

## **A Four-Tone Autosegmental Analysis on the Tone Sandhi of Lhasa Tibetan**

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Lhasa Tibetan (and other U-Tsang and Kham dialects) as a tone language has attracted a reasonable amount of attention among phonologists, as the Tibetan orthography provides an almost perfect record, with the only exception of the now-omitted post-suffix *-d*, for the emergence and distribution of the tones. It is generally regarded true that Lhasa Tibetan has six surface tonal values, namely, using Chao's five-pitch tone letter system, 55, 54, 52, 113, 12, and 132. Given these six surface tones, whether Lhasa Tibetan should be best analyzed phonemically as a two-tone, four-tone, or six-tone system is still left for open debate (Hu Tan 2002). This paper attempts to address this issue based on a phonetic study of tone recognition conducted in Lhasa.. In particular, this paper examines and argues against a powerful and elegant analysis of the Lhasa Tibetan (and other related dialects) by Duanmu (1992), an autosegmental treatment based on a two-tone system. The result from our field experiment will show that Lhasa Tibetan has evolved beyond a two-tone system to a full-fledged four-tone system. Consequently, the tone sandhi rule of spreading suggested by Duanmu needs to be reevaluated against this new data. This paper suggests that the tone spreading may be historically plausible but in the face of the shifting of the tonal system, alternative analyses must be constructed to account for the data. This paper will offer one such alternative based on a four-tone system.

Specifically, Duanmu divides six surface tones into two groups (H and LH) and allow the syllable structure to automatically derive the surface tonal values, as shown in (1)

- (1) H group: 55 (long rhyme < V + sonorant), 54 (short, open syllable)  
52 (short, V + obstruent)  
LH group: 113 (long rhyme < V + sonorant), 12 (short, open syllable)  
132 (short, V + obstruent)

Then he accounts for the tone sandhi phenomenon in a simple and straightforward manner, summarized in (2):

- (2) Lhasa tone sandhi in a disyllabic combination  
(i) two lexical tones: H and LH  
(ii) delete second syllable, associate tone with vowel  
(iii) spread L to the second syllable if it is long

Despite the unusual assumption for the underlying tonal contrasts H vs. LH (and not the expected H vs. L), Duanmu's analysis is consistent with the orthography. In our study, it is shown that surface tonal values (i.e. the contours of pitch) have become the primary distinctive feature for meaning recognition. The reduction (to slight glottal stop) or total omission of the syllable final obstruents has fundamentally changed the predictable nature of variant surface tones in the H (54 and 52) and L groups (12 and 132) into separate lexical tones. Based on this conclusion, the author offers an alternative analysis of the tone sandhi in Lhasa Tibetan.