

# The contraction of the unmarked tense morpheme duplicated due to prosodic minimality<sup>1</sup>

Hiroki Koga

Saga University

1st Conference of Morphology and its interfaces (MI)  
Université Charles-de-Gaulle-Lille 3, Lille, France  
September 13th, 2013

---

<sup>1</sup>The current work is supported by KAKENHI of Japan Society for the Promotion of Science (JSPS), specifically Grant-in-aid for Scientific Research (C), No. 24520432 in the academic year 2013.

# Outline

- 1 The 'non-past' forms of the verbs
  - Saga western dialect
  - Old Japanese
  - The standard polite morpheme and the Yamaguchi /n/-consonant final verb
- 2 A previous study
  - Hayata 1998
  - Two temptations to reject
- 3 An analysis
  - Koga and Ono's 2010 morpheme-based morphology
  - Two further coda constraints
  - Baković's 2013 OT analysis of complementarity
  - Predictions

# Outline

- 1 The 'non-past' forms of the verbs
  - Saga western dialect
  - Old Japanese
  - The standard polite morpheme and the Yamaguchi /n/-consonant final verb
- 2 A previous study
  - Hayata 1998
  - Two temptations to reject
- 3 An analysis
  - Koga and Ono's 2010 morpheme-based morphology
  - Two further coda constraints
  - Baković's 2013 OT analysis of complementarity
  - Predictions

## The non-past forms of verbs plus the head noun /toki/ 'time', 'when ...' in Japanese Saga western dialect

- Each 'non-past' form of 1) the so-called vowel /e/-final base verbs and 2) the strong base verbs **ends with the former part of the geminate consonant if immediately followed by a consonant.**

/**nut** toki/ 'when (he) sleeps, ...'

cf. /**nuru** toki/ [Fukuoka Yanagawa]

/**neru** toki/ [Standard]

Note that \*/**nu:** toki/, and that the vowel immediately before the geminate is /**u**/.

- See Table 1.

[m-class]	S-western	S-Takeo	F-Yanagawa	Standard
[C-final]				
'float'	uku toki	uku toki	uku toki	uku toki
'sell'	u: toki	u <sub>t</sub> toki	u <u>ru</u> toki	u <u>ru</u> toki
[/e/-final]				
'sleep'	nu <u>t</u> toki	nu <u>t</u> toki	nu <u>ru</u> toki	ne <u>ru</u> toki
'eat'	ta <u>bu</u> t toki	ta <u>bu</u> t toki	ta <u>bu</u> ru toki	ta <u>be</u> ru toki
[/i/-final]				
'wear'	ki: toki	ki <sub>t</sub> toki	ki <u>ru</u> toki	ki <u>ru</u> toki
'wake'	oki: toki	oki <sub>t</sub> toki	oki <u>ru</u> toki	oki <u>ru</u> toki
[strong]				
'come'	ku <sub>t</sub> toki	ku <sub>t</sub> toki	ku <u>ru</u> toki	ku <u>ru</u> toki

Table: 1 The 'non-past' forms of verbs plus /toki/ 'when ...'

- Each 'non-past' form of the vowel /i/-final base verbs and the /r/-consonant-final base verbs **ends with the latter part of the lengthened vowel.**

/u: toki/ 'when (he) sells (them), ...'

/oki: toki/ 'when (he) wakes up, ...'

cf. /uru toki/ [F-Yanagawa, Standard]

/okiru toki/ [F-Yanagawa, Standard]

- See Table 1.

# The sentence-final and prenominal 'non-past' forms of verbs in old Japanese

- **The last final /ru/** of each sentence-final 'non-past' form of the vowel /e/-final base verbs and strong base verbs, but **NOT** of the /r/ consonant-final base verbs, **is absent in contrast with its pre-nominal counterpart.**

/nu/. '(He) sleeps. [Old Japanese]'

/nuru toki/, ... 'when (he) sleeps, ... [Old Japanese]'

/tabu/. '(He) eats (it). [Old Japanese]'

/taburu toki/, ... 'When (he) eats (it), ... [Old Japanese]'

- See Table 2.

m-class	S-final	Prenominal ('when ...')
C-final	uku.	uku toki
	uru.	uru toki
/e/-final	nu.	nuru toki
	tabu.	taburu toki
/i/-final	kiru.	kiru toki
	oku.	okuru toki
strong	ku.	kuru toki

**Table:** 2 The sentence-final and prenominal verbal 'non-past' forms in classical Japanese



- **The stem-final /i/ of each sentence-final 'non-past' form will be replaced with /u/ if the verb stem is a vowel /i/-final base verb and is equal to or longer than two moras like /oki/, and /ru/ is added to this for its pre-nominal counterpart.**

/oku/. '(He) wakes up. [Old Japanese]'

/okuru toki/, ... 'when (he) wakes up, ... [Old Japanese]'

cf. /okiru/. [F-Yanagawa, Standard]

- See Table 2.

