Rich Representations: A Tonal View on Lexical Exceptionality

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Agenda

- **Tonal Phonology** is just as lexically exceptional as segmental phonology (and more so)

- **Autosegmental Representations**
  - provide a principled way to deal with exceptions
  - avoid problems by alternative approaches **(Indexed Constraints, Cophonologies)**
  - have still unexplored theoretical potential

Margi: Stable vs. Assimilating Verbs (Hoffmann 1963:122)

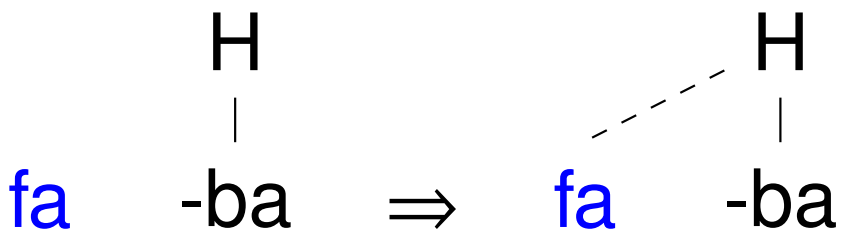
gə́	**gə́-bá**	‘take out (liquid)’
cí	**cí-bá**	‘confess’
pá	**pá-bá**	‘repair’

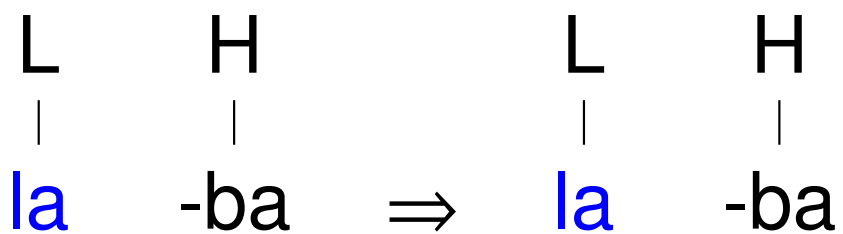
là	**là-bá**	‘dig out’	**ɗə̀l**	**ɗə́l-bá**	‘buy’
mə̀	**mə̀-bá**	‘run out’	**fà**	**fá-bá**	‘take out’
ptsà	**ptsà-bá**	‘roast thoroughly’	**ʃù**	**ʃú-bá**	‘stir well’

Margi: Stable vs. Assimilating Suffixes (Hoffmann 1963:129)

gə́	**gə́-bá**	‘take out (liquid)’	**gə́**	**gə́-ná**	‘take out (liquid)’
cí	**cí-bá**	‘confess’	**ʃí**	**ʃí-ná**	‘spin’
pá	**pá-bá**	‘repair’	**tá**	**tá-ná**	‘cook’
là	**là-bá**	‘dig out’	**pə̀**	**pə̀-nà**	‘throw away’
mə̀	**mə̀-bá**	‘run out’	**ɣà**	**ɣá-nà**	‘shoot away’
ptsà	**ptsà-bá**	‘roast thoroughly’	**pcì**	**pcì-nà**	‘wash’

Classical Margi Analysis (≈ Pulleyblank 1986)





Anywa Raising vs. Inert L-Prefixes (Reh 1993:151)

ðjàːŋ	~	à-ðjáːŋ	‘durra bird’
ɟàːk	~	à-ɟáːk	‘red with white line on side’
tùːt	~	à-túːt	‘neighbor’

ɟàːθ	~	ɲì-ɟàːθ	‘tree fruit’
dùòŋ	~	ɲì-dùòŋ	‘light yellow beads’
làːl	~	ɲì-làːl	‘child’

Kunama Raising vs. Inert Noun Roots (Ashkaba et al. 2000:21)

āgūd-ā	‘water pot’ (SG)
āgūd-ēe̯è	‘water pot’ (PL)
āgūd-àm-ā	‘this water pot’ (SG)

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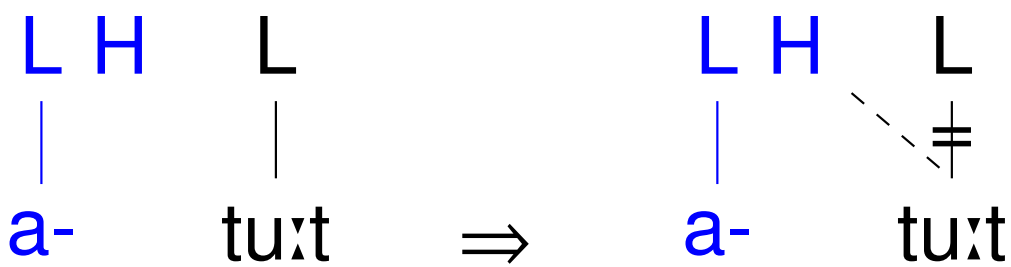
tōm-**á**a̯ā	‘fire’ (SG)
tōm-**é**e̯è	‘fire’ (PL)
tōm–**á**a̯ām-ā	‘this fire’ (SG)

Raising as an Effect of Floating Tones



Alternative I: Indexed Constraints

Input: = b.	IDENT τ_{ba}	AGREE τ	IDENT τ_{na}
a. **mə̀-bà**	*!		
☞ b. **mə̀-bá**		*	

Input: = b.	IDENT τ_{ba}	AGREE τ	IDENT τ_{na}
☞ a. **pə̀-nà**			*
b. **pə̀-ná**		*!	

(Pater 2007, Flack 2007, Finley 2010, Mahanta 2012, Jurgec and Bjorkman 2018)

Alternative II: Construction/Cophonology Theory

ba-Construction:

Input: = b.	IDENT τ	AGREE τ
a. **mə-bà**	*!	
☞ b. **mə-bá**		*

na-Construction:

Input: = b.	AGREE τ	IDENT τ
☞ a. **pə-nà**		*
b. **pə-ná**	*!	

(Orgun 1996, Inkelas 1998, 2016, Sande 2017, Rolle 2018)

Roadmap of the Talk

- Richness of Representations
- Coverage of Rich Representations
- Assets of Rich Representations
  - Demarcation of Phonology and Morphology
  - Lexical Conspiracies
  - Locality
- Extending the Coverage

Major Languages under Discussion

Classical Studies

- Margi (Chadic) (Pulleyblank 1986)
- Kikuyu (Bantu) (Clements 1984, Clements and Ford 1979, 1981)
- Konni (Gur) (Cahill 1999)
- Gã (Kwa) (Paster 2000, 2003)

More

- Anywa (Western Nilotic) (Reh 1996)
- Mao (Omotic) (Ahland 2012)

Leipzig Projects:

- Tebay (2019) on Hausa & Chimwiini (Chadic & Bantu)
- Gjersøe (2019) on Nuer (Western Nilotic)
- Meyase (2016) on Tenyidie (Tibeto-Burman)

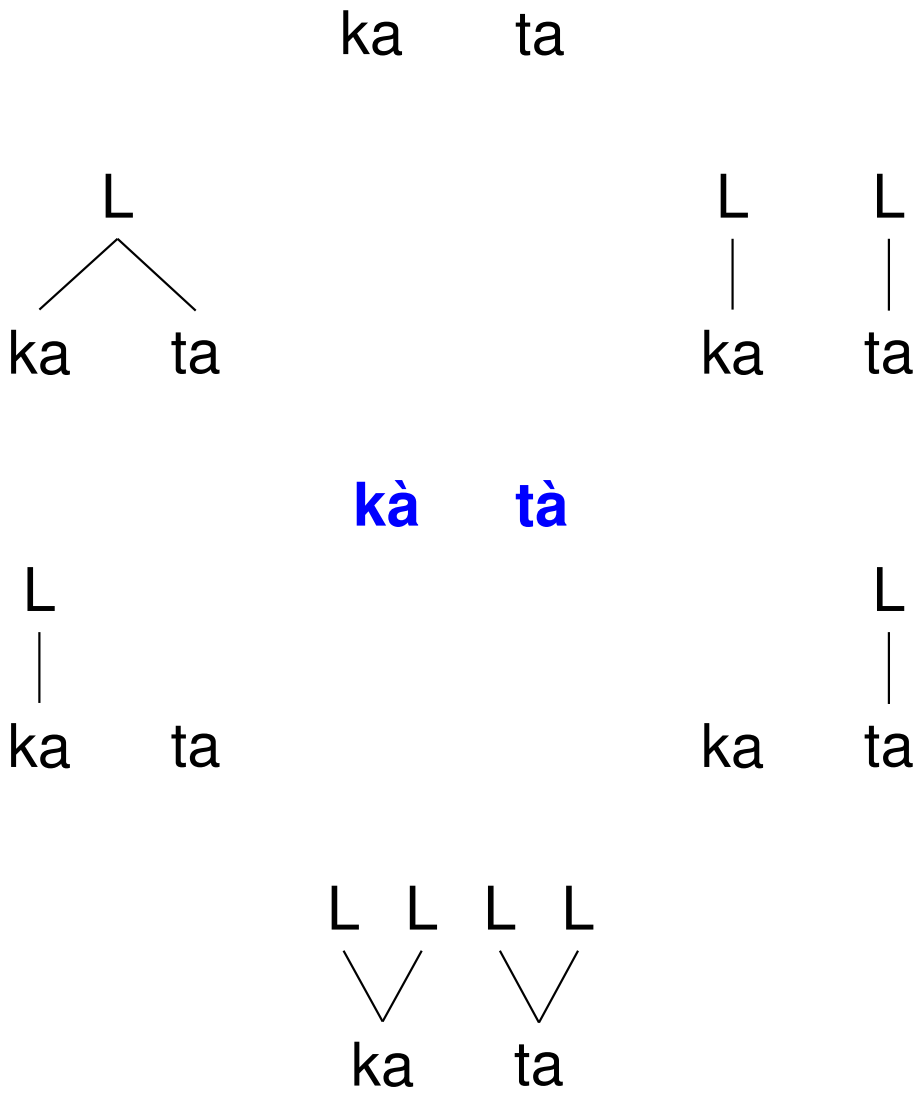
Poor Segmental Representations

kátá

$\approx$

$$\begin{bmatrix} \text{+cons} \\ \text{-son} \\ \text{DORSAL} \\ \text{-voice} \end{bmatrix} \begin{bmatrix} \text{-cons} \\ \text{-high} \\ \text{+low} \\ \textbf{-HIGH} \end{bmatrix} \begin{bmatrix} \text{+cons} \\ \text{-son} \\ \text{CORONAL} \\ \text{-voice} \end{bmatrix} \begin{bmatrix} \text{-cons} \\ \text{-high} \\ \text{+low} \\ \textbf{-HIGH} \end{bmatrix}$$

