Secondary High Hones in Koshikijima Japanese*

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Key Words: Koshikijima Japanese, endangered language, secondary H tone, H tone clash, H tone deletion

1. Introduction
(1) Goals
a. To examine the nature and behavior of secondary High tones (Hs) in Koshikijima Japanese (甑島).

b. To trace the development of Hs in Koshikijima by comparing three pitch accent systems (see the maps on the last page):
   (i) Nakakoshiki (中甑, henceforth ‘Naka’) system in 1937 (Kamimura 1937),
   (ii) Naka system today,
   (iii) Kuwanoura (桑之浦, henceforth ‘Kuwa’) system today.

2. Koshikijima Japanese
2.1. Background
(2) a. Spoken on the Koshikijima Islands (north, central, and south), about 40 km to the west of the mainland of Kagoshima, Kyushu (see the maps on the last page).

b. Highly endangered, with only 2,500 native speakers (population: 5,000)

c. Old work on word accent by Takaji Kamimura (1937, 1941)

d. Accent Database (Google Chrome) (Kubozono et al. 2016)

http://koshikijima.ninjal.ac.jp/

2.2. Common Features of KJ Prosody
(Kamimura 1937, 1941; Kubozono 2010, 2012a,b, 2016)
(3) a. Two-pattern accent systems like Kagoshima and Nagasaki Japanese

b. Mora-counting systems (i.e. moraic version of Kagoshima Japanese)

   Type A: H tone on the penultimate mora
   Type B: H tone on the final mora
   (Caps=H tone; dots=syllable boundaries)

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1
<table>
<thead>
<tr>
<th>Type</th>
<th>Koshikijima (mora-based)</th>
<th>Kagoshima (syll-based)</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>A.me</td>
<td>A.me</td>
<td>candy</td>
</tr>
<tr>
<td></td>
<td>o.NA.go</td>
<td>o.NA.go</td>
<td>woman</td>
</tr>
<tr>
<td></td>
<td>zi.KAn</td>
<td>ZI.kan</td>
<td>time</td>
</tr>
<tr>
<td></td>
<td>ba.REe</td>
<td>BA.ree</td>
<td>volleyball</td>
</tr>
<tr>
<td>Type B</td>
<td>a.ME</td>
<td>a.ME</td>
<td>rain</td>
</tr>
<tr>
<td></td>
<td>O.to.KO (−o.to.KO−O.TO.KO)</td>
<td>o.to.KO</td>
<td>man</td>
</tr>
<tr>
<td></td>
<td>MI.kaN(<del>MI.KAN</del>mi.KAN)</td>
<td>mi.KAN</td>
<td>orange</td>
</tr>
</tbody>
</table>


c. *Bunsetsu* phrase as the domain of pitch accent assignment

**Type A**: A.me ‘candy’, a.ME-ga ‘candy-NOM’…

**Type B**: a.ME ‘rain’, …-GA ‘rain-NOM’, …-ka.RA ‘from rain’

Three-mora nouns have the same accent pattern as [two-mora noun + one-mora particle]: e.g. a.ME-ga ‘candy-NOM’ = o.NA.go ‘woman’

d. Remarkable regional differences among the villages, especially regarding the H tones.

### 2.3. Regional Differences (Kubozono 2016)

(4) One-H-tone system vs. Two-H-tone system

a. KJ-Taira （平良）permits only one H tone per word just like Kagoshima Japanese.

**Type A**: LH₃L

**Type B**: LH₁₉

b. All other KJ dialects today show two H tones in three-mora or longer words.

**Type A**: H₃LH₃L (Hp=primary H tone)

**Type B**: H₃LHp

c. Taira: na.tu.ya.SU.mi ‘summer holiday’

Elsewhere: NA.TU.ya.SU.mi

<table>
<thead>
<tr>
<th>Hs</th>
<th>Hp</th>
</tr>
</thead>
</table>

(5) Two solutions to avoid rising contour in H₃p.

a. H tone spreading in Taira

   (A) pu₁₃ru → PUU₁₃ru ‘swimming pool’

   paN₁₃tu → PAN₁₃tu ‘pants’

   (B) mi.kaN → mi.KAN ‘orange’

b. H tone shift elsewhere

   (A) pu₁₃ru → PU₁₃ru

   paN₁₃tu → PAN₁₃tu

   (B) MI.kaN (unchanged) → *mi.KAn

☞ From here, we discuss only two-H systems, with main focus on the behavior of H₃.

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1 See Hyman (2007) for a similar process in African languages.
2 H tone shift is blocked in Type B: */mi.KAn/ would be identical to Type A pattern, /zi.KAn/ ‘time’.
3. Naka System in 1937

(6) Takaji Kamimura (1908-1996)
   b. Did extensive fieldwork in 1937, covering ‘most villages on the Islands’ (except Kuwanoura to be discussed in section 5 below).
   c. Already described Taira as different from all other villages.
   d. Described all other villages as having a more or less homogeneous accent system.