- **The final /ru/'s** of the 'non-past' forms of the polite forms, which are analyzed as a kind of the strong base verb /s/ 'do', **are absent.**

/-masu/. '... [polite]. [Old Japanese]'

\*/masuru/

cf. \*/su/. [F-Yanagawa, Standard]

/suru/ '(He) does so. [F-Yanagawa, Standard]'

- See Table 3.

V-forms	'-Polite'	'do' [Saga]	Yamaguchi	Saga
Non-past	-masu	*su	*sinu	sinu
	*-masuru	suru	sinuru	*sinuru
Non-past-if	*-masureba	?sureba	*sineba	sineba
	*-maseba	*seba	sinureba	*sinureba
Past	-masita	sita	siNda	siNda
Neg	-maseN	seN	sinaN	sinaN

**Table:** 3 The verbal forms of the polite style in standard and those of the verb /sin/ 'die' in Yamaguchi dialect

- The 'non-past' form of **the /n/-consonant final base verb /sin/ 'die'** has **/ru/ added to its end.**

/sinuru/. '(He) dies. [Yamaguchi]'

cf. /sinu/. [Saga W, F-Yanagawa, Standard]

- See Table 3.

# Outline

- 1 The 'non-past' forms of the verbs
  - Saga western dialect
  - Old Japanese
  - The standard polite morpheme and the Yamaguchi /n/-consonant final verb
- 2 A previous study
  - Hayata 1998
  - Two temptations to reject
- 3 An analysis
  - Koga and Ono's 2010 morpheme-based morphology
  - Two further coda constraints
  - Baković's 2013 OT analysis of complementarity
  - Predictions

## Hayata 1998

The target language is Saga-Takeo dialect.

- Argumentation: **The underlying form of the 'non-past' affix** is /ru/, but NOT the former segment of the geminate consonant.

His analysis consists of:

- Vowel change [1]:  $e \rightarrow u / \_\_\_ ]_{verb\ stem}$
- Verb final /u/ elimination [2]:  $u \rightarrow \emptyset / r\_\_\_ ]_{verb}$
- /R/-regressive assimilation [3]:  $r \rightarrow C_i / \_\_\_ ]_{verb} C_i$

See Table 4 for a derivation.

ne ru toki	oki ru toki	UR
nuru toki		[1]
nur toki	okir toki	[2]
nut toki	okit toki	[3]
nuttoki	okittoki	

Table: 4 Derivation of the geminate consonant from the dental liquid

Hayata 1998 will not be adequate if the scope is expanded beyond Saga-Takeo dialect.

- It will not capture the difference in **Saga western dialect** between:
  - the **geminate consonant**, [...VC<sub>*i, non-past*</sub>]#C<sub>*i*</sub>..., if the verb is a vowel /e/-final base verb or one of the two strong base verbs, and
  - the **vowel lengthening**, [...V:<sub>*non-past*</sub>]#C..., if it is a vowel /i/-final base verb or an /r/ consonant-final base verb.
  - cf. /...Vru#C.../ [F-Yanagawa, Standard]



## Is the replaced /u/ a part of the stem?

- If the vowel /u/ replacing the stem final /e/ (and the stem final /i/ in old Japanese) were a part of another stem, then this would apply to the Yamaguchi /n/ consonant-final verb, and so, /sinu/ would be another stem.
  - e.g., **ne, nu** 'sleep', tabe tabu 'eat'
  - e.g., **oki, oku** 'wake up'
  - **k, ku** 'come', **s, su** 'do'
  - **sin, sinu** 'die'
- Q1: Why are those stems **used only in the 'non-past' forms (and the conditional forms the tense of which is the non-past)**?
- Q2: Why were those **stems used as the 'non-past' forms** in old Japanese?

## Stem vowel change in the Old Japanese potential verb

- We may be tempted to analyze **the stem final /e/ → /u/ as that of the old Japanese potential verb /e/.**

'non-past'	prenominal	'past'	'neg'	'causative'
<u>u</u>	<u>uru</u> toki	<u>eta</u>	<u>enu</u>	<u>esase</u>
tab <u>u</u>	tab <u>uru</u> toki	tab <u>eta</u>	tab <u>enu</u>	tab <u>esase</u>

Table: 5 The verb forms of /e/ 'obtain' or 'can' in Old Japanese

- Q1: Why did **the stem final /i/** change to /u/ as well in old Japanese?
- Q2: Why didn't **the verb forms with /u/** like /tabu/ **have the meaning of can** in old Japanese?