Rich Autosegmental Representations



Rich Representations ≈ Partial Representations ≈ Underspecification

Toneless Morphemes ≈ **Tonally** unspecified **segments**

Floating tones ≈ **Segmentally** unspecified **tones**

My Take on Abstractness

- Floating tones are **not more abstract** than segments
  - Neither are separable parts of acoustic signals
  - In contrast to segments, tones are concrete articulatory gestures
- Abstractness is inherent to underlying forms + alternations
  Rich Representations rather **attenuate** abstractness
- Abstractness is also inherent in tonal phonology

The Richness of Kɔnnɪ Nouns (Cahill 1999:332)

(487)		UR	Citation	'One X'	'His/her X'
a.	'fish'	LH	zàsíŋ	zàsíŋ !káání	ù zá!síŋ
b.	'louse'	ØH	kpìbíŋ	kpìbíŋ !káání	ù kpíbíŋ
c.	'hat'	LØ	kàgbá	kàgbà kàání	ù kágbà[11]
d.	'woman'	ØØ	hɔ̀gú	hɔ̀gú !káání	ù hɔ́gù

The Coverage of Rich Representations

- **Root-specific** Alternations
  ⇒ Margi verbs/Kunama nouns

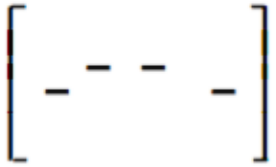
- **Affix/Construction-specific** Alternations
  ⇒ Margi verbs/Gã Imperatives

- **Category-specific** Alternations
  ⇒ Mao verbs

- **Phrasal Effects:**
  Kikuyu downstep/Chimwiini accent

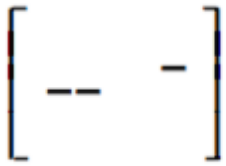
Category-specific Downstep in Mao

(Ahland 2012:109/116)

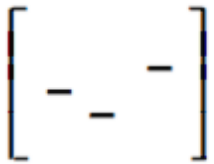


(3.11) ha-tí-héz-↓á
AFF-1SG-hit-DECL
'I hit (it).'

Predictable downstep after **all** H-tone verbs

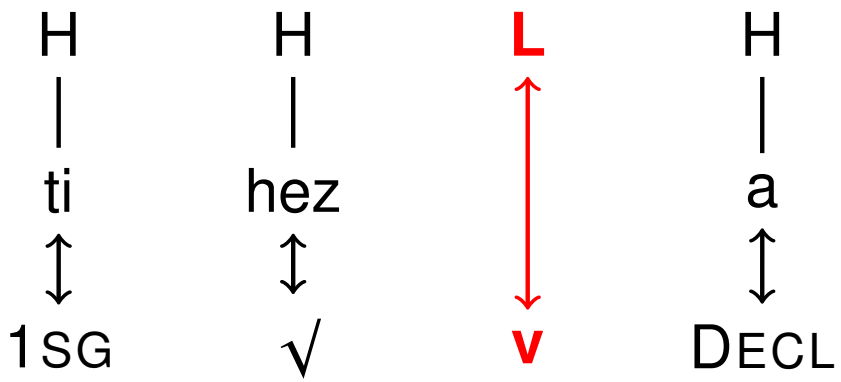


(3.4) ha-int'-á — M-tone verb stem
AFF-see-DECL
'S/he saw.'



(3.5) ha-àld-á — L-tone verb stem
AFF-know-DECL

Category-specific Downstep in Mao: RR Analysis



Phrasal Effects: Kikuyu Downstep

Subject + Verb (Clements and Ford 1981:321)

ɣàkìrí ɔ́-nír-ɛ́ ‘Gakiri saw’
kàŋɛ̀rí ɔ́-↓nír-ɛ́ ‘Kangeri saw’

Noun + Conj (+Noun) (Clements and Ford 1981:315)

mòβàkè ná kèŋànì ‘tobacco plant and crocodile’
mwànèkì ↓nà njòɣóná-ɛ́ ‘Mwaneki and Njuguna’

Phrasal Effects: Kikuyu Downstep

Object + Object (Clements and Ford 1981:315)

áhɛ̀ìrɛ́	mwàɣáhìɲá	↓ɲjátá
he-gave	weakling	star

Object + P (+Noun) (Clements and Ford 1981:321)

ndjɔ̀ní↓rɛ́	móɣɛ̀ràɲjá	ðéínè	wá	ɲómbà
I-didn't-see	examiner	inside		house

ndjɔ̀ní↓rɛ́	mwàɣáhìɲá	↓ðéínè	wá	ɲómbà
I-didn't-see	weakling	inside		house

Assets of Rich Representations

- Integration and Demarcation of Phonology and Morphology
- Predicts clusters of exceptionality
- Derives Lexical Conspiracies
- Locality restrictions for free

Integration and Demarcation of Phonology and Morphology

Inkelas' Conjecture (Inkelas 2008, 2014)

Morphologically conditioned phonology

=

Nonconcatenative Morphology

(+ segmental coexponents)

Gã Imperatives (Paster 2000:74)

L-Verbs:

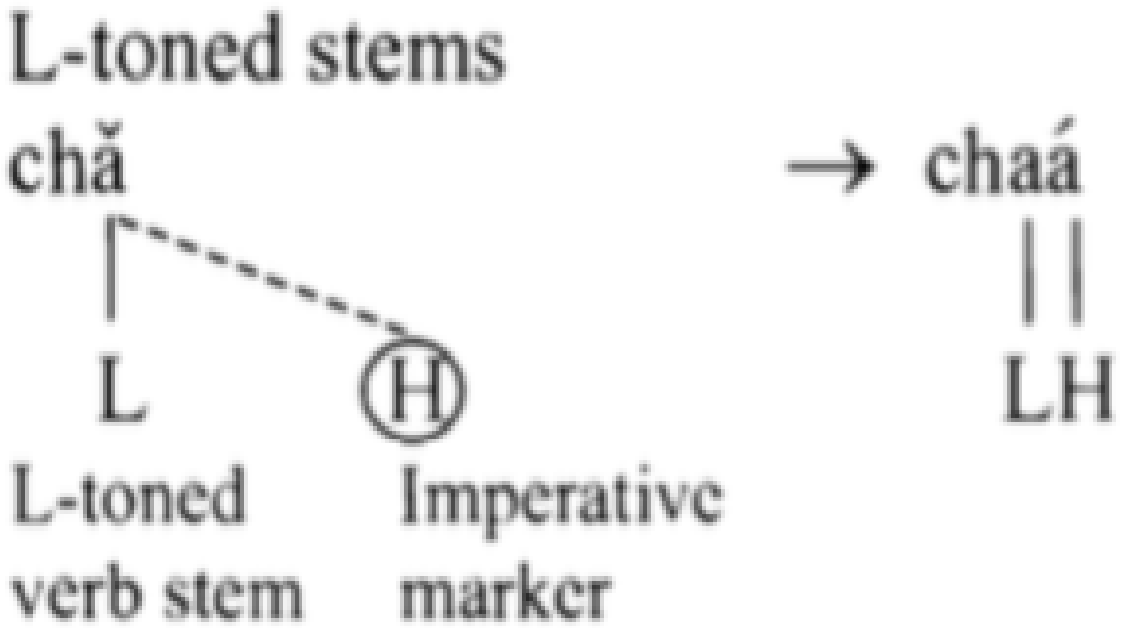
e-jo	'he danced'	e-cha	'he dug'
joó	'dance!'	chaá	'dig!'
e-fo	'he cut'	e-t̲i	'he scratched'
foó	'cut!'	t̲ií	'scratch!'

H-Verbs:

chú	'send!'	lá	'sing!'
mɔ́	'catch!'	wá	'help!'

