Where does loanword prosody come from?:
A case study of Nakijin Ryukyuan loanword accent

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Abstract
The current study concerns loanword accent of Nakijin Ryukyuan, hereafter NR. NR, as well as many Japonic languages or dialects, has a pitch accent system. Kubozono (2006) and Kubozono & Giriko (2011) claim that in several Japanese dialects loanword accent is determined by two factors: perceptual similarity between L1 (a borrowing language such as Tokyo Japanese) and L2 (a borrowed language such as English), and L1 phonology. NR loanword accent system at first sight appears different from those of other Japonic languages including Tokyo Japanese, which are reported in recent studies. In most cases, loanword accent in NR does not care about perceptual similarity, that is to say, NR ignores pitch fall of L2 (English or standard Japanese) in the course of determining accent type of loanwords. Nevertheless, the author claims that NR loanword accent can also be explained within the framework of Kubozono (2006) in a broad sense. In contrast to the languages reported in the above papers, pitch-rise is important in the NR accent system. By considering this condition unique to NR, it would be explainable that one of the two factors, perceptual similarity, does not work in NR loanword accent.

Introduction
Nakijin Ryukyuan is an endangered language which is spoken in the Nakijin village, located in the northern part of Okinawa Island. Comparing with standard Japanese, NR’s major characteristics are as follows:
☞ Glottalization (Nakasone 1983, etc.)
   In word initial, glottalization is distinctive. Ex.) JAA ‘arrow’, TJA ‘you’
   ※ Small letters indicate Low moras and capital letters High moras.
☞ Five vowels /a, i, u, e, o/, but Mid vowels /e, o/ appears only in Heavy syllables
   Ex.) ME ‘front’, nagaaSEn ‘long’
   sooZI ‘cleaning’, TonTU ‘Chinese people’
☞ Word Minimality (= more than 1 mora)
   Ex.) tfaA ‘tea’, MOO ‘algae’ in standard Japanese /tf/ and /mo/ respectively.
☞ Rhythmic Lengthening (Lawrence 1990)
   Lengthening of [-high] vowels in all even-numbered (dominant) syllables and [+high] vowels in even-numbered syllables which are not adjacent to an accent
   Ex.) Lengthening of /i/ (and /a/) in /Tjka/ ‘bundle’
   tfUTFiiiKA ‘one bundle’
   TAiiiKA ‘two bundles’
   miTiiiKA ‘three bundles’
   juTiiiKA ‘four bundles’
   hitiiTiiiA(a) ‘five bundles’
Nakijin Ryukyuan accent system

NR has a 3-Type (or 3-Pattern) Accent System. Ogawa (2012) calls each accent type A, B, and C. The following sections describe each accent type one by one. You can define each accent type more simply by taking foot structures into account. In this presentation, however, theoretical explanations of NR accent system are omitted.

Three types of accent

Type A

Type A has a pitch-rise just before the syllable including the 2nd mora of a (prosodic) word. In 2-mora words, a word begins with high pitch. A pitch-fall is not distinctive. Ex.) PAA ‘leaf’

- panaA ‘nose’
- huBIIN ‘inconvenience’
- HAAmi ‘reddish tinge’
- ˀaKAAGani ‘red metal (= copper)’

Type B

Type B has a pitch-rise just before the 3rd, 4th or 5th mora of a (prosodic) word. In 2-mora words, pitch rises just before the final (=2nd) mora. A pitch-fall is not distinctive. Ex.) paA ‘teeth’

- panaA ‘flower’
- hitIMti ‘morning’
- simiKI ‘moisture’
- ˀibiIRA ‘rice scoop’
- namaagUMII ‘raw rice’

Type C

Type C has an obligatory pitch-fall after the first mora of a (prosodic) word. This type constitutes a minor group, as shown in the following sections, and is assumed as a residue of a diachronic change.

Ex.) PAA ‘open sea’
- ˀUmi ‘the sea’
- NRUuzi ‘lands of Noro, a shaman’

Compound accent rule (CAR)

The accent of compounds is determined by the first elements. In other words, the Compound Accent Rule is defined as succeeding to the accent of its first element. Ex.) ˀKWAA ‘child’ (A) + ˀmaA ‘horse’ (B) → ˀKWAA’maa ‘foal’ (A)

- ˀujaA ‘parent’ (B) + ˀmaA ‘horse’ (B) → ˀujaa’MAA ‘parent of a horse’ (B)

- ˀUmi ‘the sea’ (C) + kagaMII ‘mirror’ (B) → ˀUmikagaMI ‘water glass’ (C)

Many Japonic languages have in common this kind of the CAR, which is dominated by the first elements. Standard Japanese, which has another kind of CAR, is rather an exception in the Japonic language family.

Loanword accent

Loanword accent of NR takes Type B accent in most cases. Loanword here means the words which are borrowed from standard Japanese and English. Ex.) tereBl ‘television’

- suweeDEn ‘Sweden’
- piiTIIEe ‘PTA’
- gurandoGORUhu ‘(name of a sport), “ground golf”’
- tenNOOHElka ‘His Majesty (the Emperor of Japan)’
- antoNIOINOki ‘(name of a pro wrestler) Antonio Inoki’

A statistical investigation of about 1000 words shows that 60-70% (depending on speakers) of loanwords take Type B; especially, 80% or higher in longer words which have more than four moras.

Why Type B?: Unmarkedness of Type B

When thinking of why Type B is chosen as the loanword accent, it seems that the markedness ranking of NR accent types is involved: Type B is the most unmarked and Type C is the most marked.

Markedness ranking of the accent types.

