences of the tense expletive (or the default morpheme of tense), Koga and Ono 2010 use a prosodic minimality constraint and an economy constraint. The former is **the prosodic structure of every tensed form must consist of two or more moras, i.e., be at smallest bimoraic**, as formalized as follows:

- (1) Prosodic moraic minimality constraint (ProsMini): $\text{PrsSF}(V[tnsd]) \geq [\mu \ \mu]$

The latter constraint is:

- (2) a. Economy on morpheme repetitions (EcoMRe): The larger number of consecutively repeated forms of an identical morpho-syntactic category a word contains,

the less it will be chosen in competition with another that contains the less number.

b. Nonviolability: ProsMini \gg EcoMRe.

The formula ProsMini \gg EcoMRe in terms of non-violability means that the candidates that violate the prosodic minimality are first not within the target of selecting optimal candidates, and then, among the candidates that do not violate the prosodic minimality, the candidates that contain a less number of forms of an identical morpho-syntactic category are selected for optimal ones against those that contain a more number of those. Following OT, surface constraints are violable, and are ranked in a dominance hierarchy particularly to each language or dialect. The non-core component of ranked constraints evaluates candidate forms, as some candidates (candidate #1 and candidate #3) are rejected, as pictured in the architecture in Figure 1.

A prediction: The economy constraint in conjunction with the prosodic minimality correctly predicts that the base forms of the strong base verbs, for example, /s/ ‘do’, combine with the complex /u# ru/, or two consecutively repeated default morphemes of tense. The form */s# u/ violates the prosodic minimality, and does not remain as a further candidate since the minimality is the higher ranked constraint. Among the candidates that do not violate the prosodic minimality constraint, including /s# u# ru/ ‘do [Non-past]’, and */s# u# ru# ru/, the former is optimal against the latter and the other grammatical but inappropriate ones since the former contains a less number (two) of consecutively repeated default morphemes of tense, as summarized in Table 4, than the latter and the others that contain three or more consecutively repeated forms.

	ProsMini	EcoMRe
a. s# u	*!	
☞ b. s# u# ru	✓	*[2]
c. s# u# ru #ru	✓	*[3]

Table 4: How */s# u/, /s# u# ru/ ‘do [Non-past]’ and */s# u# ru# ru/ satisfy or do not satisfy the constraints

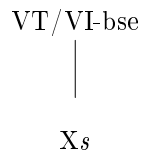
The numbers in brackets [] in the table indicate the number of the forms of an identical morpho-syntactic category, or the default morpheme of tense in this case.

3. An analysis of the ‘shorter’ event-describing morpheme plus /s/

Now an analysis of the ‘shorter’ event-describing morpheme plus /s/ will be proposed in Koga and Ono’ 2010 framework.

3.1. The base forms of the ‘shorter’ event-describing form plus s, e.g., [jukus] ‘ripen’

Suggested from the discussions at the end of section 1.2, we propose that each verb of the ‘shorter’ event-describing morpheme plus /s/ is associated with two base forms: 1) the lexically formed /s/ consonant-final base form like /jukus/ ‘ripen’, as pointed out by Kageyama 1980, and 2) the base forms of the ‘shorter’ event-describing morpheme and the light verb (LV) syntactically formed, e.g., [VI_{-bse} [SEM juku][LV s]], along the line of Shimada and Kordoni’s 2003 analysis of VN-LV. The former base forms are schematized in Figure 3.



where X is a ‘shorter’ event-describing morpheme

Figure 3: SEM/s/ as one verb

The ‘shorter’ event-describing forms are not noun, but morphemes defined as SEM, in contrast with their Chinese compound counterpart nouns, as contrasted between (3a) /juku/ and (3b) /kanjuku/ ‘complete ripeness’.