(7) Basic rule: Hs is fixed to the second mora in both accent types.
   (A) na.\text{\underline{TU}}.ya.\underline{SU}.mi ‘summer holiday’
       \begin{align*}
       \text{Hs} & \quad \text{Hp} \\
       \end{align*}
   (B) ha.\text{\underline{RU}}.ya.\underline{su}.\underline{MI} ‘spring holiday’
       \begin{align*}
       \text{Hs} & \quad \text{Hp} \\
       \end{align*}

\begin{itemize}
\item Hs is assigned from the left edge (L\rightarrow R).
\item Hs is (largely) independent of Hp.
\item Hs is not distinctive—maybe a boundary tone.
\end{itemize}

(8) Hs is linked to the second mora, whether or not it is the head mora of the syllable.
   (A) zyo\text{\underline{O}}.ki.\text{SEn} ‘steam boat’
       ka.\text{\underline{ZA}}.ri.\text{MON} ‘decoration’
       ka.\text{\underline{ZA}}.i.\text{MON} ‘decoration (colloquial)’
   (B) a\text{\underline{N}}.sa\text{\underline{N}} ‘elder brother’

(9) Hs shift (No Clash): Hs is not allowed to clash with Hp.
   (A) ą.m\text{\underline{A}}.za.\text{KE}, *ą.\text{\underline{MA}}.\underline{ZA}.\text{KE} ‘sweet drink made from fermented rice’
       \begin{align*}
       \text{Hs} & \quad \text{Hp} \\
       \end{align*}
   (B) o.t\text{\underline{O}}.KO, *o.\text{\underline{TO}}.\underline{KO} ‘man’
       \begin{align*}
       \text{Hs} & \quad \text{Hp} \\
       \end{align*}

(10) No Hp tone deletion in connected speech
   a. In present-day KJ dialects, Hp deletes in non-final positions in connected speech, as we will see shortly (see (14) below).
   b. Kamimura (1937) did not report such a phenomenon, which suggests that Hp deletion had not occurred 80 years ago.
   c. Hp deletion might have resulted in the loss of contrast between Type A and Type B.
      (A) *na.\text{\underline{TU}}.ya.\underline{su}.\underline{mi}…
      (B) *ha.\text{\underline{RU}}.ya.\underline{su}.\underline{mi}…

(11) Summary (Naka system in 1937)
   a. Type A (\(\mu=\text{mora}\))
      \begin{align*}
      \#\mu & \quad \cdots \mu\# \\
      \text{Hs} & \quad \text{Hp} \\
      \end{align*}
4. Naka System in 2017 (widespread in Koshikijima today) [300? native speakers]

(12) Basic rule: Hs perfectly correlates with Hp. It is assigned to every syllable before Hs, with one L-toned syllable in between. Consequently, the domain of Hs becomes larger as the phrase becomes longer.

(A) \text{NA.TU.YA.SU.mi-KA.ra} ‘from the summer holiday’
\begin{tabular}{ll}
Hs & \hspace{1cm} Hp \\
\text{NA.TU.YA.SU.mi} & \hspace{1cm} (\text{Hs tone shift due to H tone clash; otherwise, Hs is on the second mora)} \\
\text{Hs} & \hspace{1cm} \text{Hp}
\end{tabular}

(B) \text{HA.RU.YA.SU.MI-RA} ‘from the spring holiday’
\begin{tabular}{ll}
Hs & \hspace{1cm} Hp \\
\text{HA.RU.YA.SU.MI} & \hspace{1cm}\text{RA}
\end{tabular}

☞ Hs is assigned from the right (R→L).
☞ Hs is entirely dependent on Hp.
☞ Hs is distinctive (redundantly).

(13) No Clash between Hp and Hs

(A) \text{A.ma.ZA.ke} ‘sweet drink’
\text{ZYOO.ki.SEn} ‘steam boat’
\text{ZYOO.ki.SEn-ga} ‘steam boat-NOM’
\text{ZYOO.KI.sen-KA.ra} ‘from the steam boat’

(B) \text{O.to.KO} ‘man’
\text{O.TO.ko-GA} ‘man-NOM’
\text{O.TO.KO-ka.RA} ‘from the man’
\text{O.TO.KO-KA.ra-MO} ‘from the man, too’

(14) Hp deletion in connected speech (Kubozono 2012a)

(A) S-final: \text{NA.TU.ya.SU.mi}
Non-final: \text{NA.TU.ya.su.mi}…

(B) S-final: \text{HA.RU.YA.su.MI}
Non-final: \text{HA.RU.YA.su.mi}…

☞ Hp deletion—absence of a second F0 rise—indicates non-finality of the sentence.
Lack of Hp deletion—presence of a second F0 rise—signals sentence-finality.
☞ Hs functions as distinctive in non-final positions in connected speech.
(15) Why does Hp deletion happen in connected speech?
   a. Account 1
      Culminativity: at most one prominence peak per word (Hyman 2006) (∝ OCP)
   b. Account 2
      Avoid Clash: Avoid H tone clash within a word

(16) These accounts do not explain:
   a. Why Hp deletion does not occur at the lexical level.
   b. Why Hp deletion does not occur in sentence-final position in connected speech.
   c. Why the primary H tone (Hp) is the target of deletion. Why not Hs?