- Type B ≦ A < C

This ranking is derived from two evidences in the following sections; one is the number of words which belongs to each accent type, and the other is the application ratio of CAR.
The number of words

Type B words are about twice as many as Type A words in 2-4mora NR native words, and six times as many as Type C words.

Table 1. The number of 2-4mora native words extracted from Nakajima (1983)

<table>
<thead>
<tr>
<th>Syllable Structure</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Others</th>
<th>Total (bracketed is the number of words)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>38%</td>
<td>37%</td>
<td>26%</td>
<td>0%</td>
<td>100%(243)</td>
</tr>
<tr>
<td>LL</td>
<td>0%</td>
<td>0%</td>
<td>99%</td>
<td>1%</td>
<td>100%(138)</td>
</tr>
<tr>
<td>HL</td>
<td>47%</td>
<td>51%</td>
<td>2%</td>
<td>0%</td>
<td>100%(252)</td>
</tr>
<tr>
<td>LLL</td>
<td>46%</td>
<td>46%</td>
<td>8%</td>
<td>0%</td>
<td>100%(776)</td>
</tr>
<tr>
<td>LLL</td>
<td>50%</td>
<td>50%</td>
<td>0%</td>
<td>0%</td>
<td>100%(6)</td>
</tr>
<tr>
<td>HH</td>
<td>20%</td>
<td>75%</td>
<td>1%</td>
<td>4%</td>
<td>100%(626)</td>
</tr>
<tr>
<td>HLL</td>
<td>43%</td>
<td>54%</td>
<td>3%</td>
<td>0%</td>
<td>100%(270)</td>
</tr>
<tr>
<td>LLLL</td>
<td>37%</td>
<td>63%</td>
<td>1%</td>
<td>0%</td>
<td>100%(470)</td>
</tr>
<tr>
<td>LLLH</td>
<td>5%</td>
<td>92%</td>
<td>3%</td>
<td>0%</td>
<td>100%(302)</td>
</tr>
<tr>
<td>LLLL</td>
<td>0%</td>
<td>90%</td>
<td>10%</td>
<td>0%</td>
<td>100%(136)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>31%</td>
<td>59%</td>
<td>9%</td>
<td>1%</td>
<td>100%(3219)</td>
</tr>
</tbody>
</table>

Incidentally, the gaps indicated by shaded cells are explained mainly as a result of Rhythmic Lengthening. For example, LLLL (Type A) in the underlying structure becomes LLLH in the surface structure. Consequently the LLLL (Type A) sell becomes a gap in this table.

Application ratio of CAR

By investigating compound words in detail, it becomes clear that the application ration of CAR varies depending on accent types of the first elements. When a Type B word is the first element, a compound word always (99%) takes the same accent type, i.e. type B. On the contrary, when a Type C word is the first element, a compound word does not take Type C but takes Type B in most cases (77%).

Figure 3. Application ratio of CAR in five-mora compound words

Discussion

Kubozono (2006) claims that two factors are involved in loanword accent. For example, English word “Washington” is pronounced as “washington” in Tokyo Japanese. In “washington”, the mora “SI” is accent but the position of accent is different from that of English. This is explained by Kubozono as follows:

(i) **Perceptual Similarity** (input-output)

- English words involve a pitch fall when pronounced in isolation.
- Japanese listeners borrow this phonetic feature in loanword adaptation.
- Hence, most loans are processed as ‘accented’ (vs. “unaccented”) words in Japanese.

(ii) **L1 Phonology** determines the actual prosodic form.

In Tokyo Japanese, (i) determines that a loanword is processed as ‘accented’ (not “unaccented’), and then (ii) determines the position of accent.

Kubozono’s explanation does not appear to apply to Nakijin Ryukyuan in first sight. If perceptual similarity works, Type C, which has an obligatory pitch fall just like the same as Japanese loanwords, is the best one. But in fact, as shown above, loanwords take Type B in NR. It means that perceptual similarity hardly works. Nevertheless, this paper claims that Kubozono (2006) is correct in Nakijin Ryukyuan in a broad sense. What should be taken into consideration is the accent system of NR. Type C is the most marked accent type. In addition, the most important distinctive feature of NR is not pitch-fall but pitch-rise. These are sufficient reasons not only for avoiding to process loanwords as Type C but also for ignoring pitch-fall of input. In this way, Type C is ruled out. Then, it is no wonder that Type B, the most unmarked one, is chosen as the loanword accent.

Conclusion

This paper discussed loanword accent of Nakijin Ryukyuan. One of the two factors proposed by Kubozono (2006) does not work in NR. This is probably because NR has an accent system in which pitch-rise is the most important and because an accent type, which is pronounced with pitch-fall, is a very minor accent type in the synchronic view, i.e. Type C. Accordingly, in NR loanword accent system, Perceptual Simi-
larity hardly works and L1 Phonology has a strong power. By taking the unique condition to NR into consideration, it is safely said that what is argued in Kubozono (2006) is correct in NR loanword accent too.

Terakawa & Kusaka (1944) uses a term “*kihon akusento* (basic accent)”. They claim that it is the pitch pattern of each Japanese dialect which comes out when a speaker pronounces a meaningless row of moras. Generally speaking, in a meaningless row of moras or nonce words, perceptual similarity cannot work. In this sense, “*kihon akusento*” can also be interpreted as a case where perceptual similarity does not work, and then L1 phonology assigns the most unmarked accent of the language concerned.

**Notes**

1. *This study focuses on the western NR.*
2. Lawrence (1990) claims another 3-Type accent system.

**References**


