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Tone and voice quality in TGTM (Tamang-an) languages

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The tones of the TGTM or Tamangan languages, involve both F0 and voice quality characteristics, as was reported in a number of studies from the 1970s. Two of the four tones (tones 3 and 4) were reported to be both breathy and low in most dialects of the group.

For the present research (thirty years later), audio and electroglottographic data were collected from 5 speakers of the Risiangku Tamang dialect in their 30s or 40s. Voice quality was estimated by computing the glottal open quotient. The preliminary results confirm that in the speech of three speakers (M2, M3, M5), tones 3 and 4 have a higher open quotient (which provides an indirect cue to the degree of breathiness) than tones 1 and 2. Surprisingly though, tone 3 is more clearly breathy than tone 4, especially for speaker M2. This result differs from what could be considered the opinion of native speakers as reflected in the way they transcribe their language when using the devanagari script : the « voiced aspirate » series is used to transcribe tone 4 words, and the plain voiced for tone 3. The difference in open quotient between the four tones for the other two speakers is negligible or inconsistent.

The study confirms the great variability of Tamang tones in terms of F0, as well as in terms of open quotient and supports an analysis of modern Tamang tones as possessing several correlates. It also offers an insight into ongoing change in the prosodic system of Tamang and other TGTM languages.

References :

- Abramson, A.S.; Thongkum, T.L.; et al., 2004. Voice register in Suai (Kuai): An analysis of perceptual and acoustic data. *Phonetica*, 61(2-3), 147-171.
- Hale, Austin & David Watters eds, 1973, *Clause, Sentence and Discourse Patterns in selected languages of Nepal*, Norman, Oklahoma, SIL (SIL publications in Linguistics and related fields: 40), vol 4.
- Henrich, N.; d'Alessandro, C.; et al., 2004. On the use of the derivative of electroglottographic signals for characterization of non-pathological voice phonation. *Journal of the Acoustical Society of America*, 115(3), 1321-1332.
- Mazaudon, M., 2004, On tone in Tamang and neighbouring languages: synchrony and diachrony, Proceedings of the symposium «*Cross-linguistic studies of tonal phenomena*», Tokyo, Japan, 2004.
- Michaud, A. and M. Mazaudon, Pitch and voice quality characteristics of the lexical word-tones of Tamang, as compared with level tones (Naxi data) and pitch-plus-voice-quality tones (Vietnamese data), Proceedings of «*Speech Prosody 2006*», Dresden, 823-826.
- Michaud, Alexis & Vu-Ngoc Tuân, 2004, Glottalized and Nonglottalized Tones under Emphasis: Open Quotient Curves Remain Stable, F0 Curve is Modified, Proceedings of «*Speech Prosody 2004*», Nara, Japan, 745-748.
- Rothenberg, Martin & J.J. Mahshie, 1988, Monitoring vocal fold abduction through vocal fold contact area, *Journal of Speech and Hearing Research* 31:338-351.