(17) Answer: Hp deletion occurs to avoid H tone clash with the H tone in the following phrase.
   (A) NA.TU.ya SU.mi # XXXxxXx
      Hs Hp Hs Hp
      <clash>
   (B) HA.RU.YA.su MI # XXXxxXx
      Hs Hp Hs Hp
      <clash>
☞ This account answers all the three questions in (16).
☞ It also predicts that Type B words would be more likely to undergo Hp deletion than Type A words. This is borne out by the evidence from the Kuwa system (section 5).

(18) Similarities with the Rhythm Rule in English (Kubozono 2012b)
   The primary stress of one word is deleted/reduced if it is followed by another word.
   e.g. Jàpa.né se péople → Jàpa.né péople
☞ Pitch-accent systems can be similar to stress-accent systems in this respect.
   Question: similar evidence from tone languages?

(19) Summary (Naka system in 2017)
   a. Type A (σ=syllable, μ=mora)
      #σ...σμμμ#
      Hs Hp
   b. μμμ
      μμμ
      σμμ
      σσμμ
      σσσμμ
      σσσσμμ
      Hs Hp
5. Kuwa(noura) System in 2017 [60 native speakers]

(20) Basic rule: Hs is usually linked to the initial two moras.
   (A) NA.\text{TU}.ya.SU.mi ‘summer holiday’
   (B) HA.\text{RU}.ya.su.MI ‘spring holiday’
   Hs is assigned from the left edge (L → R).
   Hs is not distinctive.

(21) Clash is permitted between Hs and Hp
   (A) AM.\text{ZA}.ke ‘sweet drink’
      
   (B) O.\text{TO}.KO ‘man’
      Hs
      Hp
   The two H tones may be adjacent to each other; Hs is entirely independent of Hp.

(22) Hs spreading: Hs spreads to the third mora if the second and third moras form a syllable.
   a. KA.\text{ZA}.ri.MOn vs. KA.ZA.LMOn ‘decoration (colloquial)’
      Hs
      Hs
   b. FU.RAN.DAa.su ‘Flanders’
   c. NI.GI.ri.ME.shi vs. NI.GI.II.ME.shi ‘rice ball (colloquial)’

(23) Hp deletion: Hp is deleted in connected speech, but only in Type B words.
   (A) S-final: NA.TU.ya.SU.mi
      Non-final: NA.TU.ya.SU.mi…(no deletion)
   (B) S-final: HA.\text{RU}.ya.su.MI
      Non-final: HA.\text{RU}.ya.su.mi…(deletion)
   Hp deletion can happen although Hs is non-distinctive.
   Despite Hp deletion, tonal contrast between A and B is preserved.
   It is signaled by the presence or absence of Hp in non-final position.
   If Hp is present (i.e. if Hp is not deleted), then it is Type A;
   If absent, then Type B

(24) Summary (Kuwa system in 2017)
   a. Basic pattern (Type A)
      
   b. 
      Hs
      Hp

6
6. Comparison of the Three Systems

(25) Nature and behavior of Hs

<table>
<thead>
<tr>
<th></th>
<th>Naka in 2017</th>
<th>Naka in 1937</th>
<th>Kuwa in 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>(examples)</td>
<td>NA.TU.ya.SU.mi</td>
<td>na.TU.ya.SU.mi</td>
<td>NA.TU.ya.SU.mi</td>
</tr>
<tr>
<td></td>
<td>HA.RU.YA.su.MI</td>
<td>ha.RU.ya.SU.mi</td>
<td>HA.RU.ya.SU.mi</td>
</tr>
<tr>
<td>Dependence on Hp</td>
<td>Entirely dependent</td>
<td>Largely independent</td>
<td>Entirely independent</td>
</tr>
<tr>
<td>Direction</td>
<td>R → L</td>
<td>L → R</td>
<td>L → R</td>
</tr>
<tr>
<td>Hs-Hp Clash</td>
<td>No clash</td>
<td>No clash</td>
<td>Clash</td>
</tr>
<tr>
<td>Distinctiveness</td>
<td>Distinctive</td>
<td>Non-distinctive</td>
<td>Non-distinctive</td>
</tr>
<tr>
<td></td>
<td>(redundantly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hp deletion in</td>
<td>Deletion in both</td>
<td>No deletion</td>
<td>Deletion in Type B</td>
</tr>
<tr>
<td>connected speech</td>
<td>accent types (A &amp; B)</td>
<td></td>
<td>only</td>
</tr>
</tbody>
</table>

(26) Hs (Type A): ●=High, ○=Low; syllable/mora distinction is ignored.

a. Naka in 2017

b. Naka in 1937

c. Kuwa in 2017

☞ Hs developed in opposite directions in the two systems: Hs has become a lexical property in the Naka system, whereas it has intensified its phrasal nature in the Kuwa system.

References


38 km (north to south) x 10 km (east to west)