

## Syllable boundary displacement in Limbu verb-stem alternations

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Phonotactics is critical to any coherent phonology of Limbu, a Tibeto-Burman language of the Kiranti group spoken in the hills of Eastern Nepal and neighboring India. In fact, an important morphophonemic alternation in Limbu is best described as in part consisting in the movement of a syllable boundary. (Examples below are in the Mewa Khola dialect, but the principle holds for all dialects.)

Limbu syllable-initials include two series of stops, unaspirated and aspirated. There is no phonological opposition of voice; stop voicing ([p] vs [b], [p<sup>h</sup>] vs [b<sup>h</sup>] (etc.)) is determined by context. I transcribe voicing as it is normally pronounced.

The inventory of syllable-finals is basically: p, t, k, m, n, ŋ, zero. The stop finals are pronounced unvoiced and unreleased, with simultaneous glottal closure. (Stop finals are not found between vowels except before a morpheme boundary.)

Syllables are (Ci)V(Cf), with no clusters. Words are made up of one or more syllables.

There is a general phonological rule that syllable-initial stops are voiced after a vowel or nasal final (even across a word boundary): pa:n ‘speech’, kuba:n ‘his speech’

A further rule is that word-finals are geminated before a vowel-initial suffix, Exx: kume:t ‘his wife’, kume:tti? ‘his wife-Q’, kume:ttaj ‘his wife too’; kebe:k ‘you go’, ‘kebe:kki’ ‘will you go?’ (stem: pe:k).

Verbs have complex affixal morphology. The root has the (morphological) form (C1)V(C2)(C3), where C3 (the “augment”) is either t or s. (In word families, these are formatives with applicative (t) or causative (s) semantics.) Each lexical verb has two alternating stems, which can be called ‘non-past’ and ‘past’. Non-past stems have the canonical form (Ci)V(Cf), and can stand alone as phonological words (ha:p ‘he weeps’). Past stems have the form (Ci)V(Cf)Ci-; the obligatory Ci at the end corresponds to C2 or C3 of the root (or is an epenthetic j with a CV root) and must be followed by a vowel-initial suffix string. Typical stems and forms (hyphens separate morphemes; dots (past stem only) separate syllables):

root	gloss	Non-past stem exx.		past stem exx.	
juŋ	‘stay’	mɛn-juŋŋ-ɛ-aŋ	‘not having stayed’	ju.ŋ-ɛ	‘he stayed’
nu:ks	‘return’	mɛn-nu:ŋŋ-ɛ-aŋ	‘not having returned’	nu:k.s-ɛ	‘he returned’
ha:p	‘weep’	mɛn-ha:pp-ɛ-aŋ	‘not having wept’	ha:.b-ɛ	‘he wept’
hipt	‘strike’	mɛn-hipp-ɛ-aŋ	‘not having struck it’	hip.t-ɛ	‘he struck it’
tsok	‘do’	mɛn-dzo:kk-ɛ	‘don’t do it’	tso:.g-ɛ	‘do it!’
tɔ	‘dig’	mɛn-dɔ-ɛ	‘not having dug’	tɔ.j-uŋ	‘I dug it’

Weidert & Subba (1985) recorded the Panchthar forms correctly but could not find a phonological principle that predicted whether the apparent stem final in a given form would be geminated (e.g. Panchthar ha:ppa ‘I weep’) or voiced (Panchthar ha:ba ‘he wept’). This was mainly a failure to take phonotactics into account: if the stems are analysed according to the stem canons stated above, which hold for all regular verbs, it falls out that Cf (i.e. at the end of non-past stems) are geminated intervocally and Ci stops (at the end of CV.C past stems) are voiced, as in the rest of Limbu phonology. The stem alternations (not all types are shown here) are applicable only to verb stems, and are not part of the phonology proper. But the stem alternation of CVC roots consists essentially in the displacement of the syllable boundary. In the proposed analysis, it is the syllable structure that determines the realization of the segments.