

HIGH TONE SHIFT AND SPREADING IN ENDANGERED JAPANESE DIALECTS

Haruo KUBOZONO

National Institute for Japanese Language and Linguistics
kubozono@nijal.c.jp

ABSTRACT

This paper analyses H(igh) tone shift and spreading in Koshikijima Japanese, a highly endangered language spoken in the south of Japan. It is a moraic language as opposed to a syllabic one where an H tone is placed on a certain *mora* by counting the number of *moras* from the end of the word. However, this moraic principle is often violated if the H tone is assigned by rule to the second, i.e. non-head, mora of heavy syllables. Based on original fieldwork, this paper demonstrates that the endangered language attempts to avoid the marked prosodic structure in two independent ways: H tone shift and H tone spreading. In a way, these solutions reveal an interesting interaction between (word) tone and the two prosodic units, syllable and mora. The paper also provides principled accounts for several types of phonological asymmetries observed in the tonal phenomena.

Keywords: High tone shift, High tone spreading, Koshikijima Japanese, endangered language, syllable and mora

1. INTRODUCTION

Koshikijima Japanese (henceforth ‘KJ’ for short) is a dialect of Japanese spoken by some 3,000 speakers on a small island, Koshikijima Island, about 40 km off the main coast of Kagoshima Prefecture in the south of Japan. This dialect consists of about ten subdialects scattered around the island, all of which are highly endangered with approximately 60-800 native speakers each.

Like Tokyo Japanese and many other dialects of the language, this dialect has a word-based prosodic system where pitch rather than intensity or duration is used for lexical contrasts. Moreover, like many dialects spoken in the south of Japan, it has a two-pattern system, a system that permits two and only two contrastive tonal patterns irrespective of the length of the word.

Furthermore, like its sister dialect, Kagoshima Japanese spoken on the mainland, it has a H(igh) tone in the penultimate position in one accent class (Type A) and in the word-final position in another

class (Type B). However, the two sister dialects differ from each other with respect to the counting and tone-bearing units: KJ assigns the H tone on the basis of the mora, whereas Kagoshima Japanese places the H tone on a certain syllable by counting syllables (see, e.g., [3], [6], [9] and [12]). The two tonal patterns in these two systems are illustrated in (1)-(2), where capital letters and dots indicate high-pitched portions and syllable boundaries, respectively.

(1) Type A

<u>Koshikijima</u>	<u>Kagoshima</u>	<u>Gloss</u>
A.me	A.me	candy
ba.REe	BA.ree	volleyball
SA.bo.TEn	sa.BO.ten	cactus

(2) Type B

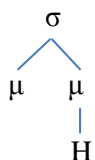
<u>Koshikijima</u>	<u>Kagoshima</u>	<u>Gloss</u>
a.ME	a.ME	rain
iN	IN	dog
MI.kaN	mi.KAN	orange

As can be seen from the above examples, KJ assigns an H tone to the penultimate mora in Type A words and on the final mora in Type B words. That is, it counts the number of *moras* from the end of the word, and realizes the H tone on a certain *mora* in both lexical classes. In contrast, Kagoshima Japanese, although only 40km apart from KJ, employs the syllable both in measuring phonological distances and assigning H tones. Moreover, all KJ dialects (except the Taira Dialect to be discussed in section 4.1 below) permit two pitch peaks or H tones in long words as in /SA.bo.TEn/ ‘cactus’ and /MI.kaN/ ‘orange’, although the first H tone is not realized in shorter words. In contrast, Kagoshima Japanese allows only one peak or H tone irrespective of the length of the word. In autosegmental terms ([1]), this means that most KJ dialects have HLHL and HLH melodies for the two lexical classes of words, while Kagoshima Japanese has LHL and LH melodies.

