

Reduplication with fixed tone pattern in Kammu

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Abstract

In this paper we show that speakers of both tonal and non-tonal dialects of Kammu use a fixed tone pattern high–low for intensifying reduplication of adjectives, and also that speakers of the tonal dialect retain the lexical tones (high or low) while applying this fixed tone pattern.

Background

Kammu (also known as Khmu, Kmhmu', etc.) is an Austroasiatic language spoken in the northern parts of Laos and in adjacent areas of Vietnam, China and Thailand. The number of speakers is at least 500,000. Some dialects of this language have a system of two lexical tones (high and low), while other dialects have preserved the original toneless state. The toneless dialects have voiceless and voiced syllable-initial stops and sonorants, which have merged in the tonal dialects, so that the voiceless ~ voiced contrast has been replaced with a high ~ low tone contrast. For example, the minimal pair *klaaŋ* 'eagle' vs. *glaaŋ* 'stone' in non-tonal dialects corresponds to *kláaŋ* vs. *klàaŋ* with high and low tone, respectively, in tonal dialects. Other phonological differences between the dialects are marginal, and all dialects are mutually comprehensible. See Svantesson (1983) for general information on the Kammu language and Svantesson and House (2006) for Kammu tonogenesis.

This state with two dialects that more or less constitute a minimal pair for the distinction between tonal and non-tonal languages makes Kammu an ideal language for investigating the influence of lexical tone on different prosodic properties of a language. In this paper we will deal with intensifying full reduplication of adjectives from this point of view.

Intensifying or attenuating reduplication of adjectives occurs in many languages in the Southeast Asian area, including Standard Chinese, several Chinese dialects and Vietnamese. As is well known, Standard Chinese uses full reduplication combined with the suffixes *-r-de* to form adjectives with an attenuated meaning

(see e.g. Duanmu 2000: 228). The second copy of the adjective always has high tone (denoted $\bar{}$), irrespective of the tone of the base:

<i>jiān</i>	'pointed'	>	<i>jiān-jiān-r-de</i>
<i>hóng</i>	'red'	>	<i>hóng-hōng-r-de</i>
<i>hǎo</i>	'good'	>	<i>hǎo-hāo-r-de</i>
<i>màn</i>	'slow'	>	<i>màn-mān-r-de</i>

Thus, the identity of the word, including the tone, is preserved in Standard Chinese reduplication, the tone being preserved in the first copy of it.

In Kammu there is a similar reduplication pattern, intensifying the adjective meaning. For example, *bliá* 'pretty' (non-tonal dialect) is reduplicated as *bliá-bliá* 'very pretty'. This reduplication has a fixed tone pattern, the first copy being higher than the second one (although, as will be seen below, a few speakers apply another pattern).

Material and method

We investigate two questions:

(1) Is the high–low pattern in intensifying reduplication used by speakers of both tonal and non-tonal dialects?

(2) For speakers of tonal dialects: is the lexical tone of the adjective preserved in the reduplicated form?

For this purpose we used recordings of tonal and non-tonal dialect speakers that we made in northern Laos in November 2007, and in northern Thailand in February 2008. A total of 24 speakers were recorded, their ages ranging between 14 and 72 years. The recordings included two sentences with reduplicated adjectives:

<i>naa bliá-bliá</i>	'she is very pretty'
<i>naa thaw-thaw</i>	'she is very old'

This is the form in the non-tonal dialect; in the tonal dialect, the reduplicated words are *plia-plia* with low lexical tone, and *tháw-tháw* with high; the word *naa* 'she' has low tone in the tonal dialect. Each speaker was asked to record the sentences three times, but for some, only one or two recordings were obtained or

possible to analyse (see table 1 for the number of recordings for each speaker). Two of the speakers (Sp2 and Sp4) were recorded twice. For four of the 24 speakers no useable recordings were made. Of the remaining 20 speakers, 8 speak the non-tonal dialect and 12 the tonal dialect.

The maximal fundamental frequency was measured in each copy of the reduplicated words using the *Praat* analysis program.

Results and discussion

The results are shown in table 1.

