

## Tonal suppletion as multi-modal featural affixation

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**Main Claim** An analysis for the allomorphy between realizing a morphological L- or H-tone in Kalam Kohistani is presented that is based on the crucial observation that realization of the H-tone is necessarily connected to vowel lengthening. The existence of such a ‘multi-modal’ nonconcatenative exponent that affects the tone pattern and segment length of its base follows straightforwardly in an autosegmental account that assumes floating autosegments (tones, moras) as representations for morphemes (Lieber, 1992; Wolf, 2007). **Data** The inflected form for nouns in Kalam Kohistani (=KK) is formed by adding a low tone (=L) to the final syllable for C-final nouns (1) and by realizing the whole base with a high tone (=H) for V-final nouns (2). In addition, the inflected V-final forms contain a floating L-tone that is realized on the following word (=L<sup>(L)</sup>) and undergo lengthening of the final vowel. (Additional vowel ablaut is ignored for now.)

(1) *Noun inflection: C-final*

BASE	INFLECTED		
bó:r	bô:r	‘lion’	H→HL
tʃáró:r	tʃârê:r	‘sparrow’	H.H→H.HL
bòbáj	bòbáj	‘apple’	L.H→L.L
bäg	bæg	‘place’	LH→LH

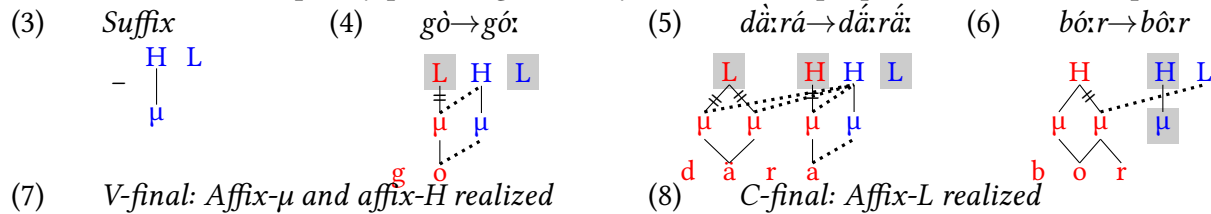
(2) *Noun inflection: V-final*

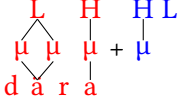
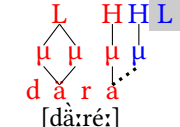
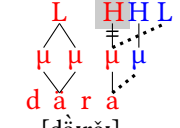
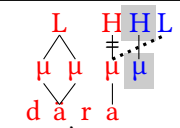
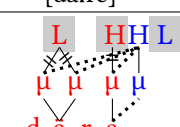
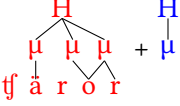
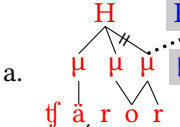
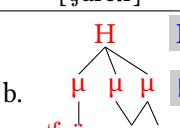
BASE	INFLECTED		
gò	gó: <sup>(L)</sup>	‘ox’	L→H(L)
dà:rà	dá:rà: <sup>(L)</sup>	‘guest room’	L.H→H.H(L)
bá:tʃà	bá:tʃá: <sup>(L)</sup>	‘king’	H.L→H.H(L)

(Baart (1999b):96+97, Baart (1999a):36)

Since the distribution of these allomorphs is completely predictable given the phonological shape of the base, a purely phonological analysis is preferable that derives all surface effects from a single underlying representation for the morpheme in question. Especially since there is a minimal overlap between the surface effects of both allomorphs: an L-tone is realized on C-final nouns and an additional floating L-tone is observed for V-final nouns. The two main questions arising for such an analysis are, *first*, how the quality of the final segment (C or V) determines the choice between realizing L or H, and, *second*, why the affixed H overwrites all base tones whereas the L tone is only realized on the final TBU. And there are additional asymmetries for the realization of this L-tone on C-final bases: the affix-L sometimes results in a falling contour on the final TBU (/tʃáró:r/ → /tʃârê:r/) and it sometimes ‘overwrites’ the final H of the base (/bòbáj/ → /bòbáj/). And for some bases it remains completely unrealized (/bäg/ → /bæg/). **Analysis** The crucial observation is that H-tone realization for V-final nouns is always accompanied by V-lengthening as another nonlinear exponent for noun inflection. I argue that the allomorphy in KK can be predicted from the single underlying morpheme representation in (3) (a H that is associated to a  $\mu$ , followed by an L) in an OT-system: **A.** High-ranked MAX- $\mu$  demands realization of the affix- $\mu$  which necessarily implies realization of the affix-H associated to the  $\mu$  (cf. (4) & (5)). If the affix- $\mu$  associates to the final base segment, the affix-L cannot be realized as well since it can not associate across the affix-H due to the standard concept of NOCROSSING (Goldsmith, 1976); the affix-L remains floating and associates to a following word. **B.** That the affix-H then overwrites preceding base L-tones follows from \*L: low tones are avoided via H-spreading if possible (cf. (5), tableau (7)). **C.** For C-final bases, realization of the affix- $\mu$  is blocked since trimoraic syllables are excluded (and codas are moraic in KK). The affix-L hence can associate to the final TBU (cf. (6), tableau (8)). That the affix-H cannot be realized in those contexts is due to its underlying association to the  $\mu$ : if this underlying association cannot be deleted, any further association to another TBU results in a violation of ONEROOT penalizing elements that are dominated by more than one highest prosodic node. **D.** The remaining asymmetries observed in the realization of the

L for C-final nouns follow from standard markedness and faithfulness constraints: the expected default is creation of a falling contour since this allows to realize both tones faithfully. However, this is blocked for bases with the underlying tone melody LH since the tone melody LHL is generally absent in KK (due to \*LHL). And that the affix-L is realized in polysyllabic L.H→L.L but not in monosyllabic LH→LH is due to a standard positional faithfulness constraint preserving the tones of the initial syllable. **Alternatives** Under alternative accounts like word-formation rules (e.g. Anderson, 1992) or paradigmatic OT-accounts (e.g. Alderete, 2001), *first*, the implicational relation between V-lengthening and H realization in KK remains a coincidence and, *second*, the allomorphy between L and H-realization must be analysed as suppletive. An autosegmental account that allows a purely phonological analysis as the one proposed is hence to be preferred.



	No CROSS	MAX μAf	MAX L Af	*L
a. 			*	*!*
b. 	*!			**
c. 		*!		**
d. 			*	
	No CROSS	MAX μAf	MAX L Af	*L
a. 		*		*
b. 		*	*!	

(Based on containment (McCarthy and Prince, 1995):  
 x =non-realized element; +− =association line marked as phonetically uninterpretable; ..... =inserted association line)

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