

## Mid-tone lowering in Laal: The phonology-syntax interface in question

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### 1 Introduction

Many phonological processes in a diverse range of languages have been shown to depend on syntactic structure, e.g. French liaison, Italian raddoppiamento, or Celtic consonant mutations. The Yoruba and Hausa alternations illustrated in (1) and (2) below illustrate a phonological process applying only to the sequence verb + object: As seen, the presence of an object *in situ* causes the final long vowel of a transitive verb to shorten in Hausa (1b), and the L-tone of the transitive verb to be raised to M in Yoruba (2a).

(1) Hausa final vowel shortening (Hayes 1990)

- |    |                              |              |                          |              |             |
|----|------------------------------|--------------|--------------------------|--------------|-------------|
| a. | <i>ná:</i>                   | <i>kámà:</i> | <i>(šì)</i> <sup>2</sup> |              |             |
|    | I                            | catch        | it                       |              |             |
|    | 'I have caught (it).'        |              |                          |              |             |
| b. | <i>ná:</i>                   | <i>kámà</i>  | <i>kífù</i>              |              |             |
|    | I                            | catch        | fish                     |              |             |
|    | 'I have caught a fish.'      |              |                          |              |             |
| c. | <i>ná:</i>                   | <i>kámà:</i> | <i>wà</i>                | <i>músá:</i> | <i>kífù</i> |
|    | I                            | catch        | for                      | Musa         | fish        |
|    | 'I have caught Musa a fish.' |              |                          |              |             |

(2) Yoruba: L-to-M raising (Déchaine 2001:83)

- |    |                             |   |              |            |          |           |                   |
|----|-----------------------------|---|--------------|------------|----------|-----------|-------------------|
| a. | <i>mí-mò</i>                | / | <i>mo mọ</i> | <i>ilé</i> | <i>e</i> | <i>rẹ</i> | (L tone verb > M) |
|    | GER-know                    |   | I know       | house      | of       | him       |                   |
|    | 'I know his/her residence.' |   |              |            |          |           |                   |
| b. | <i>jí-jẹ</i>                | / | <i>mo jẹ</i> | <i>ilá</i> |          |           | (M tone verb)     |
|    | GER-eat                     |   | I eat        | okro       |          |           |                   |
|    | 'I ate (some/the) okro.'    |   |              |            |          |           |                   |

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<sup>1</sup> For helpful discussion I would like to thank Larry Hyman, as well as audiences at the "Workshop on the Phonology/Syntax Interface in Bantu (and Other) Languages" (Paris, 28-29 June 2012) and "Afrikalinguistisches Kolloquium" (Humboldt University, Berlin, 10 July 2012), where previous versions of this paper were presented. This research is supported by the Volkswagen Foundation/DoBeS Program. Many thanks are due to my Laal consultants in Chad.

<sup>2</sup> The abbreviations and glosses used in the examples follow the Leipzig glossing rules, except for the following: CON 'connective', CONTR 'contrastive focus', EMPH 'emphatic', G 'genitive', GER 'gerundive', INT 'intentional', IT 'Itive', PROS 'prospective', T 'transitive'.

- c. *jí-kó* / *mó kó ilé* (H tone verb)  
 GER-build I eat okro  
 ‘I ate (some/the) okro.’

Laal (unclassified, Southern Chad) has a tonal alternation which seems to be the mirror image of Yoruba L-raising: M-toned verbs and nouns become L-toned when followed by an overt in-situ object NP or genitive complement respectively, as shown in (3). M-toned nouns and verbs affected by M-lowering are underlined in all the examples.

- (3) a. *já* *nyāg* > *já* *nyàg* *mèrìm*  
 I eat I eat:T meat  
 ‘I eat/ate.’ ‘I eat/ate meat.’  
 b. *dōrūm* > *dòrùm* *hól*  
 rope rope:G bark.sp  
 ‘rope’ ‘bark (sp.) rope’

Such phenomena have raised important questions concerning the relationship between phonology and syntax, in particular whether phonology can refer directly to syntactic information (Kaisse 1985, 1990; Odden 1987, 1990a, 1990b; Déchaine 2001, a.o.), or only to a subset of this information, filtered by intermediate structures given by the prosodic hierarchy (Selkirk 1978, 1986; Nespor and Vogel 1986; Inkelas and Zec 1995, a.o.).

The goal of this paper is to show that M-lowering in Laal, described in part 2, is not a syntactically governed phonological rule, but a case of inflectional morphology. I show in particular in parts 3 and 4 that it is not a case of Precompiled Phrasal Phonology (Hayes 1990), but the result of the morphosyntactic marking of the direct government relationship between a verb or noun head and its overt in-situ complement: object NP, genitive NP modifier. I then propose a phonological and historical account of M-Lowering in part 5. Part 6 concludes. Unless explicitly noted, all examples come from my own field notes.

## 2 M-Lowering in Laal

### 2.1 M-lowering in the verb phrase: verb + object NP

As shown in (3a) above, when a M-toned transitive verb is followed by its syntactic object *in situ*, its M is changed to L. This lowering affects only M-toned verbs, as shown in (4) below with the five tone patterns attested on verbs.<sup>3</sup>

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<sup>3</sup> For the general properties of the Laal tone system, see §5.1 below.



- b. *tuààr má já nyāg ʔèèn*  
 chicken CON I eat yesterday  
 ‘the chicken that I ate yesterday’
- c. *ʔì yīg yà gè hōōr kuán*  
 they pour LOC in horn DEF  
 ‘They put [it] into the horn.’

(9) Dative complement, no overt object

- ʔà tō nī*  
 he carry for:me  
 ‘He carried (it) for me.’ (Boyeldieu 1982:152)

## 2.2 M-lowering in the genitive construction

The genitive construction, used to express inalienable possession and related concepts (Boyeldieu 1982, 1987), is formed in Laal by juxtaposing the head noun and its genitive modifier in that order.<sup>4</sup> As was seen in (3b), the M-tone of the head noun of a genitive construction is changed to L in the same conditions as for transitive verbs: in the presence of its *in-situ* complement. Unlike verbs however, this complement may not be elided or extracted, making M-lowering systematic in the genitive construction. This tone change affects only M-toned nouns, as illustrated in (10) below with the five main tone patterns attested on nouns.<sup>5</sup>

- (10) a. H: *hóy* ‘shells’ *hóy jūūrū* ‘peanut shells’  
           shells peanuts  
       b. M: *dōrūm* ‘rope’ *dòrùm hól* ‘bark (*sp.*) rope’  
           rope bark.*sp.*  
       c. L: *nyàw* ‘house’ *nyàw ndíí* ‘bird’s nest’  
           house bird  
       d. LH: *gàáw* ‘wing’ *gàáw ndíí* ‘bird’s wing’  
           wing bird  
       e. HL: *sây* ‘tea’ *sây nàsàrà* ‘White people’s  
           tea White tea’

Laal also possesses what I call a “connective” construction, used, among many other functions<sup>6</sup>, to express alienable possession. The distinction between the genitive and connective constructions is illustrated in (11) and (12). The connective varies in gender and number with the noun being modified (m.sg. *já*,

<sup>4</sup> Creissels (2009) calls this head-marking morphosyntactic structure “construct state”, a term borrowed from Semitic linguistics.

<sup>5</sup> The remaining two tone patterns attested on nouns (LHL and HLH) are extremely rare, and none of those nouns is used in a genitive construction in my corpus. For the general properties of the Laal tone system, see §5.1 below.

<sup>6</sup> Including relativization, as seen in (7) and (8b).

f.sg. *jí*, n.sg. *má*, m/f. pl. *yí*, n.pl. *yá*) Note that the m/f.pl. form *yí* is often used as a default invariable connective, and that all connectives have a purely tonal allomorph: a H floating tone, illustrated in (5b) above and (16) below.

- (11) a.  $N_{\text{head}}$        $N(P)_{\text{genitive}}$   
*ɓàgál*      *kábó*      *ɓàgál*      *kábó*  
 head      Kabo      head      Kabo  
 ‘Kabo’s (own) head’

- (12) a.  $N(P)_{\text{possessum}}$       CON       $N(P)_{\text{possessor}}$   
 b. *ɓàgál*      *má*      *kábó*  
 head      CON:N.SG      Kabo  
 ‘Kabo’s head.’ (e.g. the head of the animal he hunted)

There are three pieces of evidence showing that the genitive construction has syntactic status and is not simply a case of noun compounding. The genitive complement may be pronominalized (13). It may also be a complex NP (14). Finally, there is no M-lowering in Noun-Noun compounds, which are not frequent in Laal, and often fossilized and opaque (15).

- (13) a. *nyàw*      *ndíí*      →      *nyàw*      *nàná*  
 house      bird      house      its  
 ‘a/the bird’s nest’      ‘its nest’  
 b. *wán*      *mōl*      →      *wán*      *nàná*  
 “boule”      pearl.millet      house      its  
 ‘boule<sup>7</sup> made of pearl millet’      ‘boule made of it’

- (14) *kí*      *yèn*      [[[*cǎn*      *nūnī*]      *kán*]      *wùrù*]<sub>NP</sub>  
 to      body:G      child+CON      woman      DEF      her.family  
 ‘to the girl’s family’

- (15) a. *mōō*      + *gà*      + *díígí*      /      *mùù-rí*      + *gà*      + *díígí*  
 hippo      ?      ?      hippo-PL      ?      ?  
 ‘hippo’      ‘hippos’  
 b. *wār*      + *bīíg*      /      *wār*      + *bīīg-āny*  
 ?      ?      ?      ?      -PL  
 ‘bat’      ‘bats’

Exactly as we observed in the case of M-toned verbs, M-lowering on nouns is not attested in any other context, as shown in (16)-(20).

<sup>7</sup> Staple food made of pounded cereal, similar to West African *fufu*.

- (16) Noun + connective (connective construction)
- |             |           |            |   |             |            |
|-------------|-----------|------------|---|-------------|------------|
| <i>miān</i> | <i>má</i> | <i>dōŋ</i> | / | <i>sǔ</i>   | <i>nūr</i> |
| road        | CON       | be.long    |   | water+ CON  | be.hot     |
| 'long road' |           |            |   | 'hot water' |            |
- (17) Noun + numeral
- |              |              |   |             |            |
|--------------|--------------|---|-------------|------------|
| <i>dōrūm</i> | <i>bìdǎl</i> | / | <i>wūrā</i> | <i>māā</i> |
| rope         | one          |   | men         | three      |
| 'long road'  |              |   | 'three men' |            |
- (18) Noun + determiner
- a. *nāārā*    *kán*            *nyíní*  
man            DEF                    come  
'The man came.'
- b. *nāārā*    *jàn*                    *nyíní*  
man            INDF                    come  
'A man came.'
- c. *nāārā*    *jánàn*                *nyíní*  
man            INDF2                    come  
'One of the men came.'
- (19) Noun + topic/focus marker
- a. *wūrā*    *yì*            *tēé*    *kí*  
men        FOC        IPFV    do  
'THE MEN do it (It is the men's job).'
- b. *ngiāāl*    *lē*            *ʔò*    *kú*        *ʔò*        *pír-àr*    *wó*  
hyena    CONTR    you    see        you    catch-it    NEG  
'The hyena on the other hand, you see it but you don't catch it.'
- c. *nāārā*    *juāŋ*        (*ʔà*)    *nyíní*        *ʔá*  
man        TOP        he        come        COMPL  
'(As for) the man, he has just arrived.'
- (20) Noun + adverb, clause-final negation
- a. [*ʔà*]    *bál*            *tēé*        *tùù*            *siāāg*    *bìlà*  
he        still        IPFV        suck:GER:T    milk        only  
'He was still suckling.'
- b. *mālā*    *káw*            *dīàn*  
"mala"    too            there:is  
'There is also (a tradition called) the mala.'
- d. *já*        *ká*            *dūrār*        *wó*  
I            do            work        NEG  
'I did not work.'

### 3 M-Lowering: not phrasal phonology but inflectional morphology

#### 3.1 Hayes' (1990) Precompiled Phrasal Phonology

Hausa final vowel shortening, illustrated in (1) above, is one of the alternations for which Hayes (1990) initially developed Precompiled Phrasal Phonology (PPP). Hayes' account rests on the idea of "syntactic instantiation frames" associated with different allomorphs of a given form. The verb 'catch' in Hausa is thus analyzed as having two allomorphs: *kámà:*, and shortened *kámà*. The syntax sensitive shortening rule (21a) that produces the latter applies in a particular syntactic frame (21b). In all other contexts, the non-shortened allomorph *kámà:* is inserted, by virtue of the Elsewhere Condition, as illustrated in (21). PPP is thus a "fossilized or lexicalized version of a phrase-phonological rule" (Crysmann 2005:109).

- (21) PPP account of Hausa final vowel shortening
- a.  $V: \rightarrow V / [\text{Frame } 1]$
  - b. Frame 1:  $[\text{v}_P \_ \text{NP} \dots]$
  - c. Elsewhere: *kámà:*

Laal M-lowering could similarly be analyzed as a case of PPP. M-toned verbs such as *nyāg* 'eat' could be analyzed as having a M-toned allomorph (*nyāg*), and a lowered allomorph (*nyāg*), the latter being produced by a M-lowering rule (22a) in a particular syntactic frame (22b). The non-lowered allomorph is used in all other contexts.

- (22) PPP account of Laal M-lowering
- a.  $M \rightarrow L / [\text{Frame } 1]$
  - b. Frame 1:  $[\text{XP} \_ \text{NP} \dots]$  (XP = NP or VP)
  - c. Elsewhere: *nyāg*

#### 3.2 Crysmann (2004, 2005): inflectional morphology

Crysmann (2004, 2005) shows that Hausa final vowel shortening is in fact not amenable to a PPP analysis. He presents two main arguments, which one may call the adjacency, and morphological systematicity arguments.

The adjacency argument is based on the observation that adjacency between the verb and its object is not necessary for final vowel shortening to apply. The syntactic frame (20a) proposed by Hayes for the application of the shortening rule requires the verb to be adjacent to its object. Example (1c) above illustrates a case of dative intervention, where the transitive verb, separated from its object by a dative complement, does not undergo final vowel shortening, giving weight to the hypothesis that adjacency between the verb and its object is a necessary condition for the application of this rule. This adjacency requirement is, together with the syntactic "frame of instantiation", what makes final vowel shortening a type of phrasal phonological rule in Hayes' analysis.

However, Crysmann shows that adjacency is actually not required, as evidenced by the fact that modal particles may intervene between the verb and its object, and do not prevent vowel shortening, as illustrated in (23) below.

- (23) *ya: shuukà (\*shuukà:) kuma audùga:*  
 he planted also wheat  
 ‘He also planted wheat.’ (Crysmann 2005:117)

One could of course redefine the instantiation frame by including an optional modal particle: [<sub>VP</sub>\_\_ (particle) NP...]. This, however, would weaken Hayes’ approach: “if the adjacency requirements have to be relaxed, this can be taken as indirect evidence in favor of inflectional status” (Crysmann 2005:118).

Crysmann’s second argument is based on an analysis of the whole verbal morphological system of Hausa. Verbs in this language fall into seven grades, each grade having three possible forms, as illustrated in (24) and table 1 below.

- (24) a. A-Form: citation form, used whenever the object is absent or extracted  
 b. B-Form: before direct object pronominals  
 c. C-Form: before direct object NPs (final vowel shortening is used to derive the C-Form of grade-1 verbs only)

Grade	A-Form		B-Form		C-Form	
1 (tr/intr)	-a:	H-L(-H)	-a:	H-L(-H)	-a	H-L(-L)
2 (tr)	-a:	L-H(-L)	-e:	L-H		
3 (intr)	-a	L-H(-L)	--	--	--	--
4 (tr/intr)	-e:	H-L(-H)	-e:	H-L(-H)	-e	H-L(-L)
					-e:	H-L(-H)
5 (caus/tr)	-aĩ	H	-aĩ	H	-aĩ [dâ]	H
			-she:	H		
			∅	H		
6 (tr/intr)	-o:	L	-o:	H	-o:	H
7 (intr)	-u	L-H	--	--	--	--

**Table 1:** Hausa verb grades and forms (Crysmann 2004:2, adapted from Newman 2000:628)

Final vowel shortening is only the realization of the C-form of grade-1 verbs. It is thus “but one exponent of a systematic morphosyntactic distinction in the language” (2005:105), expressed by other means (suffixes, vowel raising etc.) in other verb classes.

Crysmann accordingly reanalyzes final vowel shortening as a case of morphosyntactic marking: Hausa belongs to the class of extraction-marking languages (in this case more precisely non-extraction marking), where non-extraction of the object of a transitive verb, i.e. the presence of an overt object *in*

*situ*, is marked on the verb. Final vowel shortening is only one among many ways of marking this inflectional category.

Interestingly, Crysmann (2011) further shows that the same holds true for the head noun of a genitive construction in Hausa, which is morphologically marked when followed by a genitive complement *in situ* (making it a “construct state”, in Creissels’s (2009) terms).

#### 4 Laal M-lowering: a case of inflectional morphology

I show in this section that the two arguments used by Crysmann against Hayes PPP analysis of Hausa final vowel shortening apply to Laal as well.

In Laal, much like in Hausa, the dative complement in a ditransitive structure is appears preferentially before the object. This intervention of the dative complement between the verb and its object does not prevent M-lowering, as shown in (25).

- (25) a. *ʔà tò nī kū* NB: \**ʔà tò kū nī*  
 he carry:T for:me fire  
 ‘He carried the light (lamp) for me.’
- b. *ʔà juàṅ [kí nīnī]<sub>DAT</sub> [sààb bìdíl]<sub>OBJ</sub>*  
 he buy:T for woman cloth one  
 ‘He buys/bought the woman one piece of fabric.’  
 (Boyeldieu 1982:153)
- c. *ʔà juàṅ [sààb bìdíl]<sub>OBJ</sub> [kí nīnī]<sub>DAT</sub>*  
 he buy:T cloth one for woman  
 ‘He buys/bought one piece of fabric to the woman.’  
 (Boyeldieu 1982:153)

Concerning morphological systematicity, it appears that M-lowering is only one of two strategies used in Laal to mark non-extraction, the second one observed on gerunds. The gerund has two forms in Laal: one that is homophonous with the simple form of the verb, used when there is no overt object *in situ* (26b), and a marked transitive form (cf. table 2 below), which is used only for transitive verbs followed by their *in-situ* object (26c). All the examples given in this section involve TAM markers requiring the use of the gerund form: imperfective *tēé*, prospective *ná/ní*, itive *wáá/wī*, prospective-itive *náá/nī* and intentional *mínà/mínì* (all but the imperfective are number-sensitive: sg/pl).

- (26) a. *já kááw nyàw*  
 I make house  
 ‘I built a house.’
- b. *já tēé kááw*  
 I IPFV make:GER  
 ‘I am building (it).’

c. *já tēé kààw-à nyàw*  
 I IPFV make-GER:T house  
 ‘I am building a house.’

	H	M	L
Simple form of verb (and unmarked gerund)	<i>sór</i> ‘find’	<i>pīg</i> ‘tie’	<i>jàr</i> ‘cut’
Marked transitive form of gerund -V̇ suffix + L tonal overlay.	<i>sòr-ò</i>	<i>pìg-ì</i>	<i>jàr-à</i>

**Table 2:** The marked transitive form of the gerund

As seen, the marked form of the gerund is used in the same context as that in which M-lowering applies: in the presence of an *in-situ* object. The following examples (27-30) further show that it has exactly the same distribution as M-lowering.

(27) Topicalization: simple form  
*[yí dāŋ]<sub>TOP</sub> mālá tēé cār/\*càrà wó pār*  
 CON there “mala” IPFV want:GER/id:T NEG all  
 ‘Those things (I’ve just mentioned), the “mala” does not like any of them.’

(28) Relativization (+dative complement): simple form  
*yí rāāg ná ká/\*kàrà nŷŋ*  
 CON god PROS do:GER/id:T to:you(pl)  
 ‘what God will do to you’

(29) Adjunct: simple form (compare a/b with a’/b’)

- a. *já náā tāār/\*tààrà nyààn*  
 I PROS.IT hunt:GER/id:T bush  
 ‘I will go hunt in the bush.’
- a’. *já náā \*tāār/tààrà nyé*  
 I PROS.IT hunt:GER:T elephant  
 ‘I will go elephant hunting.’
- b. *já náā jīn/\*jìni gì mēār*  
 I PROS.IT bathe:GER/id:T in river  
 ‘I am going to bathe in the river.’
- b’. *já náā \*jīn/jìni càn*  
 I PROS.IT bathe:GER:T child  
 ‘I am going to bathe the child.’

- (30) Intervening dative (with overt object NP): marked form
- a. “*maître*” *ná* \**ká/kàrà* *nǎŋ* *sísígì*  
 teacher PROS do:GER/id:T for:us tale  
 ‘The teacher will tell us a tale.’
- b. *nīnī* *tēe* \**dā/dàà* *ké* *wūrā* *wón*  
 woman IPFV bring:GER/id:T to men “boule”  
 ‘The woman is bringing “boule” to the men.’

In conclusion, M-lowering in Laal is an exponent of an inflectional category. Laal is thus much like Hausa: the presence *in situ* of a complement in a transitive or genitive structure is marked on the head, with two different markers: M-lowering on nouns and (non-gerund) verbs, the suffix  $-\dot{V}$  (+ L overlay) on gerunds, as summarized in table 3 below.

	No overt <i>in-situ</i> complement	<i>In-situ</i> complement	
Noun	<i>hóy</i>	‘shells’	<i>hóy</i>
	<i>dōrūm</i>	‘rope’	<i>dòrùm</i> M-lowering
	<i>nyàw</i>	‘house’	<i>nyàw</i>
Verb (simple form)	<i>pír</i>	‘catch’	<i>pír</i>
	<i>nyāg</i>	‘eat’	<i>nyàg</i> M-lowering
	<i>jār</i>	‘cut’	<i>jār</i>
Gerund	id.	<i>pìr-ì</i> <i>nyàg-à</i> <i>jār-à</i>	$-\dot{V}$ + L overlay

Table 3: M-lowering and marked transitive form of gerund

## 5 A phonological and historical account of M-lowering

### 5.1 The tone system of Laal and M-reduction

Laal has three contrastive level-tones: H, M and L. The tone-bearing unit is the mora: syllables may be linked to more than one tone, and contour tones are not attested on monomoraic syllables (with only one exception, see table 4). The only contour tones attested in Laal, where most words are maximally disyllabic, are combinations of H and L: HL and LH (and marginal HLH and LHL, ignored here). With the exception HM and MH, attested on a handful of grammatical items and a few recent loanwords, no lexical item is attested with a contour tone involving M. In particular, LM and ML are never attested. Table 4 below offers a summary of the distribution of tones in Laal.<sup>8</sup>

<sup>8</sup> Because of space constraints, only CV, CVV(C) and CVCV(C) words are illustrated here.





make M-lowering a case of easily segmentable tonal morphology, or is the suffix gone, register simplification being reanalyzed as the only mark of complement non-extraction in modern Laal, as in (33c)? Finally, are both the genitive and transitive M-lowering suffixes at the same historical stage?

One difference between verbs and nouns actually seems to offer elements of an answer. In Laal, a H tone linked to the last mora of a morpheme followed by a L suffix spreads one mora to the right across the morpheme boundary, thus delinking the L tone borne by the suffix, as shown in (34) with inalienable nouns combined with possessive suffixes (i.e. a genitive construction with a pronominalized genitive modifier):

- (34) a. *wúur* + -*àn*      →    *wúúr* -*àn*      ‘its thigh’  
           |            |                            ↓            |  
           H          L                            H          L
- b. *tím* + -*àn*                    *tím* -*àn*      ‘its arm’  
           |            |                            |            †  
           H          L                            H          L

This H-tone spreading is never attested between a transitive verb and a pronominal object suffix, as shown in (35).

- (35) a. *tár* + -*àn*                    →    *tár-àn*      ‘scold it’      (\**tár-án*)  
       b. *gág* + -*àn*                    →    *gág-àn*      ‘doubt it’      (\**gág-án*)  
       c. *sór* + -*àr*                    →    *suár-àr*      ‘find it’      (\**suár-ár*)

One possible explanation is that, since the pronominal suffix qualifies as an *in-situ* syntactic object, the verb is marked with the non-extraction marking suffix, which prevents the H from spreading onto the object suffix, as shown in (36):

- (36) *tár*                    -*àn*      ‘scold it’  
       |                            |  
       H    (-H/L)    L

Under this rather abstract analysis, M-lowering in the verb phrase would be due to a fully underspecified floating tone (stage (33b)): because both H- and L-toned suffixes trigger register simplification, and the floating tone in this context is never realized, it is impossible to know what tone it is, or used to be.

The fact that H-tone spreading is not blocked in (34) indicates that either the genitive suffix was never present in [Noun + poss.suf.], which does not tell us anything about a potential difference between genitive and transitive M-lowering, – or that M-lowering in the genitive construction in general has reached stage (33c): the suffix is no longer present, and genitive M-lowering is a case of morpho-syntactically rather than morpho-phonologically controlled register simplification, or simply a case of allomorphy.

## 6 Conclusion

I have shown that Laal M-lowering is not a prosodic alternation, but a case of inflectional morphology: the possibility for dative complements to intervene between the verb and the object violate the surface-oriented adjacency criterion which is crucial to any prosodic approach to this problem, e.g. Hayes' (1990) Precompiled Phrasal Phonology.

The morphosyntactic analysis proposed here is in keeping with Crismann's (2004, 2005) reanalysis of a very similar phenomenon (Hausa final vowel shortening) as the expression of an inflectional category. Laal, like Hausa, belongs to the typological class of "extraction-marking languages" (Crismann 2005:1), where the head of a construction is marked differently depending on whether its complement is extracted or *in situ*. Like Hausa (but unlike Chamorro or French), the head is marked in cases of non-extraction (overt in-situ complement) in Laal, as summarized in table 5 below.

	Genitive	Verb	Gerund
<b>No complement <i>in situ</i></b>	∅	∅	∅
<b>Overt <i>in-situ</i> complement</b>	M > L	M > L	-V̇ (+L overlay)

Table 5: (Non-)extraction marking in Laal

Is such a reanalysis of similar phonological alternations in other languages possible, e.g. Yoruba L-raising, illustrated in (2) above? Interestingly, the genitive construction in Yoruba involves a mid-toned underspecified vowel (suffix? enclitic?) linking the head noun and the genitive complement (Akinlabi 1985:84sq., Akinlabi and Liberman 2000:18), and assimilating to the last vowel of the head noun. This linker does not cause any tone interaction: the tones (H, M, and L) of the preceding mora remain unchanged, *i.e.* there is no L-raising in this case, as shown below.

- (37) a. *ilé e táyò* / *ilé (e) òjó*  
house GEN Táyò / house GEN Òjó  
'Táyò's house' / 'Òjó's house'
- b. *omọ ọ táyò* / *omọ (ọ) òjó*  
child GEN Táyò / child GEN Òjó  
'Táyò's house' / 'Òjó's house'
- c. *okọ ọ táyò* / *okọ (ọ) òjó*  
car GEN Táyò / car GEN Òjó  
'Táyò's house' / 'Òjó's house'

Is the M that replaces L on transitive verbs related to the M-toned genitive linker? Is this a syntax-phonology interface phenomenon, or is it simply a case of head-marking morphology? Finally, in what ways could the historical process proposed in (33) be relevant to this Yoruba data? I leave these questions for further research that is clearly needed.

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