RR-Analysis of Gã

(Paster 2003:37)



Inkelas' Conjecture in Rich Representations

Rich Representations

=

Lexically Specific Phonology

∪

Nonlinear Affixation

Advantages of Rich Representations

- **Over Construction Phonology:**
  phonology can be restricted to **natural** processes
  (↯ added H-tones in Gã imperatives and in Mixtec)

- **Over Indexed Constraints (without RRs):**
  Effects of indexation are mediated by phonological material
  ⇒ doesn't extend to morphology without segmental content

Mixtec Perturbed Forms (McKendry 2013:42)

Isolation form	Perturbed form	
M M βē^{ʔ}ē	**H M** βé^{ʔ}ē	‘house’
M L kōò	**H L** kóò	‘snake’
M L kūtù	**M H** kūtú	‘nose
L H sùʧí	**H H** súʧí	‘child’
L M βìnī^{n}	**H M** βínī^{n}	‘puddle’

Inkelas' Conjecture: The abducted argument

"Inkelas's Generalization shows that the presence of absence of morphologically conditioned phonological processes are independent from whether affixation is overt . . . The independence of affixation from conditioned phonological processes shows that they should be modeled as separate components of morphemic content. While affixes consist of normal segmental content, we adopt the idea that conditioned phonological processes are due to lexically-associated cophonologies, constraint rankings that apply in a particular lexical or morphological context · · · In contrast, affixal or item-based views of process morphology would need to distinguish normal affixes from those which trigger phonological processes, and allow them to co-occur." (Sande and Jenks 2018:40-41)

Capturing Clusters of Exceptionality

Clusters of Exceptionality

Rich representations are in principle visible to **all** phonological rules

Crucial predictions:

- Exceptionality should extend to multiple processes
- Exceptionality should be consistent/follow from more general alternation patterns in the language

Anywa Raising vs. Inert L-Prefixes

(Reh 1993:151)

ðjàːŋ	~	à-ðjáːŋ	‘durra bird’
ɟàːk	~	à-ɟáːk	‘red with white line on side’
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ɟàːθ	~	ɲì-ɟàːθ	‘tree fruit’
dùòŋ	~	ɲì-dùòŋ	‘light yellow beads’
làːl	~	ɲì-làːl	‘child’

Anywa Clustering: Raising L-Prefixes also lower (Reh 1993)

pí꞉w	~	à-pì꞉́w	‘first-born twin’
gú꞉t	~	à-gù꞉́t	‘person with big navel’
tíédí	~	à-tìèdí	‘brave person’

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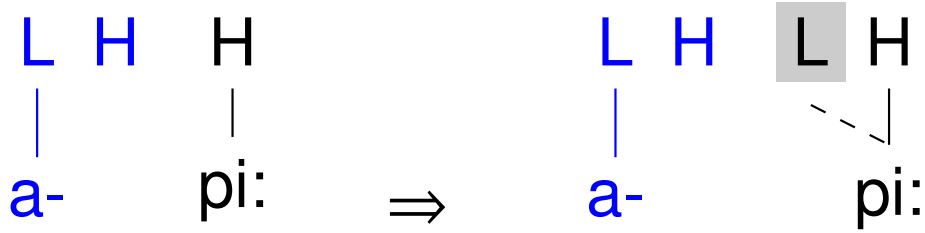
wá꞉	~	ɲì-wá꞉	‘cousin’
pí꞉	~	ɲì-pí꞉	‘drop of water’
có꞉kó	~	ɲì-có꞉kó	‘niece’

Triggering Lowering by Floating Tones



Effects of Overt H-tones

H-Tone Spreading

mʌ́th	-ɔ̀	→	mʌ́th-ó	(p.68)
drink:VENT	-INF		‘to drink’ (VENT)	
gwʌ́ːt	-ɔ̀	→	gwʌ́ːt-ó	
ominous:sign	-SG		‘ominous:sign’ (SG)	

L-Tone Epenthesis

ʊ́	máth	-à	→	ʊ́-màth-á	(p.204)
HAB	drink:PD	-1SG		‘whenever I drink’	

Effects of Floating H-tones

H-Tone Spreading

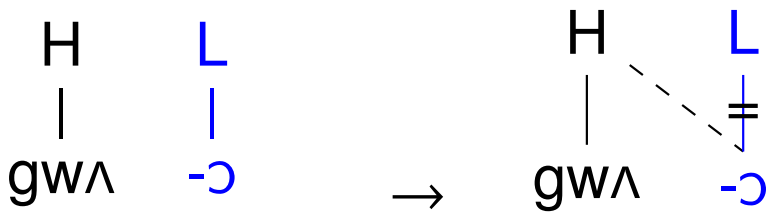
a.	à^{H}-	dhyàŋ		→	à-dhyáŋ	(p.68)
	NOM-	durra:bird			‘durra bird’	
b.	à^{H}-	càŋ	-jì	→	à-cáŋ-jí	
	PST-	eat	-it		‘you ate it’	

L-Tone Epenthesis

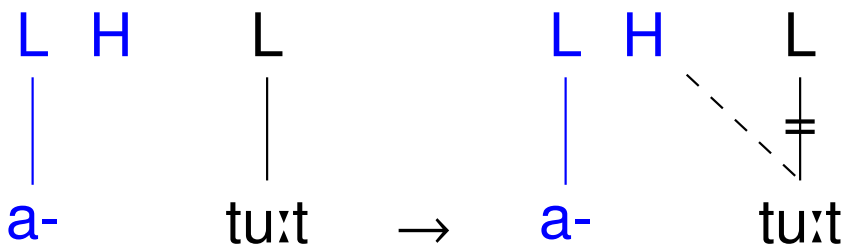
a.	mànà^{H}	kénó	→	mànà-kènó	(p.68-69)
	this:be	hearth		‘this is a hearth’	
b.	ɛ̀nà^{H}-	ó	→	ɛ̀nà^{H}-ǒ:	
	3S:PA	come		‘(s)he came’	

H-Tone Spreading

Non-Floating H:



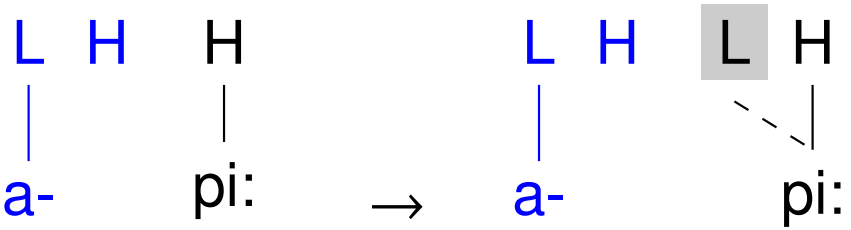
Floating H:



L-Tone Epenthesis

Non-Floating H:

Floating H:



Kikuyu Tone Shifting (Clements 1984:292)

(17) Current Habitual (CH)

L tone root: -rər- 'look at'

to rər aγ a	'we look at'	má rór aγ a	'they look at'
to mo rər aγ a	'we look at him/her'	má mó rər aγ a	'they look at him/her'
to ma rór aγ a	'we look at them'	má má rór aγ a	'they look at them'

H tone root: -tom- 'send'

to tom áγ a	'we send'	má tóm áγ a	'they send'
to mo tom áγ a	'we send him/her'	má mó tom áγ a	'they send him/her'
to ma tóm áγ a	'we send them'	má má tóm áγ a	'they send them'

Kikuyu H-Spread (Clements 1984:318)

(65)	né kémore	'it's a torch'
	né móɣatɛ̌	'it's bread'
	né móɣɛká	'it's a rug'
	né máɣɔkɔ́	'it's bark'
(66)	kemore kenɛné	'a big torch'
	moɣatɛ mónɛné	'big bread'
	moɣɛká mónɛné	'a big rug'
	maɣɔkɔ́ mánɛné	'big bark'

(67) H Tone Spread

Kikuyu Flattening (Clements and Ford 1981:320-21)

ndērā:rɔ́rīrē kēŋāŋí	'I watched the crocodile'
kēŋāŋī	'crocodile'
ndērā:rɔ́rīrē ŋgīŋgɔ́	'I watched a neck'
ŋgīŋgɔ̄	'neck'
ndērā:rɔ́rīrē kēɣīrērériá	'I watched the hindrance'
kēɣīrērēriā	'hindrance'
ndērā:rɔ́rīrē mōβākē	'I watched the tobacco-plant'
mōβākē	'tobacco-plant'
ndērā:rɔ́rīrē mō:ŋgáī	'I watched M̃ungai'
mō:ŋgáī	'M̃ungai'
ndērā:rɔ́rīrē mōɣērāniá	'I watched the examiner'
mōɣērāniā	'examiner'

kēŋāŋí	keɔ́níré	'a crocodile saw'
mōɣērāniá	ɔ́:níré	'the examiner saw'
ŋāŋá	ɔ́:níré	'Ng´ang´a saw'
ɣākīrí	ɔ́:níré	'Gakiri saw'
mō:ŋgáī	ɔ́:níré	'M̃ungai saw'

Kikuyu: Blocking of . . . (Clements 1984:319-20)

H-Spread:

(71)

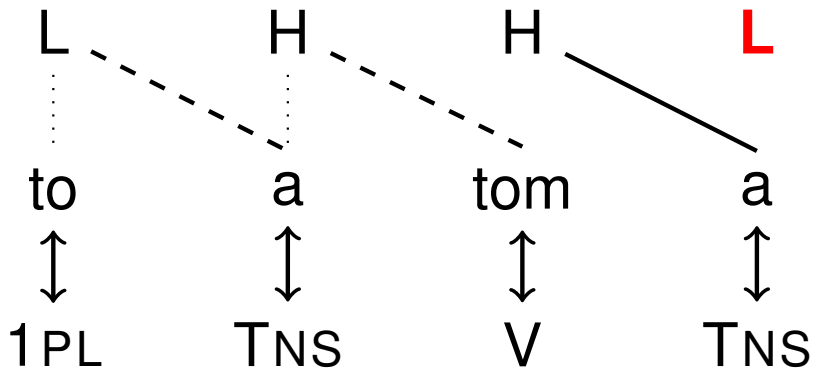
L stems:	toaróra mokandá	'we have just looked at a rope'
	toakíɲera mokandá	'we have just caught up with a rope'
H stems:	toatómá mokandá	'we have just sent a rope'
	toahétóka mokandá	'we have just overtaken a rope'

Flattening:

(70) Current Past Completive (subject relative form)

mondo !	orɔrirɛ́ mokanda	'someone who looked at a rope'
mondo !	omorɔrirɛ́	'someone who looked at him'

Shifting and Blocking



Problems for Cophonologies/Indexed Constraints

Don't predict either:

- Clustering of **exceptionality**
- Correlations with **general alternations**

Lexical Conspiracies

Lexical Conspiracy in Mao (Ahland 2012:197)

Unpredictable suffix tone if and only if:

special **noun root**

meets

special **affix**

Mao: Spreading vs. Idiosyncratic Nouns (Ahland 2012:133,194)

