PROTO-LOLOISH TONES

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ABSTRACT

Recent discussion of tonogenesis has shown what kinds of development in the pitch and contour realization of tone are likely or possible. It is now possible to make hypotheses about the phonetic values of reconstructed tone categories. In this paper, pitch values are proposed for Proto-Loloish tone categories, and the developments from the Proto-Loloish tone system to those of various attested Loloish languages are traced. Some insights into the process of tonogenesis, and the Proto-Sino-Tibetan tone system, are gained.

1. TONOGENESIS

In this paper, the relative pitch values of tones are represented with Chao (1930) tone-letters. These allow a five-step division of the pitch range, 1 (lowest) to 5 (highest). Level tones can be represented with two identical pitch-numbers; e.g. 55, high-level. Contour tones can be represented with pitch-numbers giving beginning, middle if necessary, and final pitches; e.g. 51, high-to-low falling; 313, mid falling-rising. In most tone systems, this transcription is narrower than necessary; but languages contrasting five level tones do exist. Chao proposes that short tones should be represented with one pitch-number, e.g. 1, short-low (level). In the area under consideration, short vs. long distinctions are usually correlated with other supresegmental or segmental distinctions: short tones occur in stop-final, laryngealized, or otherwise constricted syllables. There are also short contour tones, difficult to represent with one pitch-number.

Therefore, I use two pitch-numbers, and indicate with a postscript -s a final stop; and -c a constriction or laryngealization of the vowel; e.g. 21s, half-low-to-low-falling with final stop; 33c, mid-level with vowel constriction.

Many excellent articles on tonogenesis, the process of tone development, have appeared – especially in the last few years. Haudricourt, in several pioneering articles (1954, 1961), suggests two basic conditioning factors that may lead to the development of tone: syllable-initial consonants condition pitch differences, and syllable-final consonants of some kinds condition contour differences. Then, if the segmental conditioning factors are lost, the pitch and contour differences may remain and become solely tone differences. Specifically, syllables with voiced initials may develop lower pitch, and syllables with voiceless initials may develop higher pitch. Syllables with glottal-stop finals may develop rising contour, and syllables with fricative finals, especially [h], may develop falling contour.

There are many examples of tone developments conditioned by larynx activity during syllable-initial consonants.[1] Even non-tonal languages show a tendency to higher pitch in voiceless-initial syllables, and lower pitch in voiceless-initial syllables.[2] The articulatory reasons for this correlation are fairly clear. Many languages have become tonal when the voicing/voicelessness conditioning factor ceased to be the main contrastive one, as in various Tibetan dialects. A two-way split can also occur in a language that already has tones, as in Chinese. Rearrangement of the tone system is then likely. Less common, and less universal in the details of their conditioning, are three-way splits. Voiced, glottalized, and voiceless aspirated syllable-initials have been reported to condition the development of low, mid, and high tones in Maru, a Burmish Tibeto-Burman language (Burling 1967).[3] In languages that have tone systems, one or several of the tones may undergo a split conditioned by syllable-initials without all of the tones splitting; in such a case, the tone system may also be further rearranged, possibly by mergers. This last kind of process, conditioned split of some tones, is particularly frequent in Central Loloish languages. The basic conditioning factors are similar: voiced initials condition lower-pitched tones, and voiceless initials, especially glottalized or unaspirated, condition higher-pitched tones.

The development of contour conditioned by syllable-finals is not as universal as the developments conditioned by initials, but it is frequently encountered. Haudricourt (1954) suggests that the two processes combined to produce the six tones of most dialects of Vietnamese. Matisoff (1970) gives a clear example of the development of a rising

tone in Lahu conditioned by a final glottal-stop.[4] Fewer changes conditioned by finals would in any case be predictable, as there are usually fewer oppositions in final position.

