

Subtonal Features: New Evidence from Laal

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1. Introduction. While featural representations are well established for segments, proposals to extend them to tone (e.g. Wang 1967; Yip 1980; Clements 1983; Pulleyblank 1986; Snider 1990, 2020; Hyman 1993) have been less successful. Recently, Hyman (2010) and Clements, Michaud & Patin (2010) have argued that African tone systems are better represented with tonal primitives (e.g. H, M, L) than with features. The main arguments rest on the absence of parallelism between segmental and subtonal features. Specifically, (i) there is no evidence for subtonal natural classes, (ii) there is no evidence for assimilation or dissimilation involving tone features, and (iii) the specification of the M tone in three-tone languages is ambiguous.

In this paper, I provide arguments in favor of subtonal features, with novel data from Laal, an endangered, three-tone isolate language of southern Chad. I show that a two-feature system offers a straightforward account of properties of the Mid tone that are otherwise impossible to account for in a unified manner, namely its exclusivity, and its instability.

2. The data — 2a. M exclusivity. M has a limited distribution in the Laal lexicon. The possible stem-level tone patterns on lexical items are the following: H, M, L, HL, LH, HLH, LHL, realized on disyllabic stems, or as contours on monosyllabic stems. Missing are any combinations involving a M tone, i.e., *MX/XM (X = {H, L}) – with rare exceptions in functional words and recent loans.

2b. M instability (i): morpho-phonological M lowering. This ban on complex patterns involving a M tone is actively enforced whenever the morphology adds a H- or L-toned suffix to a M-toned root. M is systematically changed to L in such cases (1a-b). Other tones are not affected.

(1) a. /dāg-án/ [dāgán] ‘drag-him’ b. /dāg-àn/ [dāgàn] ‘drag-it’

2c. M instability (ii): morphosyntactic M lowering. Finally, there are two morphosyntactic contexts where M is changed to L with no apparent morpho-phonological conditioning. First, when the head of a (head-initial) genitive construction is M-toned, it is realized with a L tone (2), irrespective of the tone of the complement. Other tones are not affected.

(2) /dōrūm/ ‘rope’ /hól/ ‘plant sp.’ [dōrūm hól] ‘rope made of plant sp.’

Similarly, a M-toned transitive verb is systematically realized with a L tone when its object is in-situ (3), irrespective of the tone of the object. Other tones are unaffected in this context.

(3) /ɲāg/ ‘eat’ /tāā/ ‘fish’ [ɲāg tāā] ‘eat fish’

The verb retains its underlying M when its object is not in-situ, e.g. elided (4a). Additionally, M lowering is triggered only by an in-situ object, not by any other post-verbal word, e.g. an adverb in (4b). Finally, M lowering is observed even when a dative complement intervenes between the verb and the object (4c).

(4) a. ò sór nàr biàár ò ɲāg ‘You find a small *Tilapia* and you eat [it]’
 you find little *Tilapia* you eat

 b. jí ɲīrā tál wó ‘I don’t know [it] well.’
 I know well NEG

 c. à ɲuàn kí nīnī sààb ‘He bought fabric for the woman.’
 he buy to woman fabric (/ɲuāŋ/ ‘to buy’)

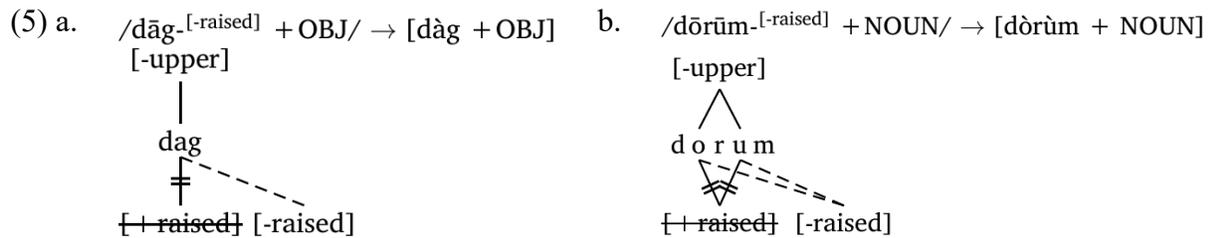
3. Analysis. Using Pulleyblank’s subtonal features, I propose the analysis of Laal tones shown in Table 1. The upper register consists only of H, while the lower register is further split into [+raised] M and [-raised] L. *[+upper, +raised] would correspond to a super-H tone, unattested in Laal (just like *[+front, +round] in languages lacking front rounded vowels).

Table 1. Laal tone features

	[upper]	[raised]
H	+	-
M	-	+
L	-	-

I analyze the *MX/XM constraint (and its enforcement through M lowering) as resulting from regressive [-raised] assimilation. This straightforwardly explains (i) why M is systematically changed to L, never to H (M and L form the [-upper] natural class); (ii) why only M is targeted (M is the only [+raised] tone); and (iii) why both H and L trigger M lowering (they are both [-raised]).

The same assimilation process accounts for morphosyntactic M lowering, which I analyze as a case of morphosyntactic marking signaling the presence of a genitive or object complement *in-situ* (i.e. a case of “non-extraction” marking, parallel to cases of extraction marking, e.g. French, Chamorro, cf. Crysmann 2005). This marking consists in a [-raised] floating suffix, which triggers regressive [-raised] assimilation, modeled as spreading in (5). In (5b), the feature spreads to all TBUs, in accordance with the generalization that all floating suffixes are replacive in Laal, i.e. spread to all targets within their base of affixation.



4. Alternatives. With only three tonal primitives /H M L/, M lowering would have to be analyzed either as a stipulative and unmotivated M→L/{H,L} tone change rule, or as the result of L spreading onto a preceding M. The latter hypothesis would naturally account for M lowering triggered by a following L-toned suffix, as well as morphosyntactic M lowering (provided the floating suffix in (5) is analyzed as L rather than [-raised]). But it would require that every H-toned suffix in the language be preceded by a floating L, a stipulative and uneconomic solution.

Another option is to analyze M as Ø, phonetically realized as M. This would explain its exclusivity and instability (Ø is preferentially specified by spreading a neighboring tone, default M insertion being a last-resort option). However, one would still need to posit a floating L tone before every H-toned suffix to explain the [L-H] realization they trigger. Additionally, the existence of a replacive M pattern shows that M is active, e.g. /pír-VI^M/ → [pīrīl] ‘catch-PASSIVE.’

5. Conclusion. A subtonal feature approach naturally captures the behavior of the M tone in Laal. This shows that, contrary to previous claims found in Hyman (2010) and Clements et al. (2010):

- (i) There IS evidence for subtonal natural classes – in Laal the [-upper] natural class /M L/ explaining the M to L change, and the [-raised] natural class /H L/ explaining why H and L trigger the same tonal process;
- (ii) There IS evidence for subtonal assimilation – in Laal, [-raised] assimilation;
- (iii) The specification of the M tone in three-tone languages is not necessarily ambiguous – in Laal, there is evidence for the [-upper +raised] specification of M.

Laal thus joins the growing cohort of languages (Seenku, McPherson 2016; Babanki, Akumbu 2019; Gaahmg, Trommer 2021; Tenyidie, Meyase 2021; among others) that have recently been shown to demonstrate the aptness of subtonal features in phonological analysis.