4th Workshop on Sound Change- WSC4- Edinburgh 20-22 April 2017

On the retention of an old feature in the Tamang dialect of Taglung

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The languages of the Tamang group (Tibeto-Burman, Nepal) are presently in the process of developing tones from an earlier opposition of voicing on word-initial consonants ("tone split" in an old two-tone system: voiceless onsets > 2 high tones; voiced onsets > 2 low tones). In this group of languages, we observe a large amount of variation between dialects, between speakers, and within speakers concerning the realization of the features which define each tone. We interpret these variations as different degrees of retention of earlier features (Mazaudon, 2012). A previous phonetic study of the Tamang dialect of Risiangku (Mazaudon & Michaud, 2008) demonstrated the use of F0 and phonation, and to a lesser degree of initial stop voicing, as cues to the four tones of the system. The retention of breathiness and stop initial voicing with low pitch tones may be explained by mutual enhancement (Silverman, 1997).

In the Tamang dialect of Taglung, one of the two low tones has evolved into a high falling tone. However, we still observe occasional retention of word-initial voicing (word-medial voicing is not contrastive), not only on the present-day low tone, but also on the historical low tone which is no longer low. The conditioning of this retention is the object of the present study.

In order to examine the distribution of initial stop/affricate voicing, we analyzed electroglottographic (EGG) data of 351 word-tokens in total (including 250 different words) from four speakers (2 males) of the Tamang dialect of Taglung, recorded in Taglung village, Nepal. The analyzed words are monosyllabic nouns and verbs, the latter necessarily followed by a suffix, each produced three times in isolation and three times in a carrier sentence. The target syllable carries one of the tones T1–T4: T1 and T2 are high tones evolved from voiceless onsets; T3 (low) and T4 (high falling) are tones evolved from voiced onsets; F0 contours of the modern tones of one speaker are shown in Figure 1. Note that tone is carried by the entire word. Our preliminary results show different factors which determine the presence of initial voicing.

First, and most important, the tonal context. Onset voicing occurs only on T3 and T4 syllables. Hence, the recently created high/low opposition in Tamangish languages is probably still tightly related to initial voicing (Svantesson, 2014). We assume that this link is memorized at the cognitive level. One speaker shows exceptions, which we will explain below.

Second, lexical item. The only stable and systematic initial voicing across all speakers and contexts concerns the following words, all on T4 and all with labial initials: *⁴bli* ('four'), *⁴bre:* ('eight'), *⁴bra:* ('cliff'), *⁴baŋ* ('strength') and its derived form *⁴baŋba* ('be strong'). The word *⁴bra:* ('cliff') forms a minimal pair with *⁴pra:* ('flour'), probably replacing an old contrast unrelated to voicing. The remaining three words are all frequent, which leads us to suspect an effect of lexical frequency. This is in line with Bybee (2001)'s idea that high-frequency items are most resistant to analogical change.

Third, phonetic environment. Onsets of T3 and T4 syllables are more frequently voiced in environments that phonetically favor consonantal voicing: with labial onsets, high vowels (or glides) (Ohala & Riordan, 1979) and in carrier sentences (that is, preceded by another word). Individual variation is greatest at this level: labial onsets clearly facilitated voicing only for speaker M1, and high vowels (or glides) only for speakers F1 and F2 (see Table 1). While all speakers produced occasional voicing in intervocalic and unstressed context (sentence internally) on T3 and T4 words, speaker F2 extended the voicing to T1 and T2 words (where voicing is not etymological), demonstrating a new function of voicing in her usage.

In sum, in transphonologization, the earlier features are retained especially on phonetically favored units, but not uniquely. They also seem to be retained preferentially on high-frequency items. If coarticulation-based sound change begins with high-frequency items (e.g., lenition: Pierrehumbert, 2001; Hay & Foulkes, 2016), sound change involving loss of an earlier feature seems to begin with low-frequency items, as shown by our limited data. In this it is comparable to analogical regularization, as in morphology (e.g., French verb conjugation). This hypothesis, which needs to be confirmed by a larger-scale investigation, is in line with the view that the realization of redundant features that are left over from a historical change is willful and intended, contrary to the realization of redundant features that are coarticulation-based, which is automatic and predictable.

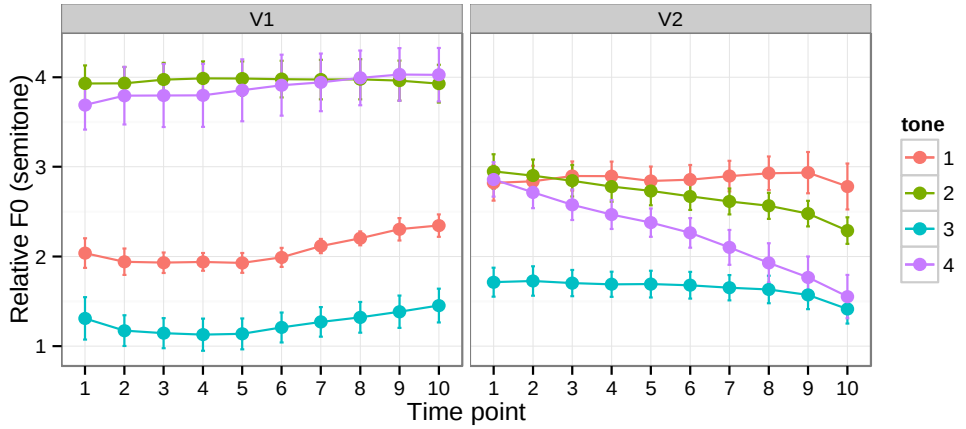

Figure 1. Illustration of F0 contours (relative to frames) of the four tones of /k/-onset verbs (V1: first vowel; V2: second vowel), from speaker M1 (36-year-old male).

Table 1. Number and proportion of T3 and T4 words with quasi-systematic word-initial voicing in carrier sentences (for M1 and F1: sentence-internally; for F2: sentence-initially), according to context, from three speakers (M1: 36-year-old male; F1: female in her 40s; F2: female in her 70s). Words with constantly voiced onsets (⁴bli, ⁴bre:, ⁴bra:, ⁴baŋ, and ⁴baŋba), and words with cluster onsets (few items) are excluded.

	M1	**F1**	**F2**
labial (p-b)	7/11 (64%)	1/4 (25%)	2/14 (14%)
dental (t-d)	2/9 (22%)	0/4 (0%)	5/19 (26%)
denti-alveolar (ts-dz)	0/11 (0%)	3/7 (27%)	5/7 (71%)
velar (k-g)	0/12 (0%)	0/6 (0%)	0/10 (0%)
high vowel/glide (i, u, j)	3/16 (19%)	3/7 (43%)	10/19 (53%)
non-high vowel	6/27 (22%)	1/14 (7%)	3/31 (10%)

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