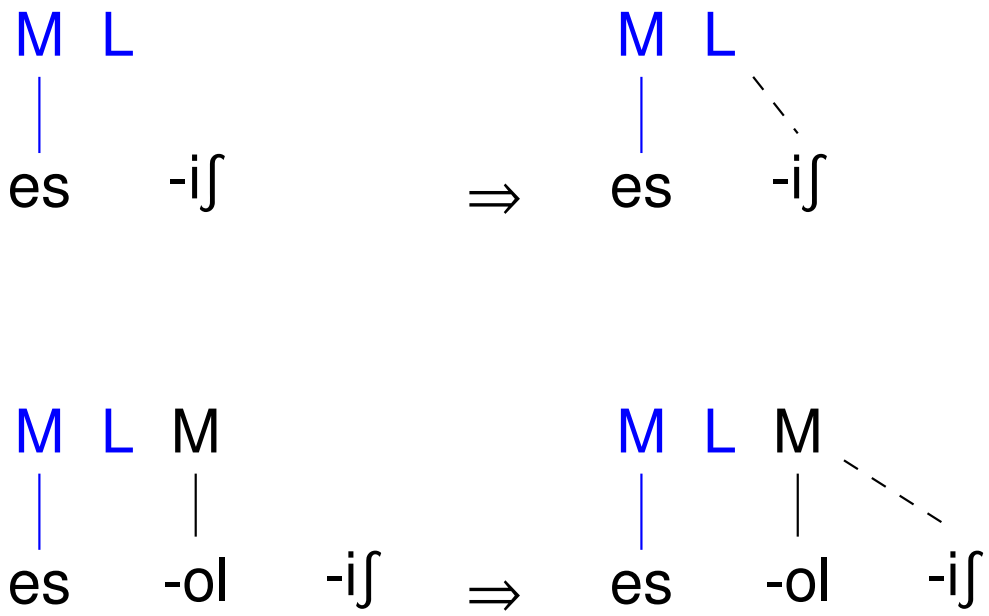
Bare	Final	Subject	Object		
wàr	wàr**-è**	wàr**-ìʃ**	wàr**-nà**	‘clothing’	L
p’īʃ	p’īʃ**-ē**	p’īʃ**-īʃ**	p’īʃ**-nā**	‘child	M
púw	púw**-é**	púw**-íʃ**	púw**-ná**	‘beer’	H
kān	kān**-é**	kān**-íʃ**	kān**-ná**	‘dog’	M(-H)
múnts	múnts**-è**	múnts**-ìʃ**	múnts**-nà**	‘woman’	H(-L)
ēs	ēs**-è**	ēs**-ìʃ**	ēs**-nà**	‘person’	M(-L)

Mao: Constant vs. Adapting Suffixes (Ahland 2012:133,194)

Bare	**Final**	**Subject**	**Object**		
kān	kān**-é**	kān**-íʃ**	kān**-ná**	‘dog’	M(-H)
múnts	múnts**-è**	múnts**-ìʃ**	múnts**-nà**	‘woman’	H(-L)
ēs	ēs**-è**	ēs**-ìʃ**	ēs**-nà**	‘person’	M(-L)

Bare	**Dual**	**Plural**	
kān	kān**-kūw**-īʃ	kan**-ōl**-īʃ	‘dog’
múnts	múnts**-kūw**-īʃ	múnts**-ōl**-īʃ	‘woman’
ēs	ēs**-kūw**-īʃ	ēs**-ōl**-īʃ	‘dog’

RR-Analysis of Lexical Conspiracy in Mao (Ahland 2012:197)



Conspiracy in Gã Imperatives (Paster 2000:74)

L-Verbs:

e-jo	'he danced'	e-cha	'he dug'
joó	'dance!'	chaá	'dig!'
e-fo	'he cut'	e-t̲i	'he scratched'
foó	'cut!'	t̲i̲í	'scratch!'

Ø-Verbs:

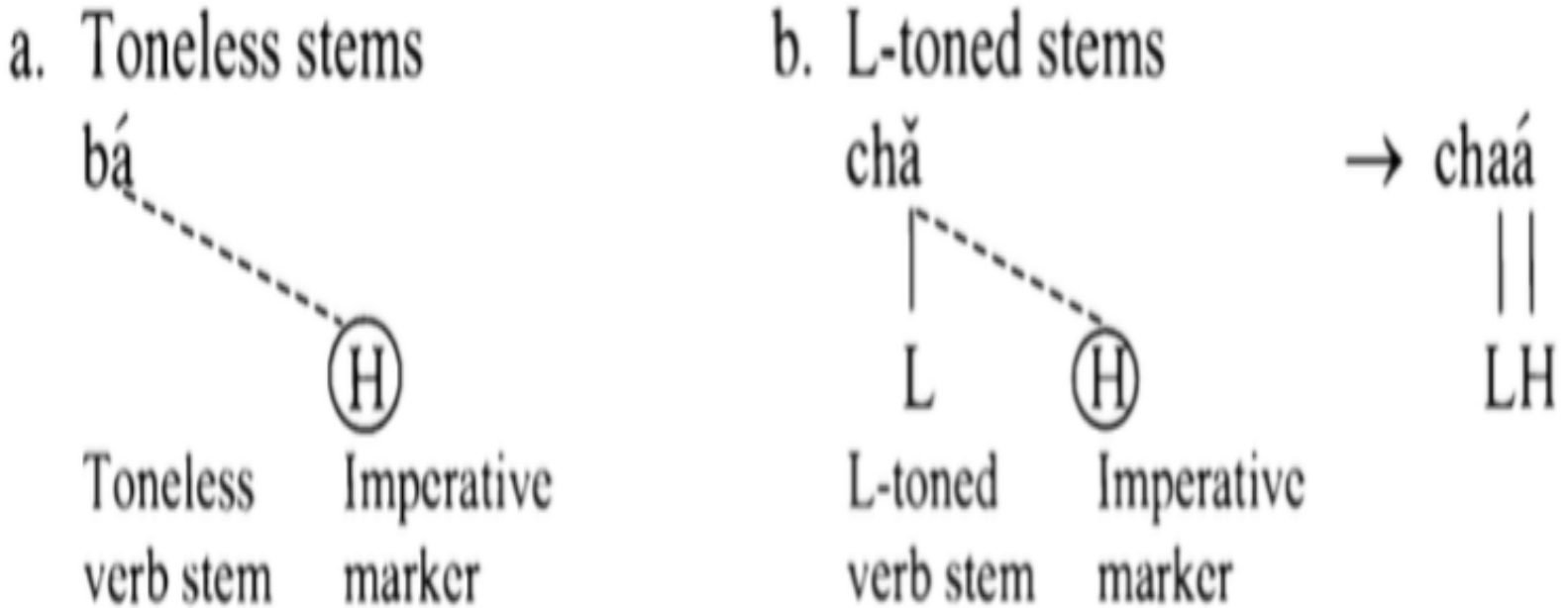
e-ba	'he came'	e-ho	'he passed by'
bá	'come!'	hó	'pass by!'
e-lɛ	'he knew'	e-wo	'he wore'
lɛ́	'know!'	wó	'wear!'

Conspiracy in Gã Imperatives (Paster 2003)

- Some otherwise L roots become LH in the imperative
  others become L
- RR-Analysis:
  - Underlying L vs. Underlying Ø (with default-L inserted)
  - The imperative H-affix extends L-roots, but overwrites Ø-roots
- **Conspiracy:**
  The L ∼ H pattern only emerges if both conditions are met:
  - Imperative construction
  - Special Root class

RR-Analysis of Gã

(Paster 2003:37)



Gã L-/Ø extends to negative forms (Paster 2003:37)

(44)

a. H-toned roots		b. H-toned roots	
e-lá-áâ	'he did not sing'	e-lá-kɔ	'he has not sung'
e-kpɛ́-ɛ́ɛ̂	'he did not chew'	e-chú-kɔ	'he has not sent'
Toneless roots		Toneless roots	
e-hó-óô	'he did not pass by'	e-hó-kɔ	'he has not passed by'
e-lé-éê	'he did not know'	e-lé-kɔ	'he has not known'
L-toned roots		L-toned roots	
é-ꜜchá-áâ	'he did not dig'	é-ꜜchá-kɔ	'he has not dug'
é-ꜜmā́-ā́ā̂	'he did not build'	é-ꜜmā́-kɔ	'he has not built'

Problems for . . .

- **Cophonologies** (more generally):

  Roots shouldn't have idiosyncratic effects on affixes
  ('Strict Base Mutation', Inkelas 1998)

- **Indexed Constraints:**

  Constraints can only be indexed to single morphemes
  (also incompatible with stem/word-indexation in Jurgec and Bjorkman 2018)

Locality

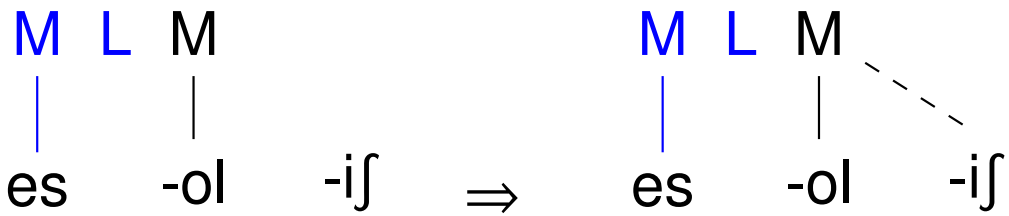
- **Phonological:**

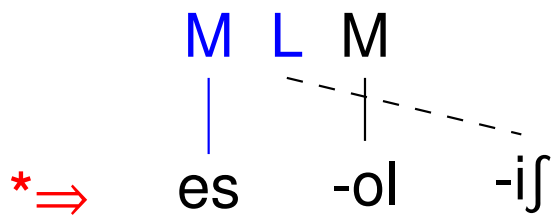
  Effects on adjacent features, segments, syllables, . . .

