Pitch Realization of the Genitive Phrases in Lhasa Tibetan

Lhasa Tibetan, a central Tibetan language, is a register tonal language. Its tonal inventory has been of great controversy among Tibetan tonologists, the number of contrastive tonal melodies ranging from zero to seven (Sprigg 1993, Hu 2002). However, most modern scholars consider that Lhasa Tibetan has two contrastive lexical tones, L(H) and H (Duanmu 1992; Sprigg 1993; Sun 1997; Denwood 1999; DeLancey 2003; Hsieh & Kentowicz 2007). Most previous research on Lhasa Tibetan tones focuses on tone sandhi in compounds, but little work has been conducted on tonal interactions between words. Nonetheless, the tonal status of case particles, such as the genitive particle gi, is unclear: they are often treated as atonal (Denwood 1999).

In this paper, we try to uncover: (a) the inventory of surface tone melodies of monosyllabic words, (b) their underlying representation; (c) the tonal status of the genitive case particle -gi; and (d) patterns of tonal interaction in simple noun phrases. In order to tackle the first point (a), we elicited a paradigm of monosyllabic words with an onset of bilabial stops (p, pʰ, b) and nasals consonants (m) and with varying rhymes (V, VV, Vk, VN, Vr, Vl). The pitch profile of these words were extracted at normalized time positions and compared. For the latter three objectives (b-d), we selected a minimal pair of monosyllabic noun words, phè ‘powder’ and phè̀ ‘measurement cup’, to construct and elicit two paradigms of genitive constructions: one with the classical form and one with the colloquial form. The genitive construction was chosen because it is the least complicated type of noun phrase in Lhasa Tibetan. It consists of a sequence of four nouns with interspersed genitive particles, as in (1).

(1) Classical construction: phè-í phè-í phè-í phè
    Colloquial form: phè̀ phè̀ phè̀ phè̀ (with coalescence of the genitive suffix)

Each paradigm has 16 possible constructions. Each of these constructions was recorded five times from a native Lhasa Tibetan speaker. The F0 data is then analyzed statistically. The analysis of pitch realization of these paradigms is couched under two theoretical models: Pitch target approximation model (PTA) (Xu 2002) and Register Tier Theory (RTT) (Snider 1999). The RTT will account for the tonal alternation and the PTA will predict the phonetic implementation of the surface melody.

We found four basic surface tonal melodies (high level, high falling, low level and low rising). They are determined by an interaction of the underlying tone and the rhyme. Under the PTA framework, this paper found there is evidence of regressive high-raising and regressive low-lowering at phrase-initial position. Under the framework of RTT we propose that the genitive suffix has an underlying melody of Ll and that the noun word has underlying melody of Hh or LhHh. We argue that despite its greater complexity, this two tier approach is needed to account for both the contrastive pitch level and tonal alternation found in the Lhasa Tibetan genitive constructions. For instance, the F0 of the uncoalesced high tone word phè (Hh) at phrase-initial position of the classical construction (and citation form) is significant higher than those found in the coalesced form phè in the colloquial construction. We argue that F0 lowering in the coalesced form is the result of the regressive low register (l) spreading from the low tone genitive particle (Ll) and yields the final form of (Hl).