# Outline

- 1 The 'non-past' forms of the verbs
  - Saga western dialect
  - Old Japanese
  - The standard polite morpheme and the Yamaguchi /n/-consonant final verb
- 2 A previous study
  - Hayata 1998
  - Two temptations to reject
- 3 An analysis
  - Koga and Ono's 2010 morpheme-based morphology
  - Two further coda constraints
  - Baković's 2013 OT analysis of complementarity
  - Predictions

## Koga and Ono 2010

### Assumptions:

- Each lexeme of **the so-called vowel /e/-final base verbs and the strong base verbs** is associated with **another stem with the final vowel (/e/ or /o/) absent**: E.g., /ne/ and /n/ 'sleep', /tabe/ and /tab/ 'eat'.
- **The tense expletive /(*r*)u/ selects the shorter stem, and the stem plus the tense expletive as a whole is further selected by the tense expletive /ru/**: E.g.,  $[[[n]_{V[bse]}u]_{tense} ru]_{tense}$  'sleep-Non-past'.<sup>2</sup>

The tense expletive may be duplicated due to prosodic minimality on the 'non-past' forms of the verbs.

---

<sup>2</sup>See Julien 2002 for an idea that the building blocks of syntax are individual morphemes, but not words.

## Constraints

- \*/Ru/ Constraint on Verb Non-past Form: If the final syllable of the 'non-past' form of a verb, or a form of [*tense exp*], is one **with /r/ on the onset and /u/ on the nucleus**, then the verb form will not be appropriate.
- Coda Con(straint): **Only the special sounds** (or the glottal stop or the former part of the geminate consonant (**Q**) or the syllabic nasal (**N**) or the latter part of the lengthened vowel (**R**)) **are allowed on the coda positions**.
- Faith(fulness Constraint): If the sound S is analyzed as another distinct phoneme from the original sound, then the form with the sound S will not be faithful to the original.



- **The more-deeply embedded tense expletive /u/ forces the duplicated tense expletive /ru/, redundant in meaning, to be the least heavy, or Q, among the Japanese special sounds of Q, R and N.**
- **The former part of a geminate consonant Q cannot be one syllable, whereas both the latter part of a lengthened vowel R and a syllabic nasal N can be one syllable** in the slower speech (pc with Haruo Kubozono).
- Independent Motivation. **The tense expletive /ru/ is now absent when it immediately follows the past tense /ta/:** E.g., the classic form /hanashi-taru/ 'talked' for the modern form [hanashita] 'talked'.

## 2 The vowel lengthened in the coda position

**The same vowel as that of the nucleus** is at the coda position if the coda is associated with the tense expletive.

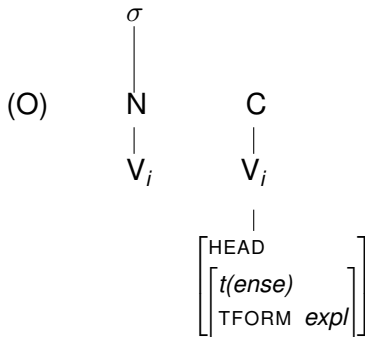


Figure: 3  $V_i V_i \# C$



## Baković 2013

- The coda constraint  $V_iV_j\#C$  would apply **everywhere the coda constraint  $VC_i\#C_j$  applies**, and is actually **blocked by the constraint  $VC_i\#C_j$** . In addition, the set of the contexts where the constraint  $VC_i\#C_j$  applies is a proper subset of the set of the contexts where the constraint  $V_iV_j\#C$  applies.
- Following Baković 2013, we can explain this complementarity or blocking by **ranking the specific constraint prior to the general constraint, or  $VC_i\#C_j \gg V_iV_j\#C$** .
- Ranking of Constraints: CodaCon  $\gg VC_i\#C_j \gg$  Faithfulness  $\gg V_iV_j\#C$ .

# Predictions

	[ <i>tense expl</i> ]	CodaCon	CC(V <i>C<sub>i</sub></i> #C <i>i</i> )	Faith	CC(V <i>V<sub>i</sub></i> #C)
	tabur	*	*		*
	tabu:		*	*	
☞	tabuC				*
	tabuN		*	*	*
	okir	*	*		*
☞	ok:			*	
	okiC		*		*
	okiN		*	*	*

**Table:** 6 The 'non-past' forms of the vowel /e/-final base verbs and the vowel /i/-final base verbs of Saga western dialect

## Conjunctive analysis:

A phonological rule of  $r \rightarrow C_i$  in place of the coda constraint  $VC_i\#C_i$  would not be modular.

$$r \rightarrow C_i / \dots[\sigma \dots [N \ V_i] \ [c \ \_]] \# [\sigma [o \ C_i] \ \dots] \dots$$

|  
 [ HEAD  
 [ t(ense) ] ]

|  
 [ HEAD  
 [ t(ense)  
 TFORM expl ] ]

Figure: 2 Phonological rule (rejected)

The triggering context contains not only phonological notions but also too many morphological notions, which is undesirable on the assumption of modular grammar.