Given the moraic nature of KJ prosody, one may naturally wonder how it copes with the situation where the H tone is assigned by rule to the second, i.e. non-head, mora of heavy syllables (CVV or CVC). Assigning an H tone on these non-head

moras of heavy syllables as in (3) is generally disfavoured as a rising contour tone across languages ([2]). The question is how the endangered language in question copes with this marked prosodic structure. In what follows, we tackle this interesting question on the basis of some novel data from our fieldwork.

(3) Marked structure



2. PURELY MORAIC AND SYLLABIC SYSTEMS

By way of introduction, let us begin with a purely moraic system where the marked prosodic structure in (3) is tolerated. This system can be found in some dialects of Japanese such as Nagasaki Japanese in (4) (e.g. [10]) and the Nakasato Dialect of Kikaijima in (5) (e.g. [7]). Both dialects have a two-pattern system, like KJ and Kagoshima Japanese described in (1)-(2).

- (4) Nagasaki Japanese
 o.REN.zi ‘orange’
 koN.saa.to ‘concert’
 paA.tii ‘party’

- (5) Nakasato Dialect of Kikaijima Japanese
 O.reN.zi ‘orange’
 KON.saA.to ‘concert’
 PA.a.TIi ‘party’

Nagasaki Japanese in (4) assigns an H tone to the second mora in Type A words, whereas Kikaijima-Nakasato Japanese in (5) places an H tone in two places in most loanwords, one on the penultimate mora and the other on the fourth mora (and all the moras preceding it) from the end of the word. In both dialects, H tones can appear on the non-head moras (underlined in (4) and (5)), just as freely as on head moras. These dialects represent a purely moraic system where the distinction between the head and non-head moras is irrelevant. As we will see in the next section, the prosodic system of KJ is qualitatively different from these moraic systems in that it does not tolerate placing an H tone on non-head moras in principle.

While Nagasaki and Kikaijima-Nakasato Japanese can be labelled as ‘purely moraic’ systems, one can

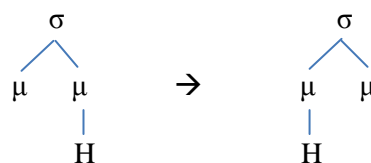
find a ‘purely syllabic’ system in Kagoshima Japanese. As described in (1) and (2) above, this system counts the number of *syllables* from the end of the word and realizes the H tone on a certain *syllable* of the word. Unlike the purely moraic systems described in (4)-(5), this system is insensitive to the distinction between heavy (bimoraic) and light (monomoraic) syllables, with an H tone on a certain syllable, whether heavy or light. In this sense, it can be defined at the other end of the mora-syllable continuum in (6). All other dialects of Japanese can be defined on this continuum, between the two extreme systems.



3. HIGH TONE SHIFT

KJ is not a completely moraic dialect like Nagasaki and Kikaijima-Nakasato, on the one hand, while it is not a purely syllabic dialect like Kagoshima Japanese, on the other. It basically has a moraic system since, as seen in (1)-(2), it counts the number of moras and not syllables to compute the position of the H tone. However, it is not a completely moraic system since it does not freely tolerate the marked prosodic structure in (3). One solution that many KJ dialects take to avoid this marked structure is to shift the H tone one mora to the left, i.e. onto the head mora of the same syllable. This process can be illustrated as follows.

(7) H tone shift



This is a strategy that is faithful to the moraic tone assignment in that the mora is still the tone-bearing unit although it may deviate from the default position of the H tone determined by tone rules. This strategy is observed widely in the dialects of KJ including the Teuchi, Nakagoshiki and Kuwanoura Dialects. Interestingly, it occurs only in Type A words, some of which are given in (8).

- (8) puU.ru → PUu.ru ‘pool’
 paN.tu → PAN.tu ‘pants’
 raI.to → RAi.to ‘light, right’
 teN.ki → TEn.ki ‘weather’
 zi.doO.sya → zi.DOo.sya ‘car’

cf. o.NA.go ‘woman’
 po.PAi ‘Popeye’
 zi.KAn ‘time’

The H tone shift in (7) and (8) is essentially identical to what has been observed in Tokyo Japanese, where H tones (or so-called pitch accents) are assigned to the antepenultimate mora in default cases ([1], [4], [5], [6], [11]). The H tone shifts one mora to the left if the antepenultimate mora is the non-head mora of heavy syllables, as shown in (9).