- **Morphosyntactic:**

  Effects inside stems, words, phrases, . . .

Phonological Locality in Mao (Ahland 2012:197)





Phonological Locality challenges . . .

- **Indexed Constraints:**

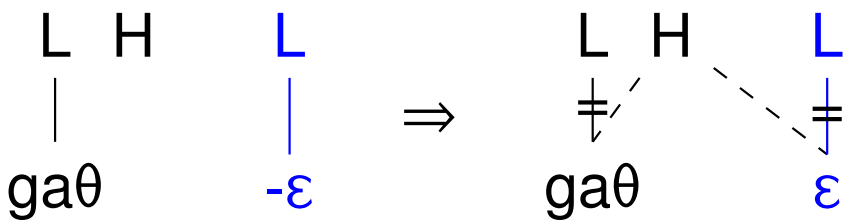
  Struggle with locality domains
  (Flack 2007, Jurgec and Bjorkman 2018)

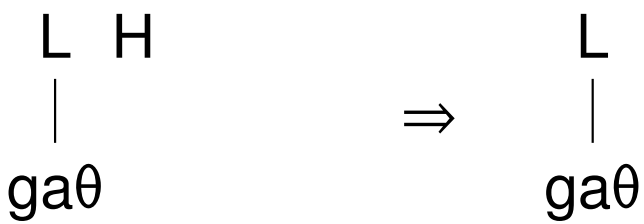
- **Cophonologies:**

  Across-the-Board application as the norm
  (Flack 2007, Jurgec and Bjorkman 2018)

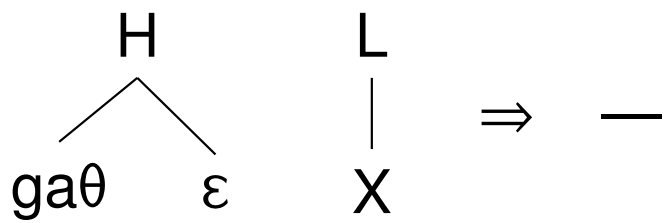
Morphosyntactic Locality in Anywa

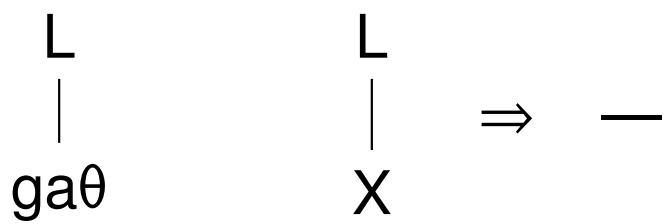
Word Level





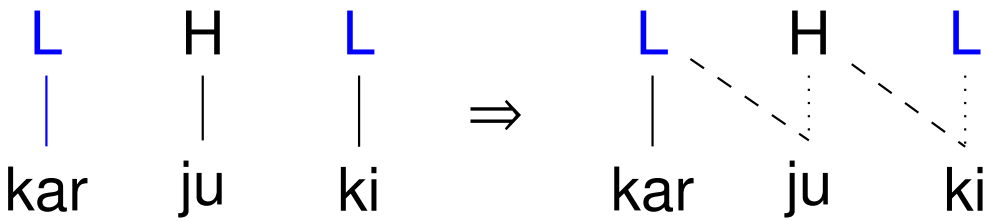
Phrase Level

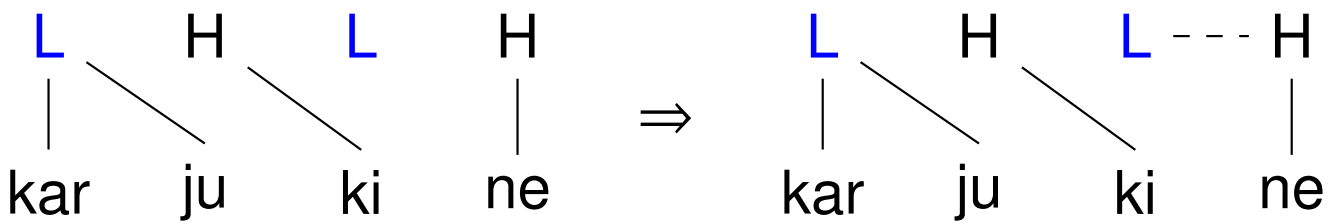




Morphosyntactic **Non-**Locality in Kikuyu

Word Level **Phrase Level**





Kuria Remote Future

(Marlo et al. 2015:254)

a.	n-to-re-[saamb-á]	'burn'
	n-to-re-[tɛrɛk-á]	'brew'
	n-to-re-[heetók-a]	'remember'
	n-to-re-[karaáŋg-a]	'fry'
	n-to-re-[taaŋgáás-a]	'announce'
	n-to-re-[teremék-a]	'be calm'
	n-to-re-[turuúŋán-a]	'welcome'
	n-to-re-[koondókór-a]	'uncover'
	n-to-re-[kiriɣíít-a]	'scrub'
	n-to-re-[hootóótér-a]	'reassure'
b.	n-to-re-[rom-ă]	'bite'
	n-to-re-[βun-ă]	'break'
c.	n-to-re-[ry-a]^{H}	'eat'

H on 3rd μ

Kuria Remote Future (Marlo et al. 2015:254)

H on 3rd μ of [[Stem]] + Object-NP:

μ3 melody: Remote Future 'we will…' (foc-1pl-tns-[root-fv])

n-to-re-[rom-a] ɛ́ɣɛ́tɔ́ɔ́ke	'bite a banana'
n-to-re-[ry-a] eɣɛ́tɔ́ɔ́ke	'eat a banana'

Sande and Jenks (2018) on Kuria

- Major problem for standard **Stratal Morphophonology**: Phrasal access to Stem-level morphology

- Central Argument for non-lexicalist syntactic phrases as phonological locality domains (**'Cophonologies by Phase'**)

RR-Analysis of Kuria Phrase Straddling

Stem Level:

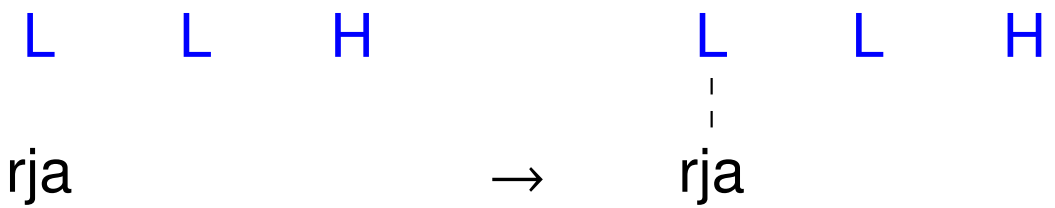
- 3rd-μ follows from stem-prefixation of a **L L H** melody
- If length(stem) $\geq 3\mu \Rightarrow$ Full association
  If length(stem) $< 3\mu \Rightarrow$ Partial Association
- Rightmost floating tones remain floating

Phrase Level:

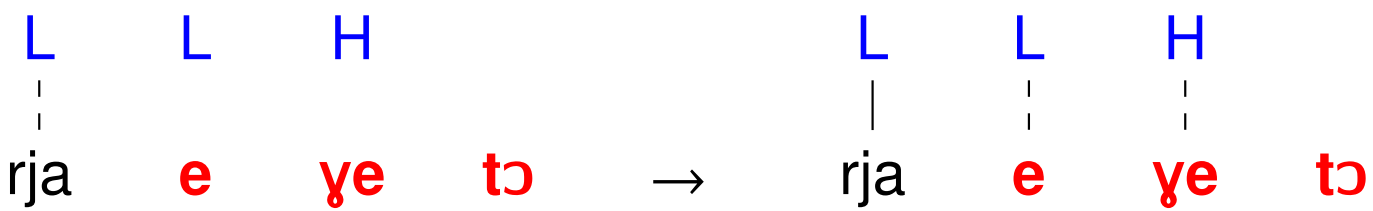
- Surviving floating tones associate to object NP

RR-Analysis of Kuria Phrase Straddling

Stem Level:



Phrase Level:



Stem Level

(Marlo et al. 2015:254)

Input: d.	ⓣ]	CONT]	$\overset{*}{\underset{L}{\underline{\mu}}}_{L}$	τ ↓ μ
☞ a. L L H rja				**
b. L L H rja	*!*			**
c. L L H rja			*!	
d. L L H rja				*!**

Phrase Level

(Marlo et al. 2015:259)

Input: b.	ⓣ]	CONT]	$^{*}_{L}\underline{\mu}_{L}$	τ ↓ μ
☞ a. L L H | ¦ ¦ rja **e** **ɣe** **tɔ**				
b. L L H ¦ ¦ rja **e** **ɣe** **tɔ**				*!*

Stem Level

(Marlo et al. 2015:254)

Input: d.	ⓣ]	CONT]	$^{*}_{L}\underline{\mu}_{L}$	τ ↓ μ
☞ a. L L H ro ma				
b. L L H ro ma				*!**

Phonological Non-Locality in Chimwiini (Kisseberth 2017)

Default: Phrase-Penultimate H

(1) **Halíima)$_{\varphi}$ Ø-m-pashile mw-áana)$_{\varphi}$ dáwa)$_{\varphi}$**
'Haliima rubbed medicine on the child'
(cf. isolation forms: **Halíima**, personal name; **Ø-m-pashíle** '(s)he rubbed him/her', **mw-áana** 'child', **dáwa** 'medicine')