Concerning question (1) above, the results show that most speakers follow the pattern that the first copy of the reduplicated adjective has higher F0 than the second one. 14 of the 20 speakers use this high–low pattern in all their productions. These are the 5 non-tonal speakers Sp1, Sp3, Sp5, Sp6, Sp10 and the 9 tonal speakers Sp2, Sp4, Sp13, Sp16, Sp20, Sp21, Sp22, Sp24, Sp25. Two speakers, Sp9 (non-tonal male) and Sp17 (tonal female) use a completely different tone pattern, low–high. The remaining speakers mix the patterns, Sp8 and Sp18 use high–low for *blia-blia* but low–high for *thaw-thaw*, and the two speakers Sp11 and Sp23 seem to mix them more or less randomly. As seen in table 1, the difference in F0 between the first and second copy is statistically significant in the majority of cases, especially for those speakers who always follow the expected high–low pattern. Some of the non-significant results can probably be explained by the large variation and the small number of measurements for each speakers.

The second question is whether or not the tonal speakers retain the tone difference in the reduplicated form. In the last column in table 1, we show the difference between the mean F0 values (on both copies) of the productions of *thaw-thaw/tháw-tháw* and *blia-blia/plia-plia*. For 11 of the 12 speakers of tonal dialects, F0 was, on the average, higher on *tháw-tháw* than on *plia-plia*, but only 2 of the 8 speakers of non-tonal dialects had higher F0 on *thaw-thaw* than on *blia-blia*. An exact binomial test shows that the F0 difference is significant ($p = 0.0032$) for the tonal speakers but not for the non-tonal ones ($p = 0.144$).

One might ask why the majority of non-tonal speakers have higher F0 on *blia-blia* than on *thaw-thaw*. One possible reason is that *blia-blia* was always recorded before *thaw-thaw*, and this may have led to higher engagement when

blia-blia was recorded than when *thaw-thaw* was recorded just after that; see House et al. (forthc.) for the role of the speakers' engagement for Kammu intonation.

Conclusion

The results show that the great majority of the speakers we recorded used the expected fixed pattern, high–low, for intensifying reduplication, independent of their dialect type, tonal or non-tonal. Furthermore, the speakers of tonal dialects retain the contrast between high and low lexical tone when they apply this fixed tone pattern for adjective reduplication.

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Table 1. F0 means for each reduplicated word and each speaker. The columns n1 and n2 show the number of repetitions of the reduplicated words, 1st and 2nd refers to the F0 means in the first and second copy of the reduplicated adjective, and diff is the difference between them. The test column shows the results of t-tests for this difference ($df = n1 + n2 - 2$). The column difference shows the F0 difference between each speaker's productions of thaw-thaw and blia-blia (means of first and second copy).

	<i>blia/plia</i>					<i>thaw/tháw</i>					<i>differ- ence</i>
	n1	1st	2nd	diff	test	n2	1st	2nd	diff	test	
<i>non-tonal male</i>											
Sp1	3	178	120	58	p < 0.001	2	172	124	48	p < 0.05	-1
Sp3	3	149	115	34	p < 0.001	3	147	109	38	p < 0.001	-4
Sp5	3	216	151	65	p < 0.01	3	205	158	47	p < 0.01	-1
Sp6	3	186	161	25	p < 0.01	3	181	142	39	p < 0.05	-9
Sp8	3	176	146	30	n.s.	1	155	172	-17	—	2
Sp9	3	126	147	-21	n.s.	3	105	127	-22	p < 0.05	-20
<i>non-tonal female</i>											
Sp10	2	291	232	59	n.s.	2	287	234	53	n.s.	-2
Sp11	3	235	224	11	n.s.	3	232	234	-2	n.s.	3
<i>tonal male</i>											
Sp13	2	173	140	33	n.s.	3	213	152	61	p < 0.05	25
Sp20	4	119	106	13	n.s.	3	136	119	17	n.s.	14
Sp22	3	192	136	57	p < 0.05	3	206	134	72	n.s.	6
Sp23	2	190	192	-2	n.s.	2	207	210	-3	n.s.	17
Sp24	3	159	132	27	p < 0.01	3	159	129	30	p < 0.01	-2
<i>tonal female</i>											
Sp2	6	442	246	196	p < 0.001	6	518	291	227	p < 0.001	61
Sp4	5	253	202	51	n.s.	6	257	232	25	p < 0.05	17
Sp16	3	326	211	115	p < 0.05	3	351	250	101	p < 0.05	31
Sp17	3	236	246	-10	n.s.	3	251	269	-18	n.s.	19
Sp18	3	249	208	41	p < 0.05	3	225	236	-11	n.s.	2
Sp21	5	339	210	129	p < 0.001	6	316	245	71	p < 0.001	6
Sp25	3	240	231	9	n.s.	3	269	263	6	p < 0.01	31