- (3) a. *kaki no juku
 persimmon Gen ripeness
- b. kaki no kanjuku
 persimmon Gen complete ripeness
 ‘complete ripeness of persimmons’

The former lexically formed /s/ consonant-final base forms are morphemes unanalyzable any further, i.e., have no morpheme boundary within the forms. Whether the lexically formed verb is a transitive verb or an intransitive verb is determined by the semantics of the verb.³ Assuming that the content of the phoneme /s/ in this lexical rule is the same as that of the light verb, i.e., is the same as $\lambda X \lambda e \lambda t [X(e) \ \& \ Cul/Hold(e)(t)]$, and that the content of the noun describing an event is analyzed as $\lambda e [N'(e)]$ in Parsons (1990: fn 13 in Chapter 7), it will follow that the contents of the verbs of the ‘shorter’ event-describing morpheme (SEM) plus /s/ are of the pattern as follows:

$$\begin{aligned} & \lambda X \lambda e \lambda t [X(e) \ \& \ Cul/Hold(e)(t)] (\lambda e [SEM'(e)]) \\ & = \lambda e \lambda t [SEM'(e) \ \& \ Cul/Hold(e)(t)]. \end{aligned}$$

The content of the verb /jukus/ ‘ripen’, for example, is computed in the lexicon as:

$$\lambda e \lambda t [ripen'(e) \ \& \ Cul/Hold(e)(t)].$$

3.2. Predictions:

The proposed analysis of the base forms of the verbs in question in conjunction with the surface constraints of the prosodic minimality and the morphological economy explains the two ‘non-past’ forms of the verbs in question, for example, analyzes the shorter ‘non-past’ form [jukusu] as in Figure 4 and its longer ‘non-past’ form [jukusuru] as in Figure 5.

The finite form ?[jukusu], in which there is only one default morpheme of tense, does not violate the prosodic moraic minimality constraint, $PrsSF(V[tnsd]) \geq [\mu \ \mu]$, since the finite form consists of three moras since there is no morpheme boundary within the phoneme sequence /jukus/ ‘ripen’. If the verb base form of [jukusu] in Figure 4 were analyzed as consisting of the SEM /juku/ and the light verb /s/, then it would have been analyzed as $[PrsSW \ juku] [PrsSW \ su]$, would have been inappropriate since it violates the prosodic minimality constraint.

The longer ‘non-past’ form [jukusuru] is separated into two prosodic structures: one for SEM /juku/, and the other for /s# u # ru/ since /juku/ and /s/ are concatenated by the syntactic rule, VI-bse \rightarrow SEM LV. The two consecutive default morphemes of tense

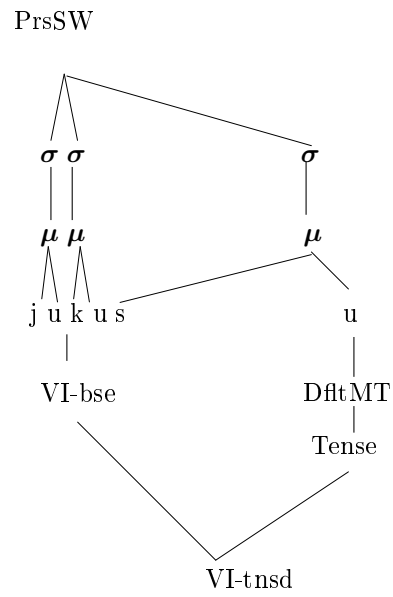


Figure 4: Prosodic Structure of Word [jukusu] ‘ripen [Non-past]’

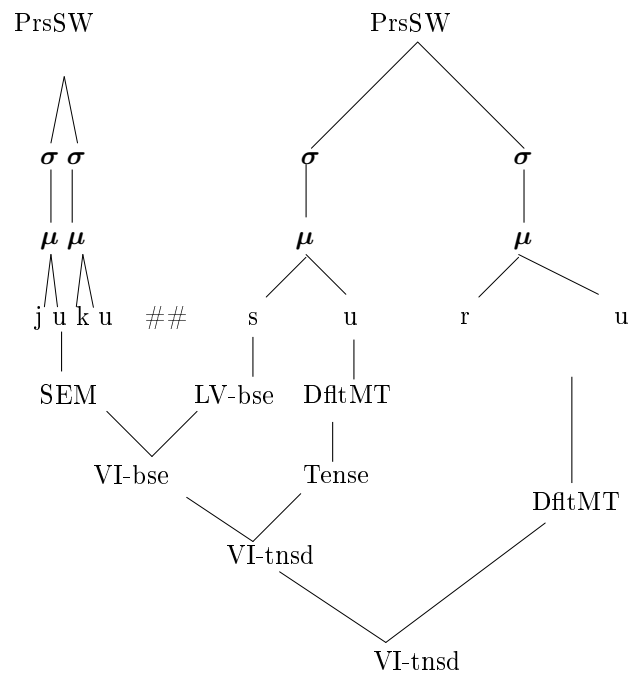


Figure 5: Prosodic Structures of Word [jukusuru] ‘ripen [Non-past]’

are motivated since the finite form with only one default morpheme of tense /s# u/ is not optimal in competition with /s# u# ru/ by the economy constraint, as its analysis by Koga and Ono 2010 presented in section 2.2. If the verb base form of [jukusuru] were analyzed as one lexical verb /jukus/, then the ‘non-past’ form [jukusuru] would have been inappropriate, analyzed as /jukus# u #r # u/, since the finite form with one default morpheme of tense would be enough to make /jukus#u/ heavy, having no motivation for the second default morpheme of tense.