Exceptional Phrase-final H

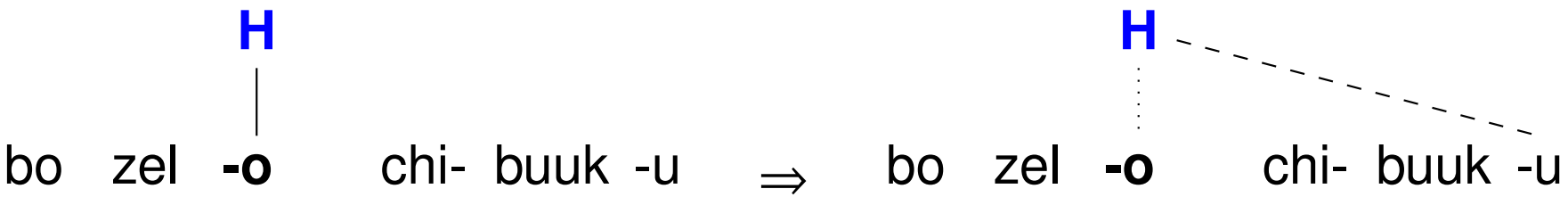
(3) a. **mw-alimu Ø-bozelo chi-buukú)$_{\varphi}$ ni Huséeni)$_{\varphi}$**
'the teacher who stole the book is Huseeni'
(cf. **mw-aalímu** 'teacher', **Ø-boozeló** 'who stole', **chi-búuku** 'book', **Huséeni** 'personal name')

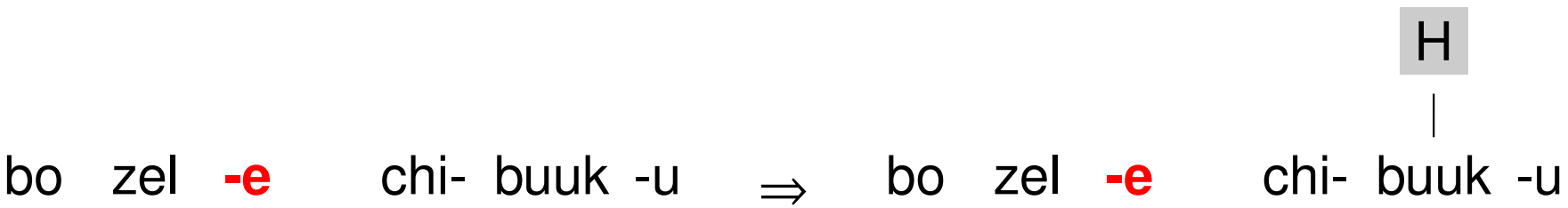
b. **mw-aalímu)$_{\varphi}$ Ø-bozele chi-búuku)$_{\varphi}$** 'the teacher stole the book'
(cf. **Ø-boozéle** '(s)he stole')

Phonological **Non-**Locality in Chimwiini (Kisseberth 2017)

- If a phonological phrase contains a **final accent trigger:** H on the last syllable of the last word
- **Otherwise:** H on the penultimate syllable of the last word

(Apparent) Phonological **Non-**Locality in Chimwiini





Dilemma for Cophonologies and Indexed Constraints

- Phrases are too big to serve as locality domains
- Introducing bigger locality domains will incorrectly extend to tones and segmental features across the board
- RR approach links non-locality to Chimwiini constellation: Suprasegmentals + spare specification

Extending the explanatory Coverage

Extending the explanatory Coverage

Interaction of Rich Representations with:

- **Stratal organization**
- **Formalization of input-output mapping**
- Fine-grained featural and prosodic **representations**

Extending the explanatory Coverage

Further Advantage of RR:

Exceptional phonology opens up new insights on the nature of phonological representations and derivations

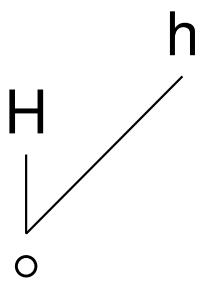
Specific Proposal here:

Feature-geometric decomposition of tone

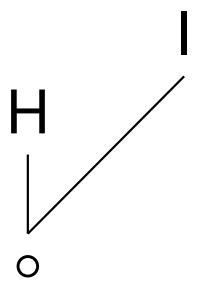
into melody and register features (Snider 1999)

Tone in Register Tier Theory (Snider 1999)

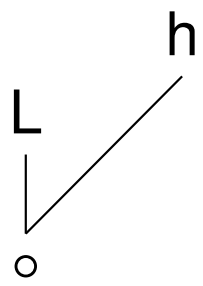
High



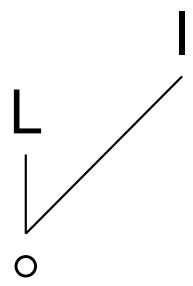
Mid$_1$

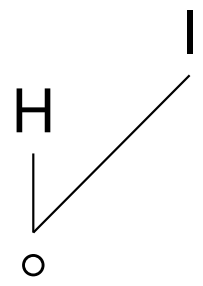


Mid$_2$



Low



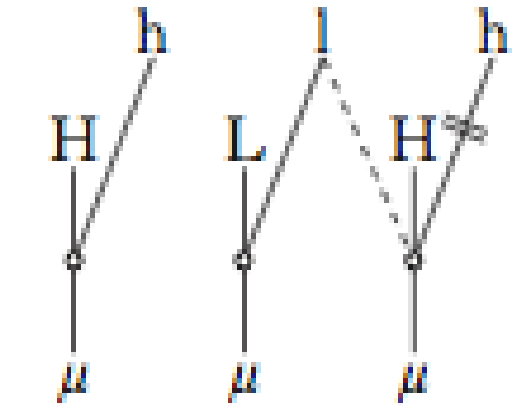


Downstepped High

Representation of Downstep in Snider (1999)

Downstepped High (automatic)

a. *structural representation*

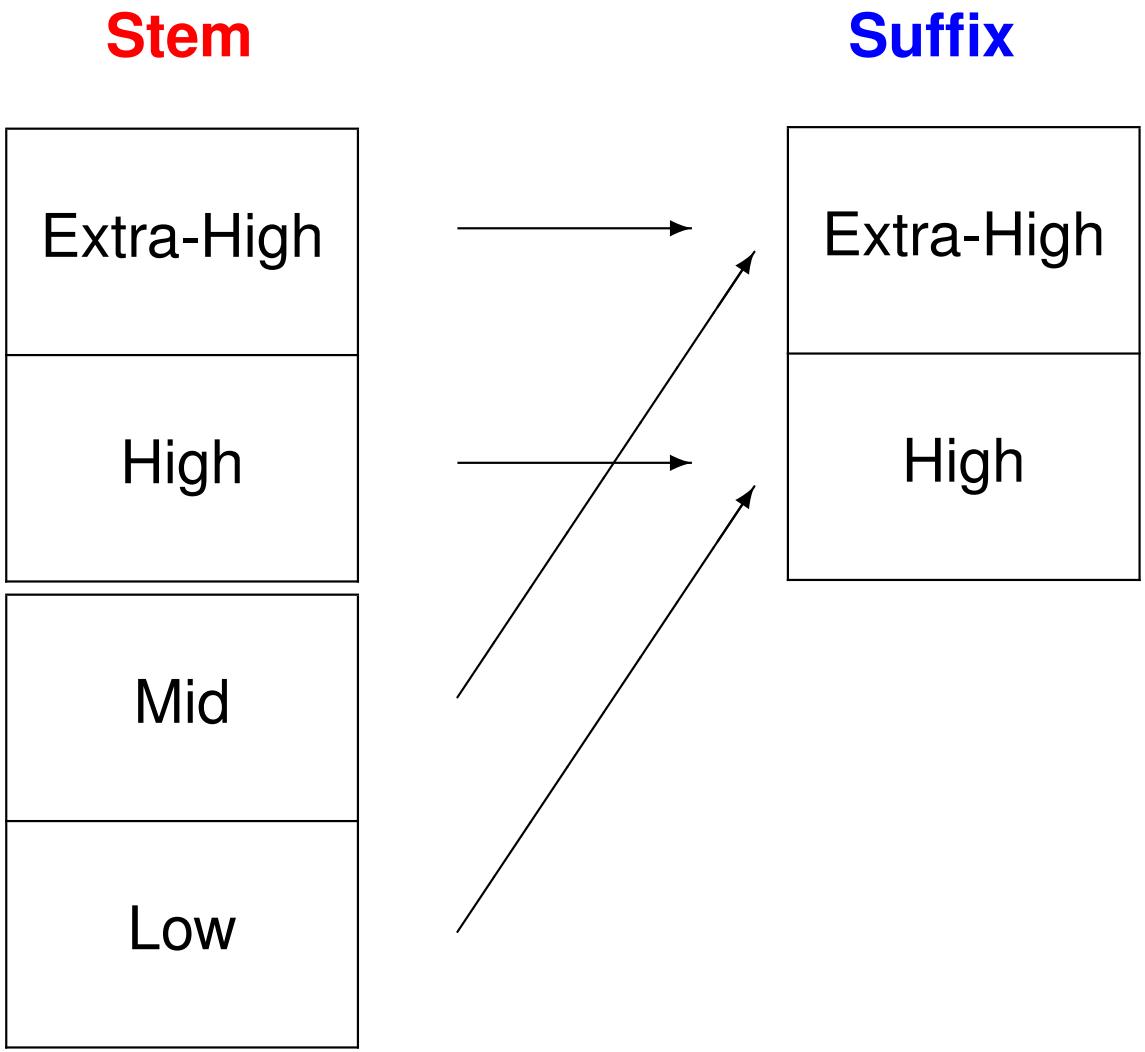


b. *phonetic representation*

Tenyidiye Variable Affixes (Meyase 2016:21)