Other processes of tonogenesis are likely to occur only in languages that already have tone systems. These are called rearrangement above. Some such processes are discrete; others may be continuous. The most spectacular discrete process is flip-flop: two or more tones exchange phonetic values; Hashimoto (1972) cites some examples from Chinese. Brown (1965) attempts to explain flip-flop as an articulatory process. Another possibility is hopping: one tone's phonetic value changes to a value opposite to that it previously had relative to another tone, without the other tone undergoing a change.[5] Baron (1975) cites some examples, again from Chinese. One subtype of tone sandhi may also be discrete: in a specific environment, often determined by the tones of adjacent syllables, a particular tone has a phonetic value unlike its own realization elsewhere, but identical or similar to the realization of another tone.[6]

Continuous tonal rearrangement processes are less unlike developments in segmental phonology. There is assimilation; there are chain shifts within a continuously variable range of pitch; and there are changes in the direction of ease of articulation. Assimilation changes are also called tone sandhi in Asia, but the word 'spreading' could instead be borrowed from African linguistic usage: a tone becomes more similar to an adjacent tone. Ballard (1973, 1975) gives examples of both progressive and regressive spreading, again from Chinese. Chain shifts usually occur *after* another process, often discrete or universal, has caused instability in the tone system. Part of the instability may be resolved by mergers of tones with similar realizations, but Loloish data provide several instances, different in detail, of apparent push-type chain shifts. For example, in Northern Loloish, the hopping of the Proto-Loloish low tones to high pushes the Proto-Loloish high tone to mid, and mid tone to low.[7]

Ease of articulation considerations can be seen in the spreading subtype of tone sandhi, and in chain shifts which increase phonetic distinctness between tones when other processes have made them more similar. Another kind of change which reduces muscular effort is the elimination of phonation differences, such as laryngealization or other forms of constriction – which often result from the presence of final consonants, and then become contrastive when the final is lost. Thus, in a sense, there is a cyclical process – the final disappears, leaving phonation differences; then the phonation disappears, possibly leaving pitch and contour differences and hence a new tone. Of course,

when the final or phonation difference is lost, the result could also be a merger with an otherwise similar unconstricted tone.[8]

Another kind of least-effort change, not previously suggested but widespread in languages that are already tonal, is the development of a mid-pitch tone from high- or low-pitch tones. Various measurements of muscle activity[9] show that more effort is involved in the production of high or low pitches than mid pitches. We may thus account for the widespread tendency to develop mid tones, despite the possible resulting increase in the number of contrastive pitch-levels. This hypothesis may account for changes in Proto-Loloish and elsewhere.

Tone systems operate as systems, with each member opposed to all other members. Of course, the above kinds of change may result in extensive rearrangement of oppositions, adding more and more contrasts — up to five pitch levels; contour, possibly including rising, falling, concave (falling-rising) and convex (rising-falling); and other suprasegmental factors, such as length, constriction or phonation generally. Segmental factors, such as final glottal-stop or other stops with short tones, may also be considered part of the realization of certain tones. However, few if any languages have more than eight tones. When tone change processes result in excessive numbers of tone oppositions, mergers can be expected. In fact, in languages with many tones, we can usually account for some tones in terms of the processes outlined above. Given data from enough languages, and using the usual principles of historical linguistics[10] we can make and verify hypotheses about the phonetic values of reconstructed tone categories; provide further evidence for subgrouping based on shared tone changes; and show more instances of general tonogenetic processes.

2. LOLOISH TONES

Data are given from languages in the three major subgroups of Proto-Loloish.[11] Southern Loloish is represented by Akha (Lewis 1968; two dialects); other Southern Loloish languages such as Bisu, Phunoi and Mpi have identical pitch systems, but have no distinction between constricted and fully-voiced phonation. Northern Loloish is represented by 'Lu-ch'üan Lolo' (Ma 1948, cited in Matisoff 1973). Central Loloish is represented by Lisu (Fraser 1922), Sani (Ma 1951, cited in Matisoff 1973), and Lahu (Bradley 1975a; three dialects). Central Loloish languages have the most complex tonal systems: Lisu has a tone contrast maintained by contour alone and a tone contrast maintained by phonation alone; Sani has five contrasting level tones.[12] Lahu (two dialects) has the most tones, seven; it uses syllable-type contrast, two or three pitch-levels, and rising vs. falling contour in various