Summary, implications and future research

The current paper provided verbal forms of the ‘shorter’ event-describing morpheme plus the phoneme /s/ in Japanese in contrast with those of the strong base verb /s/ ‘do’, the same as the light verb /s/ ‘do’, in section 1.1, and then discussed the morphological group of the verbs in question, whether it is either the /s/ consonant-final base verbs or the /i/ vowel-final base verbs in section 1.2, suggesting that they behave the same as former, but is not sufficient only with that. Introducing Koga and Ono’s 2010 framework on the non-past tense in section 2, specifically the architecture in section 2.1, the morpho-syntax and semantics, and a conventional implicature in section 2.2, and surface constraints of prosodic minimality and morphological economy in section 2.3, we proposed the analysis of the verbs in question in section 3, i.e., specified the base forms of the verbs in question. At the end of section 3, we saw how the surface constraints of prosodic minimality and morphological economy in conjunction with the proposed base forms of the verbs in question, with the use of the tense expletive, the default morpheme of tense, /u/ and /ru/. The study implies that Koga and Ono’s 2010 surface constraints of prosodic minimality apparently irregular verbal forms of the ‘shorter’ event-describing morpheme plus /s/. We have left a question of how affixes select base forms if there is more than one base form of verbs for a future research.

Notes

(1) If the Chinese character ends with either the glottal stop or the syllabic nasal, then the verbs tend to behave morphologically differently from those on the text. For example, the negative form of the verb /kanj/ ‘feel’ is /kanjinai/ instead of */kazanai/, as given in Iitoyo 1966 and Yuzawa 1977, and yet, the negative form of the verb /kans/ ‘involve’ is /kansanai/ instead of /kansinai/. The negative form of the verb /atts/ ‘press’ is /assinai/ instead of */assanai/, and yet, the negative form of the verb /ness/ ‘heat’ is /nessanai/ as well as /nessinai/. Related to this group of verbs, as Yu 2009 is an on-going work on the verbs of the individual-describing noun plus the light verb /s/ like /ochas/, as in /ochasuru/ ‘have tea’, there are other verbs that use the light verb. All of these verbs mentioned in this note are not within the scope of the current paper.

(2) See Koga and Ono 2010 for the further analysis of the default morpheme (or tense expletive) /ru/ as the tense-related phonemic filler /r/ and the tense expletive /u/.

(3) Our analysis is different from Shimada and Kordoni 2003. Shimada and Kordoni 2003, which gives an analysis in HPSG, uses the idea that the light verb transfers and add the complements of a complement of the verbal noun as the other complements of the verb.

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Appendix

The following rules and constraints are added to Koga and Ono 2010.

Standard Japanese

CORE GRAMMAR: SYNTAX:

- VI-bse \rightarrow VN LV
- VI-bse \rightarrow SEM LV
- VT-bse \rightarrow VN LV
- VT-bse \rightarrow SEM LV

CORE GRAMMAR: LEXICON:

- VI \rightarrow jukus % 'ripen'
- LV \rightarrow s % 'do'
- VN \rightarrow kanjuku % 'complete ripe'
- SEM \rightarrow juku % 'ripe'
- VT \rightarrow ais % 'love'
- SEM \rightarrow ai % 'love'

CORE GRAMMAR: SEMANTICS:

- LV' (= Light Verb') = $\lambda X \lambda e \lambda t [X(e) \ \& \ Cul/Hold(e)(t)]$.
- X' = $\lambda e [X'(e)]$, where X is either VN or SEM.

- **VI-bse'/VT-bse'** = $\lambda e \lambda t [R(e) \ \& \ Cul/Hold(e)(t)]$, where a 1 or 2-place relation replaces R, e.g., sleep'.

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