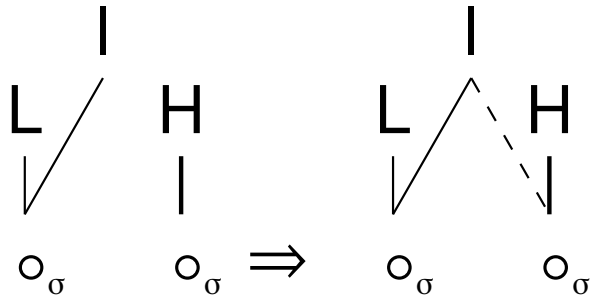
petā̋ + te	*= petā̋ tē̋*	*'to drive'* + past
rəlí + te	*= rəlí té*	*'to rest'* + past
rədī + te	*= rədī tē̋*	*'to change'* + past
pelè + te	*= pele té*	*'to tie'* + past

Tenyidiye Variable Affixes (Meyase 2016:21)

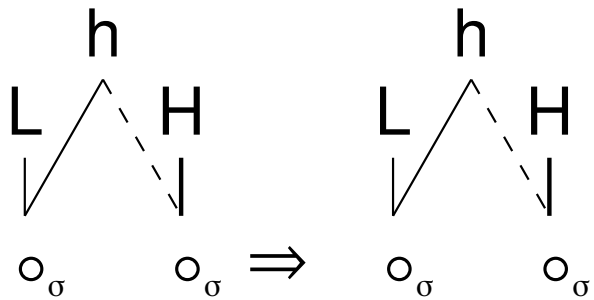


Tenyidiye Variable Affixes (Meyase 2016:21)

Low+Affix ⇒ Low+High



Mid+Affix ⇒ Low+Extra-High



2 Types of Root-final Floating Tones in Konni

	Singular Definite	**Plural**	
Low	jʊ̀lì**-ká**	jʊ̀lì**-sì**	‘whydah’ (bird)
High	kpíá**-ká**	kpíá**-sí**	‘chicken’
High+ Ⓛ	líá$^{\downarrow}$**-ká**	líá**-sì**	‘axe’
High+ Ⓘ	cíː$^{\downarrow}$**-ká**	cíː$^{\downarrow}$**-sí**	‘squirrel’

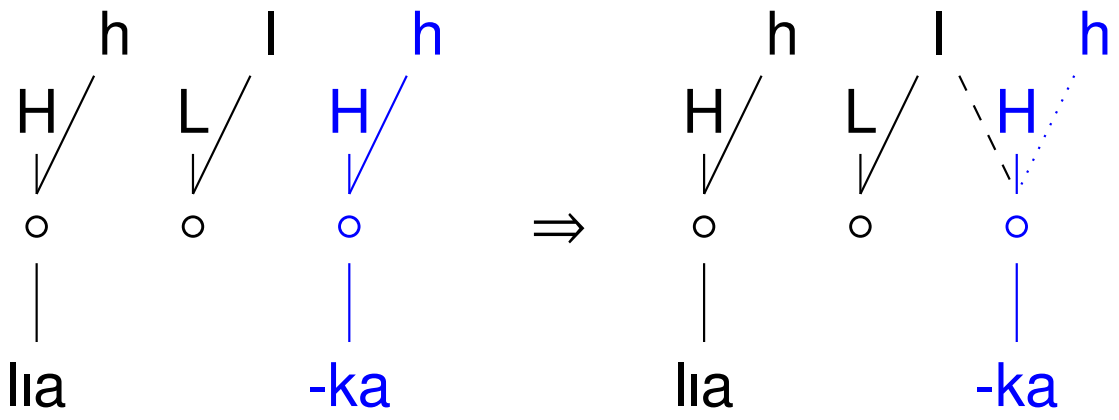
2 Types of Root-final Floating Tones in Konni (Cahill 1999:340-41)

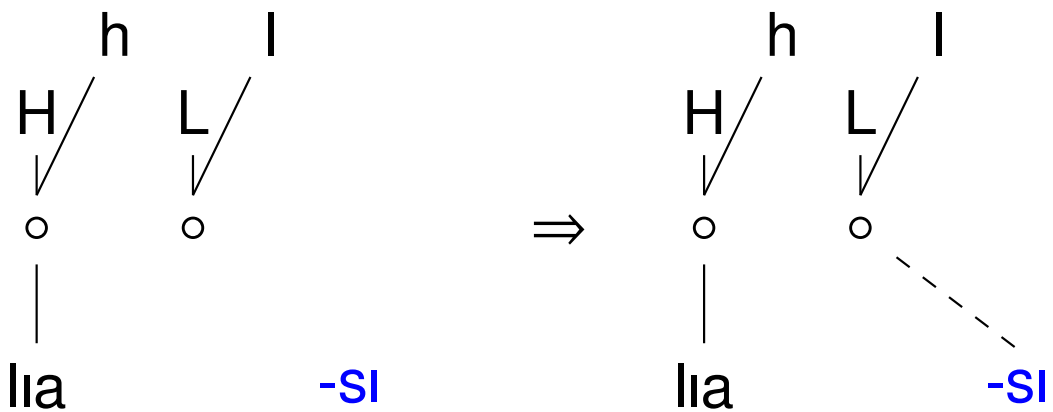
Analysis:

- **Full floating L-tone:**
  emerges as full L on free affix syllables
  only by its l-register if trapped between H-tones

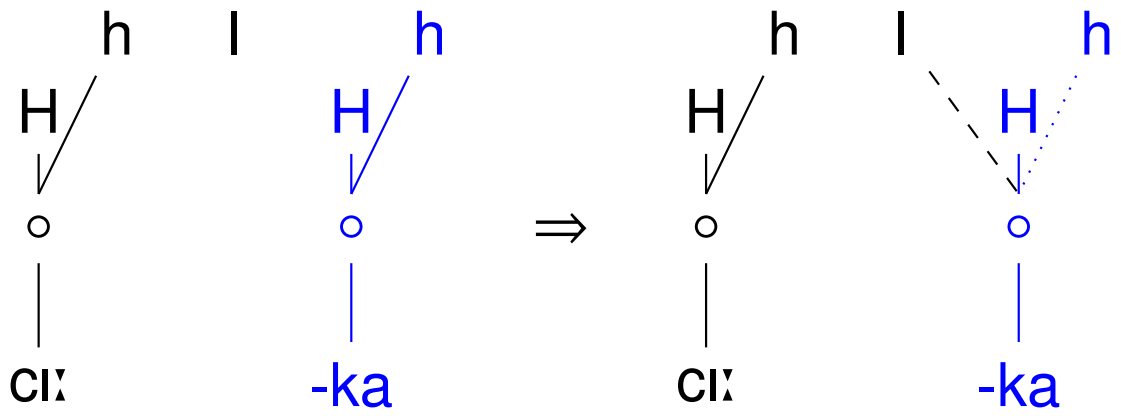
- **Floating l-register:**
  consistently realized as downstep
  (+ H-epenthesis on affix if necessary)

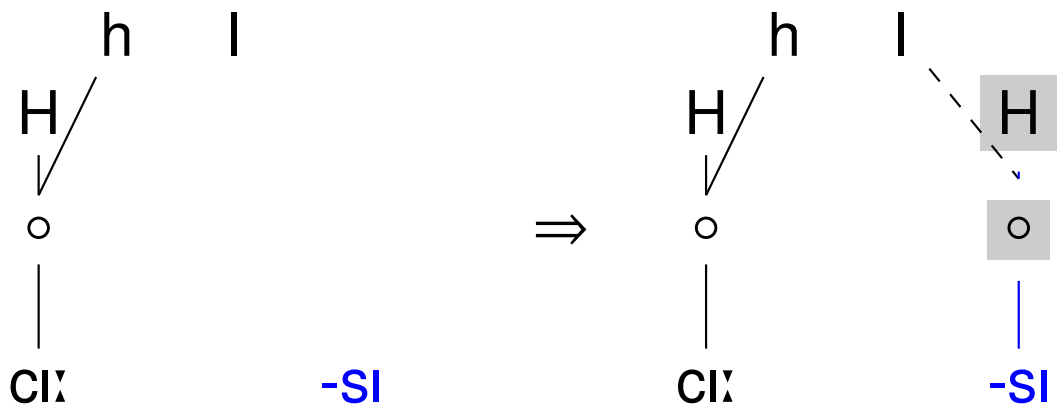
Konni Floating Ⓛ





Konni Floating ①





Kikuyu: A Solution for Clements' Dilemma

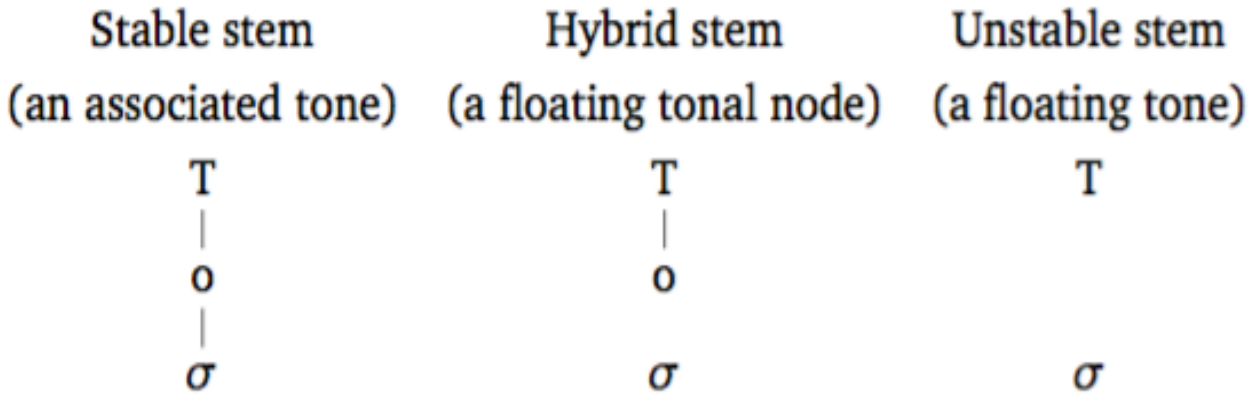
Clements (1984):

