

Pitch patterns of Mongolian compound place names

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1. Introduction

Mongolian accent is not distinctive in relation to meaning. With respect to Mongolian accent, not a few researches have been carried out, including studies which claim that Mongolian has stress accent (Hangin 1968), pitch accent (Kakudo 1982) and both of them (Ozawa 1994). In recent research Karlsson (2005) clarified the pitch patterns of Khalkha Mongolian, taking the position that Mongolian has no lexical stress.

However, the accent of compound words in Mongolian has not been clarified well so far. In this study, pitch patterns of Mongolian compound place names which consist of two words, such as *ulaan-baatar* and *bör-nүүр*, are analyzed, and it is clarified that 1) most compound place names are pronounced not as two words but as a single phonological word, 2) in general the word accent of the first element is preserved and that of the second element disappears, and 3) in some words, the number of syllables, vowel length and syllable structure are related to the pitch pattern.

2. Previous researches

2.1. Kakudo (1982)

Kakudo (1982) describes Khalkha Mongolian accent with ‘pitch units’, which are defined as (C)V (V is a short vowel; long vowels and diphthongs are analyzed as VV).

- (1) PP = HL, PPP = LHL, PPPP = LHHL, PPPPP = LHHHL ...
(P = pitch unit, L = low pitch, H = high pitch)

With respect to the accent of compound words, he pointed out that the accent of compound words is not straightforward as can be seen below.

- (2) a. *ulaanbaatar* (‘Ulaanbaatar’ < *ulaan* ‘red’ + *baatar* ‘hero’)
ul|aanbaa|ta|r, ul|aan|baa|ta|r, ul|aan|ba|a|ta|r. (there are 3 patterns)
(2) b. *uls tör* ‘government’ (< *uls* ‘state’ + *tör* ‘administration’)
ul|s|tö|r (pronounced with only one pitch peak, that is to say, as one word)
c. *tsagaan tölgoi* ‘alphabet’ (< *tsagaan* ‘white’ + *tölgoi* ‘head’)
tsa|ga|an|tö|l|gö|i or tsa|ga|an|tö|l|gö|i (not pronounced as one word)

Kakudo (1982) shows that whether a compound word has two pitch peaks or only one peak seems to be related to the length of the first element of the compound word.

2.2. Ichinose (1992)

Ichinose (1992) deals with the accent of compound words in the Chakhar dialect. According to Ichinose (1992), in general the accent of the first element is preserved in compound words, but in compound words which consist of a monosyllable word and a word with a long vowel, the accent of the second element can be preserved and the accent pattern is different from that of non-compound noun phrase.

- (3) *göx* ‘blue’ + *nүүр* ‘lake’
a. ,_göx 'nүүр (place name)...compound word
b. 'göx ,nүүр ‘blue lake’...noun phrase (Ichinose 1992: 110 (5) (5'))

2.3. Karlsson (2005)

In Karlsson (2005), word accent and intonation in Khalkha Mongolian are analyzed in the framework of Autosegmental Theory. The word accent is a rising (LH) tone aligned with the first two morae of the word. The

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first L tone often disappears in monosyllabic words and polysyllabic words with a long vowel in the initial syllable. Word accent is downstepped.

However, Karlsson (2005) shows, by referring to the following examples, that the accent of compound words is controversial and further research is needed on it.

- (4) a. *galt tereg* ‘train’ (< *galt* ‘fire’ + *tereg* ‘car’)
 - ...one LH contour = single phonological word
- b. *ulaanbaatar* ‘Ulaanbaatar’ (< *ulaan* ‘red’ + *baatar* ‘hero’)
 - ...two LH contours = two phonological words
- c. *enx taiwanii* ‘peaceful’ (< *enx* ‘peaceful’ + *taiwan* ‘peace’ + *ii* <genitive>)
 - ...different from speaker to speaker

3. Pitch patterns of compound place names

3.1. Why place names?

Whether a sequence of words form a compound word or not should be determined synthetically from morphological, syntactic, semantic and phonological viewpoints. Syntactically, for example, another word is never inserted between two elements of a compound word. Since the purpose of this study is to clarify the pitch pattern of compound words, the words used in this study should be absolute compound words from all viewpoints. Place names can be regarded as compound words from all points of view

3.2. The place names used in the survey

The compound place names used in this survey were selected by focusing on the number of syllables of each element (monosyllable or bisyllable), and on whether each element has a long vowel or a diphthong (henceforth “long vowel” includes diphthongs) or not. The structures of the compound place names in this study and their respective numbers are shown in Table 1.

Table 1: The structures of the compound place names in this study and their respective numbers

		the second element					
		no. of syll	long vowel	monosyllable		bisyllable	
				with	without	with	without
the first element	monosyllable	with	0※	2	3	3	
		without	3	3	6	3	
	bisyllable	with	4	3	9	3	
		without	3	3	6	3	

(※There are no place names with this structure.)