We need a rule ordering for the two coda constraints for the geminate and the vowel lengthening.

## Summary and implications

### Summary:

We provided the data of:

- the non-past forms of verbs in Japanese-Saga western dialect, in addition to Hayata's 1998 observation of those in Japanese-Saga Takeo dialect, in contrast with those of Japanese Fukuoka-Yanagawa dialect and standard Japanese.
- furthermore, 1) the non-past forms (or the pre-nominal forms and the sentence-final ones) of verbs in old Japanese, 2) the forms of the polite affix and 3) the non-past forms of the /n/-consonant-final base verb /sin/ in Japanese-Yamaguchi dialect.

- It was shown that Hayata 1998 cannot capture the difference between the geminate consonant and the lengthened vowel corresponding to the final /ru/'s of the 'non-past' forms of the verbs.
- We argued in favor:
  - that **the vowel /u/ corresponding to the stem final /e/ is NOT a part of the verb stem**, and
  - that it is **NOT the same as that of the potential verb /e/ in old Japanese**.

We proposed an OT explanation with three coda constraints and a faithfulness constraint in Koga and Ono's 2010 morpheme-based morphology.

- **The plural stems for some lexemes of the verbs and affixes as morphemes selecting verb stems** are assumed in the morphological framework.
- **The vowel /u/ corresponding to the stem final /e/ is the morpheme of the tense expletive** as well as the sequence /ru/ is.
- **The tense expletive (or the unmarked tense morpheme in contrast with the past morpheme) is duplicated'.**

- The proposed coda constraints are **one for Special Sounds Q, R and N, one for Geminate,  $VC_j\#C_j$  and one for Vowel Lengthened,  $V_jV_j\#$ .**
- **Ranking Coda Constraint for Geminate prior to Code Constraint for Vowel Lengthened in OT** explains the **blocking of the latter general constraint by the former specific constraint**, similarly to Baković 2013.

## Implications:

- Theory: **Backović 2013** works well for the complementarity for the coda positions associated with the tense expletive in Saga western dialect, as in \*/tabu:/ cf. /tabuQ/ 'eat-Non-past'.
- Language: **The unmarked morpheme** (but NOT a marked morpheme) **may be duplicated, and further contracts.**





### Scheme:

- Form  $[x_1 \dots x_n] \# [y_1 \dots y_n]$  *Unmarked*
- \*Form  $[x_1 \dots x_n] \# [y_1 \dots y_n] \# [y_1 \dots y_m \dots y_n]$  *Unmarked*
- Form  $[x_1 \dots x_n] \# [y_1 \dots y_n] \# [y_1 \dots y_m]$  *Unmarked*,  
where  $m < n$ .



- Language and Theory: **The morpheme-based morphology, or Item-Arrangement Approach, with affixes' being the head and selecting verb stems, fits Japanese well**, which is an agglutinative language.
- Japanese: **If the corresponding vowel /u/ to the verb stem final /e/ is analyzed as the tense expletive** (Koga and Ono 2010 and Koga 2012), then we can explain **the 'non-past' forms of dialects and old Japanese as well as standard** in a more straightforward manner.

## References:

-  Baković, Eric J. 2013. *Blocking and complementarity in phonological theory*. Sheffield: Equinox Publishing Ltd.
-  Hayata, Teruhiro. 1998. Saga-hoogen no dooshi mikanryo-rentaiji no kiteekee. *Report from Linguistic Laboratory at Kyushu University*, 19: 1-4.
-  Julien, Marit. 2002. *Syntactic heads and word formation*. Oxford: Oxford University Press.
-  Koga, Hiroki. 2012. Past affix' selection of verbal stem allomorphs, *Proceedings of the 19th International Conference on Head-driven Phrase Structure Grammar*, 232-250. Chungnam National University Daejeon, July 18th to 21st, 2012. CSLI Publications. Downloadable at <http://cslipublications.stanford.edu/HPSG/2012/>



Koga, Hiroki and Koji Ono. 2010. Surface constraints on multiple occurrences of the tense expletive. *International Workshop on Morphology and Formal Grammar*, poster presentation, Université Paris Diderot, July, 8th, abstract downloadable at <http://hpsg2010.linguist.univ-paris-diderot.fr/workshop>

I would be very happy if I can hear your comment in case you have any. My e-mail address is [hkoga@cc.saga-u.ac.jp](mailto:hkoga@cc.saga-u.ac.jp).