- (9) H tone shift in Tokyo Japanese
 roN.don → RON.don, ‘London’
 saI.daa → SAi.daa ‘cider’
 paA.tii → PAa.tii ‘party’
 kyoO.dai → KYOo.dai ‘brothers and sisters’
 tyuU.go.ku → TYUu.go.ku ‘China’
 cf. su.ZU.ran ‘lily of the valley’

One mystery about KJ is that the H tone shift does not occur in all words. Unlike Type A words described in (8), Type B words readily tolerate the marked structure in KJ. This is shown in (10), where the final mora is H-toned whether it is the head of the syllable as in (10a) or non-head as in (10b).

- (10) a. O.to.KO ‘man’
 A.ta.MA ‘head’
 b. MI.kaN, *mi.KAn ‘orange’
 NI.hoN, *ni.HOn ‘Japan’
 GO.boO, *go.BOO ‘burdock’
 SEN.seI, *sen.SEI ‘teacher’
 AI.roN, *ai.ROn ‘iron’

Why only Type B words permit the marked structure in (3) has been a long-standing mystery in the studies of KJ ([3], [9]). However, it can be explained if we consider the contrast between the two tonal classes. Namely, if Type B words should undergo H tone shift as well, they would come to take the same tone pattern as Type A in words ending in a heavy syllable. This is illustrated in (11).

- (11) Type A: zi.KAn ‘time’
 Type B: MI.kaN → *mi.KAn ‘orange’

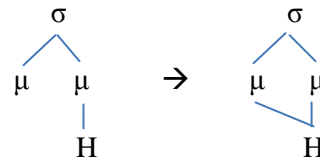
Seen in this light, the asymmetry between Type A and Type B words is no longer a mystery, but an epiphenomenon that can be attributed to a force to preserve the tonal contrast in the system.

4. HIGH TONE SPREADING

4.1. High tone spreading in the Taira Dialect

While most dialects of KJ exhibit H tone shift to avoid the marked structure in (3), there is one more solution found typically in the Taira Dialect, another KJ dialect spoken by some 300 people in the centre of the Koshikijima Island. Although it is only a few kilometres from its neighbouring KJ dialects, this dialect is different from all its neighbours in two respects. First, it permits only one H tone per word: it has LHL and LH melodies for the two classes of words like Kagoshima Japanese. In other words, it lacks the initial H tone that is observed in other KJ dialects. Second, it avoids the marked structure in (3) by spreading the H tone assigned to the non-head mora of the heavy syllable to the immediately preceding mora, so that the entire heavy syllable becomes H-toned. This is illustrated in (12).

- (12) H tone spreading



Unlike the H tone shift in (7), this strategy is faithful to the default position of the H tone but apparently violates the principle of assigning an H tone to one particular mora. Namely, the mora remains a measuring unit used to determine the basic position of the H tone, but is no longer a tone-bearing unit in this particular context. Some examples are given in (13)-(14). Tone spreading in Type A in (13) should be compared with the H tone shift in (8), while Type B in (14) should be compared with the words in (10b).

- (13) Type A
 puU.ru → PUU.ru ‘pool’
 paN.tu → PAN.tu ‘pants’
 raI.to → RAi.to ‘light, right’
 teN.ki → TEn.ki ‘weather’
 zi.doO.sya → zi.DOo.sya ‘car’
 cf. o.NA.go ‘woman’
 po.PAi ‘Popeye’
 zi.KAn ‘time’

- (14) Type B
 mi.kaN → mi.KAN, *mi.KAn ‘orange’
 ni.hoN → ni.HON, *ni.HOn ‘Japan’
 go.boO → go.BOO, *go.BOO ‘burdock’
 sen.seI → sen.SEI, *sen.SEI ‘teacher’

ai.roN → ai.ROn, *ai.ROn ‘iron’
cf. o.to.KO ‘man’