Total: 57 words

3.3. The methodology of the survey and the informants

The survey was carried out by having informants read compound place names inserted into the following carrier sentence.

- (5) Ter ___ gedeg sUmaas irsen. ‘He came from the town of ___.’

The sentences were recorded and the pitch patterns were analyzed with praat (Boersma and Weenik 2012). In this study, only the pitch contour was focused on and the absolute value of F0 was not paid attention to.

The data was provided by two speakers of Khalkha Mongolian (T and P).

T...female, 29 years old, birth place: Ulaanbaatar

P...female, 21 years old, birth place: Rashaant (about 200 km from Ulaanbaatar)

4. Results

4.1. [monosyllable word - monosyllable word]

The compound place names composed of two monosyllable words can be further classified into 3 types in relation to vowel length, as below.

- (6) (a word with a long vowel) + (a word with a short vowel) = L-S structure
 (a word with a short vowel) + (a word with a long vowel) = S-L structure
 (a word with a short vowel) + (a word with a short vowel) = S-S structure

The pitch patterns of each structure are shown in (7).

- (7) L-S structure (e.g. sain-shand, zuun-mod): H-L
 S-L structure: two patterns were seen
 ᠪᠣᠷ-ᠨᠤᠸᠤᠷ, **ix-ᠰᠤᠯ**: L-H / **mönx-xaan**: H-L
 S-S structure (e.g. xan-bogd, shine-jinst): H-L

The compound place names with an S-L structure are problematic. Figure 1 and Figure 2 show the pitch patterns of **ᠪᠣᠷ-ᠨᠤᠸᠤᠷ** and **mönx-xaan**, respectively, spoken by informant P.

Figure 1: pitch contour of **ᠪᠣᠷ-ᠨᠤᠸᠤᠷ** (written as bor-nuur in the figure)

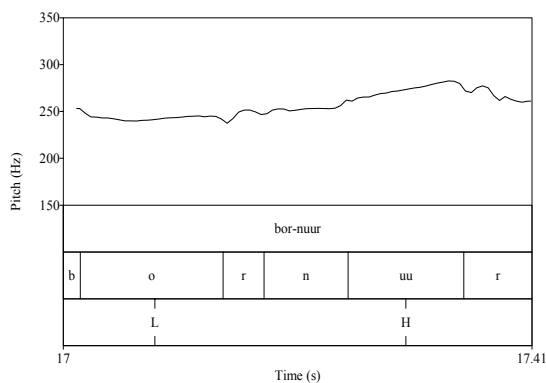
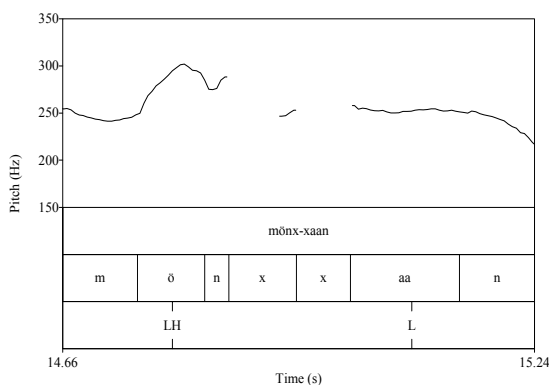


Figure 2: pitch contour of **mönx-xaan**



The difference in phonological structure between **mönx-xaan**, which is pronounced with H-L pitch, and **ᠪᠣᠷ-ᠨᠤᠸᠤᠷ** and **ix-ᠰᠤᠯ**, which have L-H pitch, is that the former has a super-heavy syllable (CVCC) in the first element but the latter do not. It may be said that super-heavy syllables can attract H pitch.

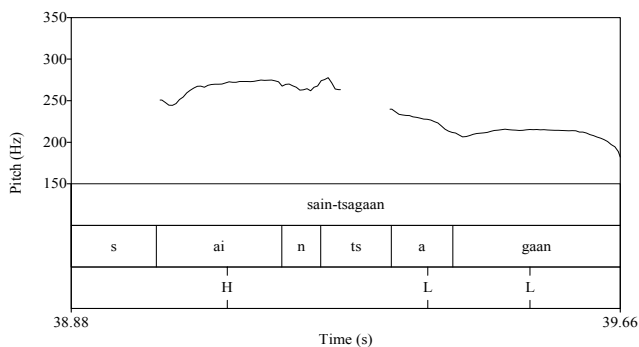
4.2. [monosyllable word - bisyllable word]

4.2.1. When the first element has a long vowel

In this case, the first element is consistently pronounced with higher pitch than the second element.

It is important to note that no second pitch peak appears in the second element in most compound place names. In other words, the second element has usually lost its own accent and the sequence of two words is pronounced with a single pitch peak, that is, as a single phonological word.

