On the role of manner and place in Kurtöp tonogenesis

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According to the established model of tonogenesis (e.g. Haudricourt 1954; Matisoff 1970, etc.), a contrast in consonant type conditions pitch on the following vowel. Voiceless onsets condition high pitch and voiced onsets condition low pitch. Once pitch has phonologized, the original contrast in voicing ceases to be distinctive. What remains unknown, however, is the detailed nature of the change; for example, we do not know if the change is instantaneous or if it slowly spreads from phoneme to phoneme in the language. This study builds on Hyslop (2009), showing that in the Tibeto-Burman language Kurtöp, place and manner of consonant trigger play a role in the development of tone.

Hyslop (2009) has shown that in Kurtöp, tone first phonologized following sonorant consonants and then the palatal fricative and that tonogenesis is now underway following the remainder of the obstruents. In order to ascertain the continued pathway of tonogenesis, a production study was designed. The study was designed to 1) compare fundamental frequency on vowels following voiced and voiceless stops and 2) compare Voice Onset Time (VOT) values for stops. We predict that pitch will be statistically distinct on vowels while VOT values for voiced stops will vary dramatically as the stops devoice as part of the tonogenesis process.

Five native speakers of Kurtöp produced 1416 tokens (354 words * 4 repetitions). The tokens equally represent voicing (voiced, voiceless, and voiceless aspirated) and phonetic environment was controlled for place of articulation (labial, dental, retroflex, palatal, velar) and vowel shape. VOT was measured in word-initial position and F0 was measured at nine equidistant points on the following vowel.

Results also show that Kurtöp voiceless stops condition a fundamental frequency approximately 30 hertz higher than voiced stops, and that this difference is maintained over the duration of the vowel. With regard to voicing in the obstruents, we now see that the dental fricative is more often devoiced than any of the stops, suggesting that tonogenesis is further along in that environment. In regards to VOT of stops, phonologically “voiced” stops are indeed often realized as voiceless, however not consistently. Retroflex stops are most likely to be realized as voiceless, followed by the palatals and velars, and finally by the labials and dentals, which are most likely to still be phonetically voiced.

Kurtöp gives us a rare opportunity to examine tonogenesis in process. In doing so we can gain insight into the nature of tonogenesis and perhaps speculate about sound change in general. The current study suggests that tonogenesis is a slow-moving process, not necessarily applying to an entire phonemic system in one step.
References: