Mid-Tone Lowering In Laal and the Phonology-Syntax Interface

Florian Lionnet
University of California, Berkeley[1]

1. Introduction

(1) Many phonological processes in a diverse range of languages have been shown to depend on syntactic structure, *e.g.* French *liaison*, Italian *raddoppiamento*, Celtic consonant mutations, metatony in Bantu languages, or the Yoruba and Hausa alternations illustrated in (2)-(3) below:

(2) Hausa: final vowel shortening on transitive verbs followed by an overt Object NP (Hayes 1990)

    a.   *náː*   *káːmàː*   *(ší)* [2]
          I   catch   it
          'I have caught (it).'

    b.   *náː*   **káːmà**   *kíːfíː*
          I   catch   fish
          'I have caught a fish.'

    c.   *náː*   *káːmàː*   *wà*   *Múːsá* *kíːfíː*
          I   catch   for   Nusa   fish
          'I have caught Musa a fish.'

(3) Yoruba: L-to-M raising on transitive verbs followed by an overt Object NP (Déchaine 2001:83)

    a.   *mí-mò̩*   /   *mo*   **mo̩**   *ilé*   *e*   *rè̩*   (L tone verb > **M**)
          GER-know /   I   know   house of   him
          'knowing'   'I know his/her residence.'

    b.   *jí-je̩*   /   *mo*   *je̩*   *ilá*   (M tone verb)
          GER-eat   /   I   know   house
          'eating'   'I ate (some/the) okro.'

    c.   *kí- kó̩*   /   *mo*   *kó̩*   *ilé*   (L tone verb)
          GER-eat   /   I   know   house
          'building'   'I built a house.'

(4) Such phenomena have raised important questions concerning the relationship between phonology and syntax, in particular whether:

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[2] 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'.

a. Phonology can refer directly to syntactic information (Kaisse 1985, 1990; Odden 1987, 1990a, 1990b; Déchaine 2001),

b. or Phonology has access to only a subset of syntactic information, filtered by intermediate structures given by the prosodic hierarchy (Selkirk 1978, 1986; Nespor and Vogel 1986; Inkelas and Zec 1995).

(5) "M-lowering" in Laal (language isolate spoken in Southern Chad): M-toned verbs become Low-toned when followed by an overt *in-situ* object NP (mirror image of the Yoruba alternation illustrated in (3) above).

já	*nyāg*	>	*já*	***nyàg***	*mèrìm*
I	eat		I	eat:T	meat

'I eat.' 'I eat meat.'

(6) Interestingly, M-lowering is also attested in the NP: M-toned head nouns become L-toned when followed by a genitive complement:

dōrūm	>	***dòrùm***	*hól*
rope		rope:G	bark(*sp.*)

'rope' 'bark (*sp.*) rope'

(7) Goal of this presentation: show that M-lowering in Laal is morphosyntactic in nature:
a. it does not result from an influence of syntax on phonology
    i. either directly (syntactically conditioned phonological alternation)
    ii. or through the prosodic structure (phrasal phonology)
b. but from the morphosyntactic marking of the direct government relationship that binds the head to its overt *in-situ* complement (Object NP, genitive NP modifier)

(8) Structure of the presentation:
a. Part 2: M-lowering in the VP
b. Part 3: The transitive form of the gerund
c. Part 4: M-lowering in the NP
d. Part 5: M-lowering as a case of morphosyntactic marking
e. Part 6 Concluding remarks

2. M-lowering in the VP

2.1. Transitive verb + overt *in-situ* object NP: M-lowering

(9) Transitive verb + *in-situ* overt Object NP
a. H: *pír* 'catch'

já	*pír*	*tuààr*
I	catch	chicken

'I catch/caught a chicken.'

b. M: *nyāg* 'eat'

já	***nyàg***	*tuààr*
I	**eat**	chicken

'I eat/ate chicken.'

c. L: *jàr* 'cut, slice'

já	*jàr*	*tuààr*
I	cut	chicken

'I cut the chicken's throat.'

d. LH: *sə̀rí* 'peck'   *tuààr*   *sə̀rí*   *jāŋāl*
                       chicken   peck   termite
                       'The chicken pecked the termite.'

e. HL: *múrì* 'run, dance (pl)'   *ʔì*   *múrì*   *gààm*
                       they   run:PL   dance.sp.
                       'They danced the funeral dance.'

(10)   M-lowering is attested with
        a.   all clauses: matrix, subordinate
        b.   all clause types: affirmative, negative, interrogative, exclamative
        c.   all TAM markers (although see (24) below)

2.2. No M-lowering anywhere else

(11)   Transitive verb understood or elided Object NP
        a.   *já*   ***nyāg***
            I   eat
            'I eat/ate (it).'

        b.   *mōōnō*   ***ɓùr***   *nyōó*   *nùŋú* ***yāg*** *'yą́*
            mōōnō   *ɓūr:T*   *nyōō*   *-H*   *nùŋú* *yāg* *'yą́*
            lion   uproot:T   grass   -CON   here   throw thus
            'The lion uproots grass and throws it like this.'

(12)   Extracted Object (topicalization): no M-lowering
        [*tuààr*]_{TOP} *ʔò* ***nyāg*** *wó,* [*sér*]_{TOP} *ʔò* ***sīr*** *wó*
        chicken   you   eat   NEG   karkaday   you   drink NEG
        'Chicken, you don't eat; karkaday, you don't drink.'

(13)   Relativization: no M-lowering
        nápār *má*   [*ʔèèn*   *ʔǎŋ*   ***juāŋ]***_{RC}
        sort   CON   yesterday   we(incl) buy
        'the kind that we bought yesterday'

(14)   Transitive verb + adjunct (NP, PP, AdvP)
        a. *já* ***tāār*** *nyààn*   (cp. *já* ***tààr*** *nyé*)
           I   hunt   bush   I   hunt:T   elephant
           'I hunt in the bush.'   'I hunt elephant[s].'

        b. *tuààr*   *má*   *já*   ***nyāg*** *ʔèèn*
           chicken   CON   I   eat   yesterday
           'the chicken that I ate yesterday'

        c. *ʔì*   ***yīg*** *yà* *gì̀* *hōōr* *kuán*
           they   pour   LOC   in   horn   DEF
           'They put [it] into the horn.'

(15)   Dative complement, no overt object: no M-lowering (no example with a dative *kɨ́*-PP could be found in the database):

ʔà	***tō***	*nī*
he	carry	for:me

'He carried (it) for me.' (Boyeldieu 1982:152)

2.3. Intervening dative complement

(16)   Dative complement, with an overt *in-situ* object: M-lowering

a.

ʔà	***tò***	*nī*	*kū*
he	carry:T	for:me	fire

'He carried the light (lamp) for me.'

b.

*ʔà	***tò***	*kū*	*nī*
he	carry:T	fire	for:me

c.

ʔà	***juàŋ***	[*kɨ́*	*nīīnɨ̄*]$_{DAT}$	[*sààb*	*ɓɨ̀dɨ́l*]$_{OBJ}$
he	buy:T	for	woman	cloth	one

'He buys/bought one piece of fabric to the woman.' (Boyeldieu 1982:153)

d.

ʔà	***juàŋ***	[*sààb*	*ɓɨ̀dɨ́l*]$_{OBJ}$	[*kɨ́*	*nīīnɨ̄*]$_{DAT}$
he	buy:T	cloth	one	for	woman

'He buys/bought one piece of fabric to the woman.' (Boyeldieu 1982:153)

(NB: ditransitive verbs, i.e. verbs that allow for a double object construction, are ignored here, since none of them is M-toned)

2.4. Auxiliary verb with nominalized VP complement (gerund)

(17)

já	***cōr***	*mɨ́*	*ʔà*	*mà*	*ká*	*dūrār*
I	want	that	he	HORT	do	work

'I want him to work.' (lit. I want that he should do work)

(18)

já	***cə̀r***	*kàrà*	*dūrār*
I	want:T	do:GER:T	work

'I want to work.' (lit. I want the doing of work)

(19)

já	***cə̀r***	*sū*
I	want:T	water

'I want water.'

(20)   Summary:
a.   M-lowering applies to any transitive verb followed by an overt *in-situ* object NP
b.   The object can be:
   i.   NP
   ii.   nominalized VP (gerund)
c.   Adjacency between the verb and its object is not necessary (intervening dative)

3. The marked transitive form of the gerund

(21)   The gerund has two forms:

    a.   one that is homophonous with the simple form (zero-derivation) if there is no overt *in-situ* object;

        kááw   *pāy*
        make:GER   be.difficult
        'Building (it) is difficult.'

    b.   marked transitive form (Boyeldieu's (1982) "forme transitive 2") for transitive verbs with an overt *in-situ* object NP (same context/conditions as for M-lowering).

        kààwà   *nyàw*   *pāy*
        make:GER:T house   be.difficult
        'Building a house is difficult.'

(22)   Morphology of the marked transitive form of the gerund (glossed "GER:T")

    a.   suffix –V (copy of root vowel, +unpredictable epenthetic -r- with some CV(V) verbs, e.g. *ká* 'do' → *kàrà*)

    b.   All tones are changed to L (**including H**)

	H *sór* 'find'	M *pīg* 'tie'	L *jàr* 'cut'
Gerund with overt object *in situ* -V+ all tones > L	**sòr-ò**	**pìg-ì**	jàr-à

(23)   Selected by auxiliary verb:

    a. *já cə̀r*   ***kááw***
        I   want   make:GER
        'I want to make/build (it).' (lit. I want making/building)

    b. *já cə̀r*   ***kààwà***   *nyàw*
        I   want:T   make:GER:T   house
        'I want to build a house.' (lit. I want the building of a house)

(24)   Selected by five TAM markers (most probably former auxiliaries → Deverbal form has grammaticalized into a particular transitive form triggered by these auxiliaries):

    • *tēé*   Imperfective
    • *ná/ní*   Prospective
    • *wáā/wíī*   Itive
    • *náā/níī*   Prospective-Itive
    • *mínà/mínì* Intentional

    a. *já tēé*   ***kááw***
        I   IPFV   make:GER
        'I am building (it).'

    b. *já tēé*   ***kààwà***   *nyàw*
        I   IPFV   make:GER:T   house
        'I am building a house.'

(25) Headless object NP :

ʔuǎy	bàn	ná	*kú/kùù	yí	ɗāā	bās
you:EMPH	EMPH	PROS	see:GER/id:T	CON	at:you	only

'You, you will see only yours.' (*i.e.* you can only count on yourself)

(26) No overt Object: simple form

a.
já	náā	tāār/*tààrà		(cp.	já	náā	tààrà	nyé)
I	PROS.IT	hunt:GER/id:T			I		PROS.IT hunt:GER:T	elephant

'I will hunt/go hunting.' 'I will go elephant-hunting.'

b.
kàdàr	ʔì	ní	sí/*sìì	ní	nīŋ/*nìŋì	kíny	gàná
when	they	PROS	take:GER/id:T	PROS	throw:GER/id:T	away	when/if

'When they take (it) and throw (it) away…'

(27) Topicalization: simple form

[yí	ɗāŋ]_TOP		mālā	tēé	cə̄r/*cə̀rə̀	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:

yí	rāāg	ná	ká/*kàrà	nǔŋ
CON	god	PROS	do:GER/id:T	to:you(pl)

'What God will do to you.'

(29) Adjunct:

a.
já	náā	tāār/*tààrà	nyàân	(cp.	já	náā	tààrà	nyé)
I	PROS.IT	hunt:GER/id:T	bush		I		PROS.IT hunt:GER:T	elephant

'I will go hunt in the bush.' 'I will go elephant-hunting.'

b.
já	náā	jīn/*jìnì	gì	mə̄ə̄r	(cp.	já	náā	jìnì	càn)
I	PROS.IT	bathe:GER/id:T	in	river		I		PROS.IT bathe:GER:T	child

'I am going to bathe in the river.' 'I am going to bathe the child.'

(30) Dative complement:

yí	rāāg	ná	ká/*kàrà	nǔŋ	(cp. já	ná	kàrà	dūrār)
CON	god	PROS	do:GER/id:T	to:you(pl)	I	PROS	do:GER:T	work

'What God will do to you.' 'I will work.'

(31) Intervening dative (with overt object NP) → marked transitive form of gerund

a.
"maître"	ná	*ká/kàrà	nǎŋ	sísígì
teacher	PROS	do:GER:T	to:us	tale

'The teacher will tell us a tale.'

b.
nīīnī	tēé	*ɗā/ɗàà	kɨ́	wūrā	wɔ́n
woman	IPFV	bring:GER/id:T	to	men	"boule"

'The woman is bringing "boule" to the men.'

(32) Summary:

	Simple form	Gerund
No overt object, or ex-situ object	*nyāg*	*nyāg*
In-situ object	**nyàg** → M-lowering	**nyàg-à** → "transitive" suffix

4. M-lowering in the NP

4.1. Genitive construction vs. connective construction

(33) Laal distinguishes between two noun modification strategies: the GENITIVE construction and the CONNECTIVE construction, illustrated in (34) and (35) below respectively:

(34) Genitive construction: **N⁰ + N**
nyàw   ndíí
house   bird
'(bird's) nest'

(35) Connective construction: **NP + CON + NP**
a. N(P) + CON + N(P)
gégêr   yí   ráábè   /   mōōnō má   nīīnī
camp   CON   Rabeh   /   lion   CON   female
'Rabeh's camp'   'female lion'

b. N(P) + CON + PP
tílà   má   gì   māār
sand   CON   in   river
'River sand (i.e. sand that one can find in or along the river)'

c. N(P) + CON + Locative ADV (= "demonstrative")
nyàw   má   dāŋ
house   CON   there
'That house.'

d. N(P) + CON + Clause ("relative clauses")
mààmàr   jí   múnúŋ   néér
my.gd-mother   CON   give.birth   my.mother
'my maternal gd-mother' (lit. my gd-mother who gave birth to my mother)

(36) Evidence for syntactic status (1): pronominalization of complement:
a. *nyàw   ndíí*   →   *nyàw   nàná*
house   bird   house   its
'a/the bird's nest'   'its nest'

b. *wòn   mōl*   →   *wòn   nàná*
"boule"   pear.millet   "boule" its
'*boule* made of pearl millet'   '*boule* made of it'

(37) Evidence for syntactic status (2): the modifier may be a complex NP:

kɨ́	*yèn*	[[*cǎn*	*nīīnī*]	*kán*]	*wùrù*]ₙₚ
kɨ́	*yēn*:G	*càn-H*	*nīīnī*	*kán*	*wùr-ò*
to	body:G	child-CON	woman	DEF	family-her

'To the girl's family'

4.2. M-lowering in the genitive construction

(38) The M-tone of the head noun of a genitive construction is systematically changed to L:

a. H: *hóy* 'shells'

hóy *jūūrū* 'peanut shells'
shells peanuts

b. M: *dōrūm* 'rope'

dòrùm *hól* 'bark 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: *sŷy* 'tea'

sŷy *nàsárà* 'White people's tea'
tea White.people

4.3. No M-lowering anywhere else

(39) N + Connective (connective construction)

a. ***miān*** *yɨ́* *dōŋ*
road CON be.long
'long road'

b. ***sɨ́*** *nīīr*
sū -H *nīīr*
water -CON be.hot
'hot water (i.e. tea)'

(40) N + Numeral

a. ***dōrūm*** *ɓìdíl*
rope one
'one rope'

b. ***wūrā*** *māā*
men three
'three men'

(41) N + Determiner

a. ***nāārā*** *kán* *nyíní*
man DEF come
'The man came.'

b. **nāārā**   jàn   nyíní
   man   INDF   come
   'A (certain) man came.'

c. **nāārā**   jánàn   nyíní
   man   INDF   come
   'One of the men came.'

(42)   N + Topic/Focus markers

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.'

(43)   N + Adverb, clause-final Negation

a. [ʔà]   ɓál   tēé   tùù   **siāāg**   bìlà
   he   still   IPFV   suck   milk   only
   'He was still suckling.'

b. **mālā**   kə́w   dìàn
   "mala"   too   there:is
   'There is also (a tradition called) the *mala*.'

c. ʔí   **wūrā**   bàn
   it.is   men   EMPH
   'It is the men themselves.'

d. já ká   **dūrār**   wó
   I do   work   NEG
   'I did not work.'

5. M-lowering as a case of morphosyntactic marking

(44)   Claim 1: not phrasal phonology

a. ʔà   **tò**   nī   kū
   he   carry:T   for:me   fire
   'He carried the light (lamp) for me.'

b. ʔà   **juàŋ**   [kí   nīīnī]_{DAT}[sààb   ɓìdíl]_{OBJ}
   he buy:T   for   woman   cloth   one
   'He buys/bought one piece of fabric to the woman.' (Boyeldieu 1982:153)

→ M-lowering is triggered by the presence of the Object NP in–situ, NOT by any other complement.

→ Not phrasal phonology: M →L / __]$_V$[$_{OBJ-NP}$ (Verb and OBJ would need to be adjacent)

(45) Claim 2: M-lowering is a case of morphosyntactic marking: a floting –L suffix.
→Evidence: marked transitive form of the gerund

    a. same context/use as M-lowering

    b. since this form of the gerund is clearly a suffix, M-lowering is best seen as a suffix as well, i.e. a case of morphosyntactic head-marking.

(46) Claim 3: M-lowering in the NP and M-lowering in the VP are one and the same phenomenon:

    a. not only V-Obj relationship

    b. but **head-compl. relationship**

(47) General claim: in Laal, General claim: In Laal, the presence of a directly governed complement in situ (in VP and NP) is marked on the head (V^0, N^0):

	Genitive	Simple form of verb	Gerund
No complement *in situ*	(∅)	∅	∅
Overt *in-situ* complement	**-L** >N^0**-L** [NP]$_{GEN}$	**-L** >V^0**-L** [NP]$_{OBJ}$	**-V̀** >V^0**-V̀** [NP]$_{OBJ}$

5.1. Phonological analysis of M-lowering: L tone suffix

5.1.1. Overview of the tone system of Laal

(49) Tone bearing unit: mora. Main argument: syllables may be linked to more than one tone.

(50) Surface tones (total mono-morphemic words in dictionary: 1800):

    a. three level tones: H, M, L

	1 mora (CV)[3]		**1 syll./2+ morae**		**2 syllables**	
H	(46) *nyé*	'elephant'	(88) *rúú*	'sow'	(369) *míná*	'thing'
M	(31) *kū*	'fire'	(67) *tāā*	'fish'	(199) *dōrūm*	'rope'
L	(25) *nà*	'bee sp.'	(61) *làà*	'dream'	(403) *ɓìrà*	'fishing hook'

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[3] CVC words are excluded here, since it is not yet clear whether coda consonants are moraic or not in Laal.

b. two well attested tone melodies: HL and LH (+ marginal HM and MH)

	1 mora (CV)			1 syllable / 2+ morae			2 syllables		
HL		---		(10)	*suáàr*	'have a meeting'	(105)	*tílà*	'sand'
LH	(1)	*pǐ*	'flower'	(38)	*ŋgìí*	'wasp'	(236)	*kàrú*	'tree *sp.*'
HM		---		(3)	*wáā*	ITIVE (2 TAM + 1 prep.)	(7)	*líbrā*	'needle' (5 bw, 1 det, 1 ideo)
MH		---		(1)	*tēé*	IPFV (1 TAM marker)	(4)	*kēsé*	'bow' (4 bw.)
LM		---			---			---	
ML		---			---			---	

(51) CONCLUSION: M-tone is unstable, "weaker" than H and L.
NB: suffixation to a root may only preserve the M of the root if the suffix itself surfaces as M, otherwise the M tone of the root is changed to H or L (according to rules that are not always understood yet):

		H	**M**	**L**
		lúg 'mix'	*lūg* 'uproot'	*bàar* 'cut'
Ventive	-(*r*)V	*lúg-ú*	**lùg-ù**	*bàar-à*
Associative	-(*r*)V́	*lúg-ú*	**lùg-ú**	*bàar-á*
Medio-passive	-*íny*	*lúg-íny*	**lùg-íny**	*bə̀ə̀r-íny*

(52) One possible analysis of the tone system of Laal (Cf. Akinlabi's (1985) analysis of the Yoruba tone system):
a. Two specified tones: H and L
b. One underspecified tone ∅, realized as M̲ (underlined in the representations below)

5.1.2. M-Lowering is caused by a floating L-tone suffix

(53) M-lowering is caused by a floating L-tone
→ suffix may attach only to a toneless mora.
Arguably because one only tone may attach to one mora: no Cv̂ and only one Cv̌ in the corpus

(54) If preceding mora already bears a tone, -L does not attach and is not realized.
→Evidence that it is present even when it does not attach: it blocks High Tone Spreading, cf. (71) below.

(55) Head has a M-tone (= ∅):
a. *dōrūm*   'rope'

Lexical tone	→	Floating T assoc.	→	Default T insertion
dorum		n/a		*dōrūm*
| |				| |
x x				x x
				⌐╯
				M̲

b. *dòrùm*   *hól*   'bark rope'
    rope   bark.sp.

Lexical tone   →   Floating T assoc.   →   Default T insertion
dorum + *hól*   ***dòrùm***   *hól*   n/a
 | | | | | |
 x x   x   x x   x
             | ⋰ |
    -L   H   **-L**   H

c. *tò*   *kū*   'carry (the) lamp'
    carry:T   fire

Lexical tone   →   Floating T assoc. →   Default T insertion
to + *ku*   ***tò***   *ku*   ***tò***   *kū*
 | | | | | |
 x   x   x   x   x   x
                          ⋰   ╱   ⋮
     -L   **-L**   **-L** <u>M</u>

(56) Head has a H-tone:
      tím   *mār*   'cow leg'
      leg   cow

Lexical tone   →   Floating T assoc.   → Default T insertion
tím + *mar*   n/a   *tím*   *mār*
 | | | |
 x   x   x   x
 | | ⋮
 H   **-L**   H **(-L)** <u>M</u>

(57) Head has a L-tone:
      nyàw   *ndíí*   'bird's nest'
      house   bird

Lexical tone   →   Floating T assoc.   →   Default T insertion
nyaw + *ndíí*   n/a   n/a
 | |
 x   x
 | |
 L   **(-L)** H

5.1.3. Potential problem: Floating H compatible with M-tone

(58) The connective may surface as a floating H tone (ex. (39)b above). This floating H
      tone systematically attaches to the previous mora, whatever its tone:

      a. H: *míná* 'thing'   *míná*   *yí*   *dēē* / *míná*   *dēē*   'my thing'
                                       thing   CON   thing-H   at:me

      b. M: *sū*   'water'   *sū*   *yí*   *nīīr* / ***sǔ***   *nīīr*   'hot water'
                                       water   CON   **water-H**   hot

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c.	L:	*nyàw*	'house'	*nyàw*	*má*	*d̃ē̃ē* /	*nyǎw*	*d̃ē̃ē*	'my house'

c. L: *nyàw* 'house'   *nyàw má d̃ē̃ē* /   *nyǎw d̃ē̃ē*   'my house'
                         house CON   house-H at:me

d. LH: *muǎŋ* 'people'   *muǎŋ yí lá* /   *muǎŋ lá*   'the people from Gori'
                          people CON Gori   people-H Gori

e. HL: *láàl* 'Laal, life (in the village)'   *láàl yí dāār* /   *láǎl dāār*   'his life (in the village)'
                                               life CON at:him   life-H at:him

(59) Potential problem: why isn't the floating H taking replacing the (underspecified) M?
      → floating H attaches to the preceding mora post-syntactically:
      a. H is not suffixed to N⁰, but attaches to the last mora of the NP:
          nyàw   *bǎn*   *dāŋ*   /   *míná*   *yǐn*   *d̃ē̃ē*
          [*nyàw*   *bàn*]-H   *dāŋ*   [*míná*   *yìn*]-H   *d̃ē̃ē*
          house   EMPH-CON   there   thing   INDF-CON   at:me
          'that very house'   'a certain thing which is mine'

      b. Lexical tone   →   Default-M insertion   →   Post-syntactic H
          su yi   niir   *sū yí nīīr*   *sú   nīīr*
           | | /\ | | /\ | /\
           x   x   x x   x   x   x x   x   x x
           | ┊ | ┊⋰ |⋱   ∨
           H   M   H   M   M H   M

5.2. Pronominalization of the complement

5.2.1. Pronominalization of the genitive complement: no M-lowering

(60) There are two ways in Laal to pronominalize a genitive complement NP (cf. 4.1 above):
      a. pronominal suffixes (with about 60 nouns, referring mostly to body parts and kinship terms);
      b. postposed *n-* possessive pronoun, used after all other nouns.

(61) The pronominal suffixes are in turn subdivided into two series:
      a. the *-ə̀r* series (after 1S suffix *-ə̀r*) (46 nouns)
      b. the archaic *-i* series (after 1S suffix *-i*) (12 nouns)

(62) M-lowering seems to occur with the *ə̀r*-series of suffixes:
          Tone of root   → Tone of root-suf.
      a. H   → H (root V is short, 5); HL (root V is long, 10)
      b. M   → L (11)
      c. L(H)   → L (16), LH (irregular, 1)

(63)   Examples (singular suffixes only):

			H		M	L	
			>H	>HL	**M>L**	>L	>LH
			tím 'hand'	*wúúr* 'thigh'	*māl* 'tongue'	*bààw-* 'gd-father'	*nàr* 'son'
1	'my'	*-ə̀r*	*tím-ír*	*wúúr-ìr*	**mə̀l-ə̀l**	*bà̀w-ə̀r*	*nàr-ə́r*
2	'your'	*-à*	*tím-á*	*wúúr-à*	**màl-à**	*bààw-à*	*nàr-á*
3m	'his'	*-àr*	*tím-ár*	*wúúr-àr*	**màl-àl**	*bààw-àr*	*nàr-ár*
3f	'her'	*-ò(g)*	*túm-ú*	*wúúr-ù*	**mòl-ò**	*bòòw-ò*	*nòr-ó*
3n	'its'	*-àn*	*tím-án*	*wúúr-àn*	**màl-àn**	*bààw-àn*	*nàr-án*

(64)   However, the behavior of M-toned nouns with the *i*-series shows that M-lowering is only attested before a L-toned suffixes: [4]

a.   with the first three underlyingly toneless suffixes (1sg, 2sg, 3sg) → no M-lowering,

b.   with the L-toned 3f and 3n suffixes → M-lowering:

			mīn- **'face'**	*jīn-* **'belly'**	**Notes**
1	**'my'**	*-i*	*mīn(-ī)*	*jīn(-ī)*	
2	**'your'**	*-(u)a*	*mūn-ā*	*jūn-ā*	
3m	**'his'**	*-ar*	*mīn-ār*	*jīn-ār*	
3f	**'her'**	*-ò*	**mùn(-ù)**	**jùn(-ù)**	
3n	**'its'**	*-àn*	**mìn**-*àn*	**jìn**-*àn*	

(65)   M-lowering occurring on a Noun root with a pronominal suffix is thus better analyzed as a case of L-tone spreading from the suffix to the toneless root (NB: all the suffixes of the *-ə̀r/-àr* series are L-toned):

a.   *tím-àr*   →   *tím-ár*   'his arm'
                                                 The lexical H of the root spreads 1 mora rightward and delinks the L of the suffix.

b.   *wúur-àr*   →   *wúúr-àr*   'his thigh'

c.   *mal-àl*   →   *màl-àl*   'his tongue'

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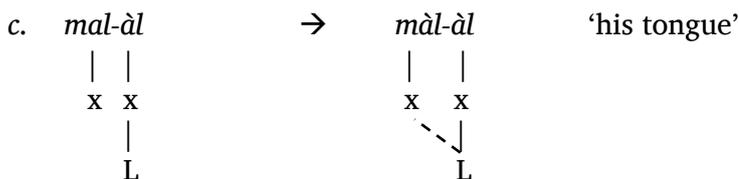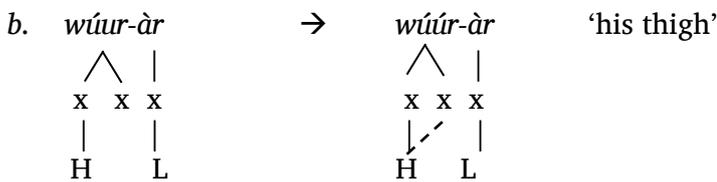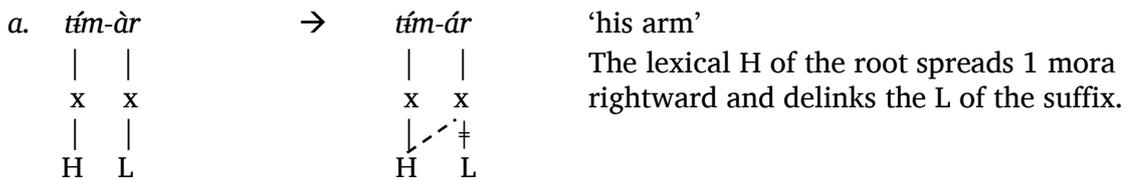
[4] The suffixes of the what I call here the *i*-series have many allomorphs (including -∅), which are ignored here, since they all have the same tonal behavior.

d. *bàaw-àr*   →   *bààw-àr*   'his grand-father'

```
    /\   |              /\   |
    x x  x              x x  x
    |    |              |,'´  |
    L    L              L    L
```

e. *nàŕ -àr*   →   *nàr-ár*   'his son'

```
    |   |              |   |
    x   x              x   x
    |   |              |  ,'‡
    LH  L              L H L
```

f. *mɨn -ar*   →   *mɨ̄n-ār*

```
    |   |              |   |
    x   x              x   x
                       |,--'´
                       M
```
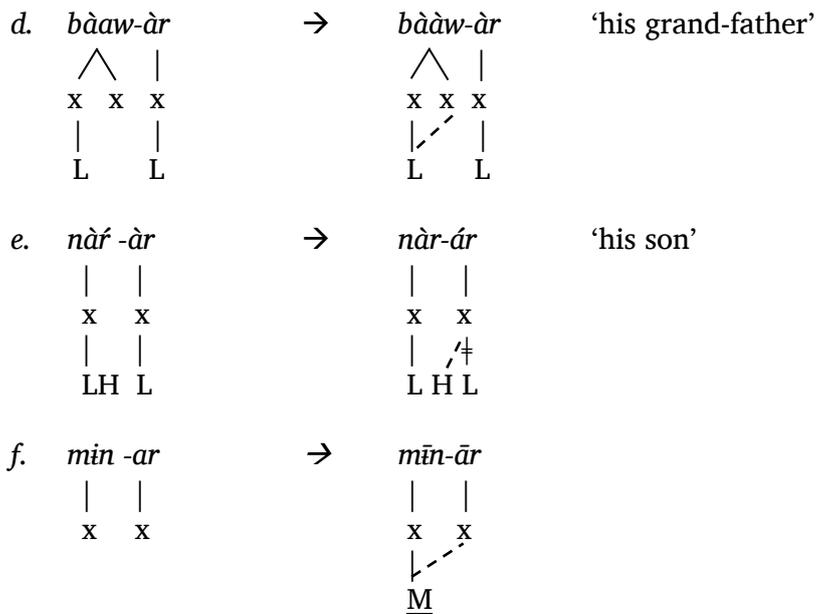
(66) More evidence for the absence of M-lowering with a pronominalized genitive complement: no M-lowering with *n-* possessive pronouns:

bə̀rì	*làgɨ̀m*	→	*bə̄rī*	*nàná*
back:G	horse		back	its
'the horse's back'			'its back'	

(67) Conclusion: There is no -L suffix between the head of a genitive construction and its pronominalized complement.

(68) *NB: n-* possessive pronoun and dative/oblique pronoun paradigms are extremely similar → only difference: first three persons are L-toned. Whether this L tone is akin to the head-marking -L suffix is unclear.

			Dat./obl. *n-*	Poss. *n-*+L
Sg	1	*-i*	*nī*	*nì*
	2	*-a*	*nā*	*nà*
	3m	*-ar*	*nār*	*nàr*
	3f	*-òg*	*nòg*	
	3n	*-àná*	*nàná*	
Pl	1ex	*-ùrú~-ŭ*	*nùrú~nŭ*	
	1in	*-ăŋ*	*năŋ*	
	2	*-ŭŋ*	*nŭŋ*	
	3mf	*-ìrí~-ĭ*	*nìrí~nĭ*	
	3n	*-uàná*	*nuàná*	

5.2.2. Pronominalization of the object of a transitive verb: M-lowering

(69) The object of a transitive verb is always pronominalized as a pronominal suffix on the verb.

(70) Contrary to the genitive construction, the head-marking -L suffix is present between the verb and its pronominalized object: M-tone verbs systematically undergo M-

lowering, which cannot be due to the spreading of a L tone from the suffix, since the suffixes of the first three persons are H-toned:

			H	M	L
			sór 'find'	*nyāg* 'eat'	*jàr* 'cut'
1	'me'	*-ə́r, -ə́n*	*sór-ə́r*	**nyə̀g-ə́n**	*jàr-ə́n*
2	'you'	*-á, -án*	*suár-á*	**nyuàg-án**	*juàr-án*
3m	'him'	*-ár, -án*	*suár-ár*	**nyàg-án**	*jàr-án*
3f	'her'	*-ò, -òn*	*sór-ò*	**nyòg-òn**	*jòr-òn*
3n	'it'	*-àr, -àn*	*suár-àr*	**nyàg-àn**	*jàr-àn*

a. *nyag-án* → *nyàg-án* 'eat him'
    | | | | -L attaches to toneless TBU
    x   x   x   x
    | ` |
    -L H   **-L** H

b. *jàr -án* → *jàr -án* *'cut his throat'*
    | | | | -L cannot attach to TBU already bearing
    x   x   x   x   a tone
    | | | |
    H **-L** H   H**(-L)** H

c. *sór -ár* → *suár -ár* 'find him'[5]
    | | | | -L cannot attach to TBU already bearing
    x   x   x   x   a tone
    | | | |
    H **-L** H   H**(-L)** H

(71) Evidence for the presence of –L suffix: it blocks HTS (compare with (65)a):

sór -àr → *suár -àr* 'find it'
| | | | -L cannot attach to TBU already bearing
x   x   x   x   a tone, and blocks HTS
| | | |
H **-L** L   H**(-L)** L

6. Concluding remarks

(72) M-lowering is not a prosodic alternation: cases of intervening dative complement violate the surface-oriented adjacency criterion which is crucial to any prosodic approach to this problem, *e.g.* Hayes' (1990) Precompiled Phrasal Phonology. →his account of Hausa Final Vowel Shortening crucially rests on the fact that final vowel shortening does not apply with an intervening dative complement (cf. ex.(2) above).

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[5] 'ia' and 'ua' are diphthongized monomoraic vowels, historically derived from /ɛ/ and /ɔ/ respectively.

(73) M-lowering is a case of morphosyntactic marking (on the head) of the presence of an overt (underlyingly) adjacent *in-situ* complement.

	Genitive	Simple form of verb	Gerund
No complement *in situ*	($\varnothing$)	$\varnothing$	$\varnothing$
Overt *in-situ* complement	**-L** $> N^0$**-L** $[NP]_{GEN}$	**-L** $> V^0$**-L** $[NP]_{OBJ}$	**-V̀** $> V^0$**-V̀** $[NP]_{OBJ}$

(74) The morphosyntactic analysis proposed here is in keeping with recent reanalyses of similar phenomena in other languages that used to be analyzed as cases of phrasal phonology, in particular Crysmann's (2004, 2005) reanalysis of Hausa final vowel shortening as the expression of an inflectional category, based on arguments similar to those in (73) above.

   a. "FVS in Hausa is but one exponent of a highly systematic distinction drawn in the language relating to the mode of realization of some privileged argument, viz. the direct object." (Crysmann 2005:19)

(75) Interestingly, Crysmann (2011) shows that the same property ("head-marking, signaling the presence of an adjacent *in-situ* complement" (2011:1)) is attested in Hausa genitive constructions making use of the genitive linker *-n/-r*.

   a. NB: Contrary to Laal, the (non-)extraction marking morphemes are different (and historically unrelated) in the NP and in the VP.

(76) Laal, like Hausa, belongs to the typological class of "extraction-marking languages" (Crysmann 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.

(77) Is a reanalysis of Yoruba L-raising along those lines possible (within an analysis of the Yoruba tone system where M is underlying (not underspecified, cf. Ajíbóyè et al. 2011)?

(78) L-raising (ex. (3) above) is caused by a floating –M suffix which delinks only L, not H[6] → non-extraction head-marking in VP.

   a. H is stronger than L

   b. Potential problem: M is analyzed as being less strong than L in Yoruba→ why should it delink L?

(79) Non-extraction head-marking in NP:

   • Genitive M-toned linker vowel V̄ (enclitic? suffix?) (Akinlabi 1985:84sq., Akinlabi and Liberman 2000:18)

   • no tone interaction: H, M, and L of preceding mora remain unchanged

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[6] I owe this suggestion to Larry Hyman.

a.	*ìlé*	*e*	*Táyọ̀*	/	*ìlé*	*(e)*	*Òjó*
	house	GEN	Tayo		house	GEN	Ojo
	'Táyọ̀'s house'				'Òjó'shouse'		

b.	*ọmọ*	*ọ*	*Táyọ̀*	/	*ọmọ*	*(ọ)*	*Akin*
	child	GEN	Tayo		child	GEN	Akin
	'Táyọ̀'s child'				'Akin's child'		

c.	*ọkọ̀*	*ọ*	*Dọ̀tun*	/	*ọkọ̀*	*(ọ)*	*Òjó*
	car	GEN	Dotun		car	GEN	Ojo
	'Dọ̀tun's car'				'Òjó's car'		

(80) Hypothesis: both floating -M and V̄ are historically related → are two allomorphs of the same suffix, (much like Laal -L and -V̀), with slightly different properties

    a. –M lost its supporting V → became a floating tone, attaching to the previous mora, delinking its L.

    b. Problem: -V̄ is optional before Nouns with initial vowel. If this is a case of deletion, one would have to explain why the tone is in this case deleted together with the vowel (no floating -M).

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