Figure 3: pitch contour of sain-tsagaan (informant T)



4.2.2. When the first element has a short vowel

In this case, the results are different depending on whether the second element has a long vowel or not. When the second element has no long vowel, the word sequences are always pronounced with a H-LL pitch contour. On the other hand, when the second element has a long vowel, there are several pitch patterns.

(8) no long vowel: H-LL (e.g. böx-mörön, xan-xöngöl)

with a long vowel: mönx-xairxan, xar-airag, tsogt-owoo = H-LL /

sux-baatar = L-HL / bat-ölzii = L-HH (or gradually upstepped)

Figure 4: pitch contour of tsogt-owoo (written as tsogt-owoo in the figure)

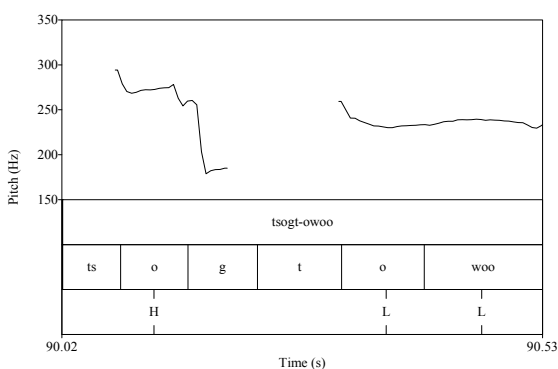
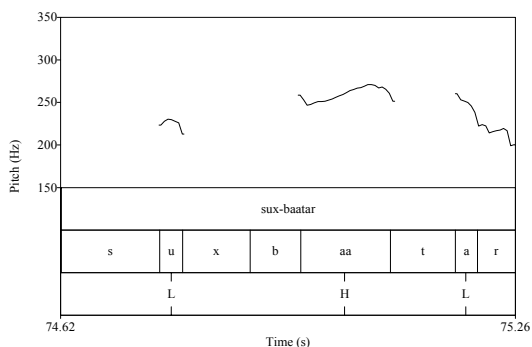


Figure 5: pitch contour of sux-baatar



If there is a long vowel in the second element, the second element can be pronounced with higher pitch than the first one. It seems that the long vowel can attract H pitch.

However, there are also compound words with the opposite pitch contour, i.e. the first element is pronounced with higher pitch than the second one. As far as this investigation is concerned, it can be said that when the first word consists of a super-heavy syllable (CVCC), it always attracts a high pitch, which is parallel to the result of *mönx-xaan* (H-L) as shown in 4.1, although the reverse is not true.

The discussion so far can be summarized as follows:

- (9) When the first element is a monosyllable word,
- a. in general, the first element has high pitch and the second element has low pitch,
 - b. the second element can attract high pitch if the second element has a long vowel,
 - c. (but) a super-heavy syllable, or CVCC in the first element gets high pitch, even if the second element has a long vowel.

(9a) and (9b) constitute the same result as that of Ichinose (1992). (9c) suggests the possibility that the location of accent is related to syllable structure.

4.3. [bisyllable word - monosyllable word]

These compound place names are consistently pronounced with a LH-L pitch contour without regard to whether a long vowel is present or not, except for two examples. This means that most of them are pronounced as a single phonological word and the pronunciation is the same as that of a simplex word, in which LH is aligned with the first two morae. The two exceptions areas follows:

- (10) *ider-meg*: pronounced with overall rising pitch

orxɔn-tʊl: LH-H in informant T, which is not one but two phonological words

4.4. [bisyllable word - bisyllable word]

These compound place names are consistently pronounced with a LH-LL pitch contour regardless of whether a long vowel is present or not. This is also the pitch pattern of a single phonological word. When the first syllable of the first element has a long vowel, it is pronounced with H pitch. This corresponds to the claim in Karlsson (2005) that the first L tone often disappears in polysyllabic words with a long vowel in the initial syllable.

5. Summary

The conclusions of this study are as follows:

- 1) In most compound place names, the pitch peak in the second element usually disappears and as a result they are pronounced as a single phonological word.
- 2) The basic pitch patterns of compound place names are as follows:
 - i) If the first element is a bisyllable word, a rising pitch (LH) appears in the first element and the pitch peak is on the second vowel of the first element. The second element has lower pitch as a whole than the first element.
 - ii) If the first element is a monosyllable word, the pitch peak is on the vowel of the first element and the second element has lower pitch as a whole than the first element unless the second element has a long vowel.
 - iii) If the first element is a monosyllable word and the second element has a long vowel, the pitch peak tends to be on the long vowel in the second element, probably because the long vowel can attract H pitch.
 - iv) Even if the second element has a long vowel, a super-heavy syllable (CVCC) in the first element can attract H pitch instead of the long vowel.
- 3) (As can be concluded from 2,) the number of syllables, vowel length and syllable structure are related to the pitch pattern of compound place names.

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