As can be seen from the above examples, this system links in principle the H tone to the penultimate (Type A) and final mora (Type B), just as other KJ dialects do: e.g. /o.NA.go/ ‘woman’, /zi.KAn/ ‘time’; /o.to.KO/ ‘man’. However, it avoids the marked structure in (3) by spreading the H tone to the preceding head mora rather than shifting it. Interestingly, unlike the H tone shift in (7), H tone spreading in this dialect occurs in both Type A and Type B words. This lack of asymmetry between the two lexical classes can be attributed to the fact that H tone spreading does not neutralize the two classes, as shown in (15) (cf. (11)).

- (15) Type A: zi.KAn ‘time’
paN.tu → PAN.tu ‘pants’
Type B: mi.kaN → mi.KAN ‘orange’
rin.GO ‘apple’

Note here that this prosodic system readily permits a falling contour tone as against a rising contour tone on the syllable containing an H tone: e.g. (falling contour) /zi.KAn/ ‘time’ vs. (rising contour) */mi.kaN/ ‘orange’. This asymmetry between the rising and falling contours can also be attributed to a force to avoid tonal neutralization. Namely, Type A and Type B would be neutralized if H tone spreading should excessively apply to syllables with a falling contour as well as those with a rising contour. This hypothetical neutralization is illustrated in (16).

- (16) Type A: zi.KAn → *zi.KAN ‘time’
Type B: mi.kaN → mi.KAN ‘orange’

4.2. High tone spreading in the Kuwanoura Dialect

H tone spreading in (12) is also observed with respect to the first H tone in the Kuwanoura Dialect, another KJ dialect spoken by only 60 people in a north-western village of the Koshikijima Island. This dialect has HLHL (Type A) and HLH (Type B) as basic melodies, like the KJ dialects discussed in section 3 above. These melodies are fully manifested in long words, with the initial H tone usually linked to the second mora of the word in both lexical classes. However, this H tone, probably a boundary tone of some kind, is associated with the initial two moras in words beginning with a heavy syllable. These two cases are illustrated in (17a) and (17b),

respectively, where (A) and (B) represent the two lexical classes of the word (Type A vs. Type B).

- (17) a. ka.ZA.ri.MOn ‘ornament’ (A)
na.TU.ya.SU.mi ‘summer holiday’ (A)
ha.RU.ya.su.MI ‘spring holiday’ (B)
a.SA.ga.O ‘morning glory (flower)’ (B)
b. ZYOO.ki.SEn ‘steamship’ (A)
UU.ka.ZE ‘typhoon’ (B)
SEN.seI ‘teacher’ (B)

This phenomenon can be interpreted as another case of H tone spreading in (12) although it is observed in word-initial rather than word-final positions.

What is interesting about the Kuwanoura Dialect is that the two H tones in the basic melodies behave differently to avoid the marked prosodic structure in (3). The first H tone undergoes H tone spreading, as we saw in (17b). The second H tone, on the other hand, exhibits two patterns: It undergoes H tone shift in Type A words, as seen in (8), while it tolerates the marked structure in (3) in Type B words, as we saw in (10)—Recall that the only H tone that appears in short words is the second H in the basic melodies (HLHL and HLH) and is calculated from the end of the word. The contrastive behaviours of the first and second H tones are shown in (18), where the relevant parts are underlined.

- (18) oN.sui.puU.ru → ON.sui.PUu.ru (A)
‘heated pool’
koO.tyoo.sen.seI → KOO.tyoo.sen.seI (B)
‘school principal’

It is truly interesting to find that a single prosodic system permits all three patterns in the face of the marked prosodic structure in (3): (i) the marked structure is tolerated by the second H tone in Type B words; (ii) the second H tone in Type A words undergoes H tone shift; and (iii) the first H tone undergoes H tone spreading in both Type A and Type B words.

5. ACKNOWLEDGMENTS

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