- Two types of floating L-tones
- both block spreading processes
  but only one triggers downstep

Solution (work in progress)

- Floating Tone_1 = Ⓛ
  (triggers downstep)
- Floating Tone_2 = Ⓛ
  (doesn't trigger downstep)

Nuer Noun Classes (Gjersøe 2019)



Gã Final Raising in Verb Roots (Paster 2003:18+19)

HL|| → HꜜH||

a. e-káne gbɛmɛ̃ĩ — ‘he counted people’
e-chála mãmã́ꜜĩ — ‘he mended clothing’
e-pı̃́ı̃ shɔ — ‘he suffered Wednesday’
e-bóte-ɔ — ‘he enters (habitual)’

---

b. e-káꜜné — ‘he counted’
e-cháꜜlá — ‘he mended’
e-pı̃́ꜜı̃ — ‘he suffered’
e-bóꜜté — ‘he entered’

Gã Final Raising in Verb Roots (Paster 2003:19)

$HL|| \rightarrow H^{\downarrow}H||$

a.	e-nã	'he saw'	b.	é-!nã̋	'that he see'
	e-kɔ	'he bit'		é-!kɔ́	'that he bite'
	e-jo	'he dug'		é-!jó	'that he dance'
	e-fũ	'he buried'		é-!fũ̋	'that he bury'

c.	é-nã wɔ	'that he see us'
	é-kɔ wɔ	'that he bite us'
	é-jo adoá	'that he dance the Adoa'
	é-fũ ako	'that he bury Ako'

Gã: No Final Raising in suffixed Verbs (Paster 2003:20)

a.	e-fó-ɔ	'he weeps (hab.)'	b.	e-fó-kɔ	'he hasn't wept'
	e-tɛ́lɛ́-ɔ	'he carries (hab.)'		e-tɛ́lɛ́-kɔ	'he hasn't carried'
	e-kpɛ́-ɔ	'he chews (hab.)'		e-kpɛ́-kɔ	'he hasn't chewed'
	e-chú-ɔ	'he sends (hab.)'		e-chú-kɔ	'he hasn't sent'

Gã: No Final Raising in Noun Roots (Paster 2003:20)

a.	mɔ̃́bɔ̃	'pity'	b.	shí!tɔ́	'pepper'
	fɔ́te	'termite'		yí!chú	'head'
	kpúlu	'cup'		gbé!kɛ́	'child'
	zɛ́ŋgle	'roof'		gó!wá	'guava'

Gã: Final Raising with Suffixed Nouns (Paster 2000:19)

HL|| → H↓H||

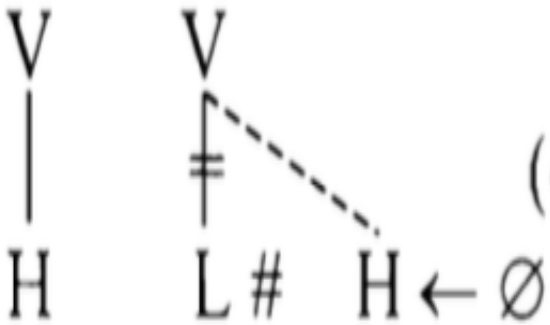
chwií	'heart'	chwí-!í[14]	'hearts'
na̲ne	'leg'	na̲ne-i	'legs'
gbɛ	'path'	gbɛ-i	'paths'
julɔ	'thief'	julɔ-i	'thieves'
kaklá	'knife'	kaklá-!í	'knives'
kpúlu	'cup'	kpúlu-i	'cups'
afoflo	'flower'	afoflo-i	'flowers'

Distribution of Final Raising

	Verbs	**Nouns**
Bare Roots	+	-
Suffixed Forms	-	+

Gã Final Raising

(Paster 2003:20)



(does not apply to verbal suffixes or noun stems)

Gã Final Raising: Dilemma

Final Raising is sensitive to **word**-internal structure

but

triggered by **phrase**-final position

Gã Final Raising: Analysis

Word Level

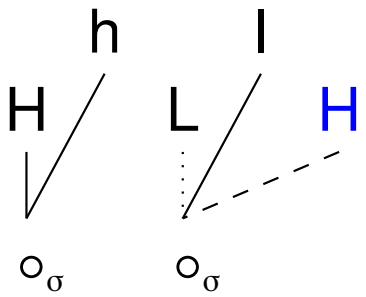
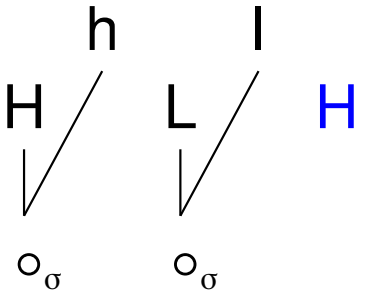
- Categorizing little v is realized by a floating melody tone H
  The nominal plural suffix -i carries a floating melody tone H
- Floating H is neither associated nor deleted

Phrase Level

- Floating H is retained utterance-finally (by positional faithfulness)
- but deleted otherwise (utterance-internally)

Utterance-final HL Verb

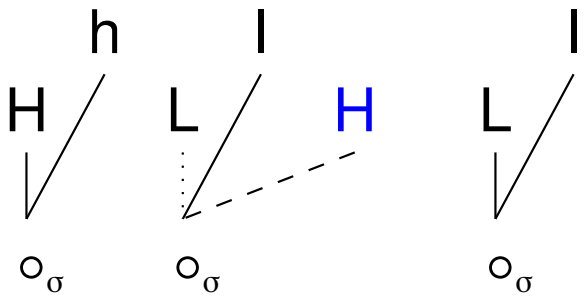
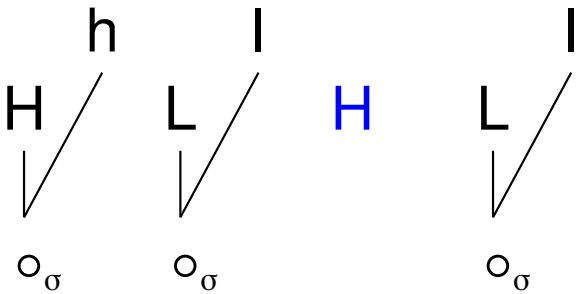
(Paster 2003:20)

Input: = b.	*L$^{\downarrow}$H	τ‖ → ○	MAX |	FAITH
☞ a. 			*	
b. 		*!		

(or H-tone noun + plural suffix)

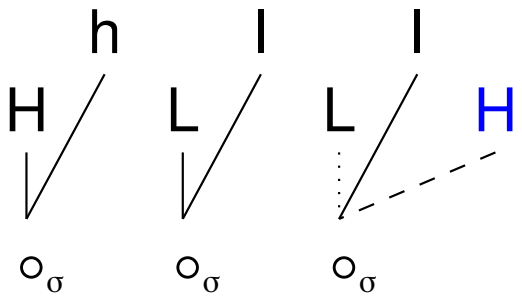
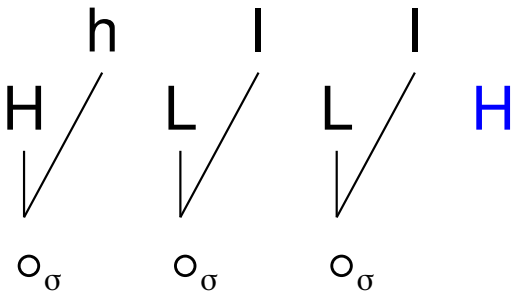
Non-final HL Verb

(Paster 2003:20)

Input: = b.	*L$^{\downarrow}$H	τ‖ → ○	MAX |	FAITH
a. 			*!	
☞ b. 				

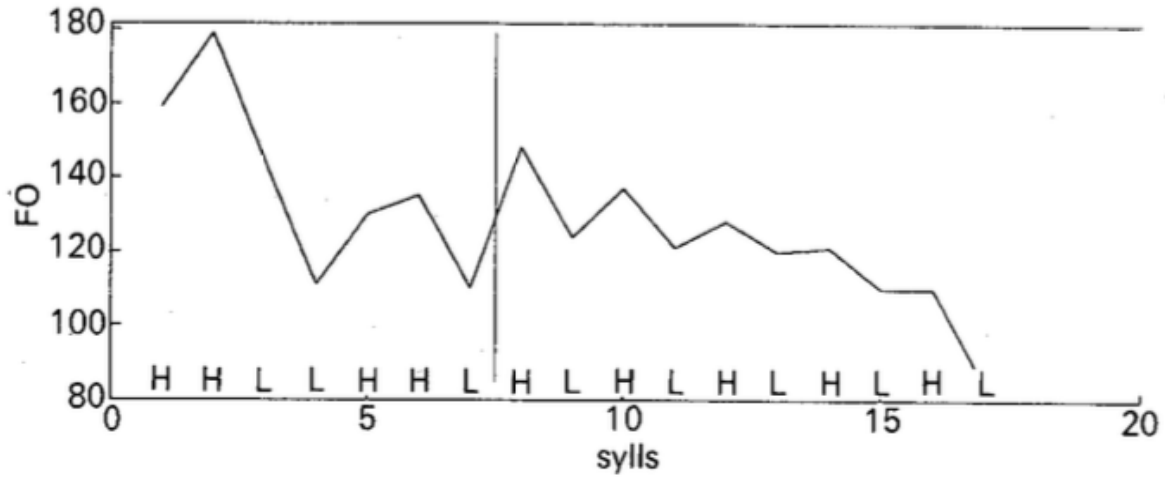
Final HLL Verb

(Paster 2003:20)

Input: = b.	*L$^{\downarrow}$H	τ‖ → ○	MAX |	FAITH
a. 	*!		*	*
☞ b. 		*		

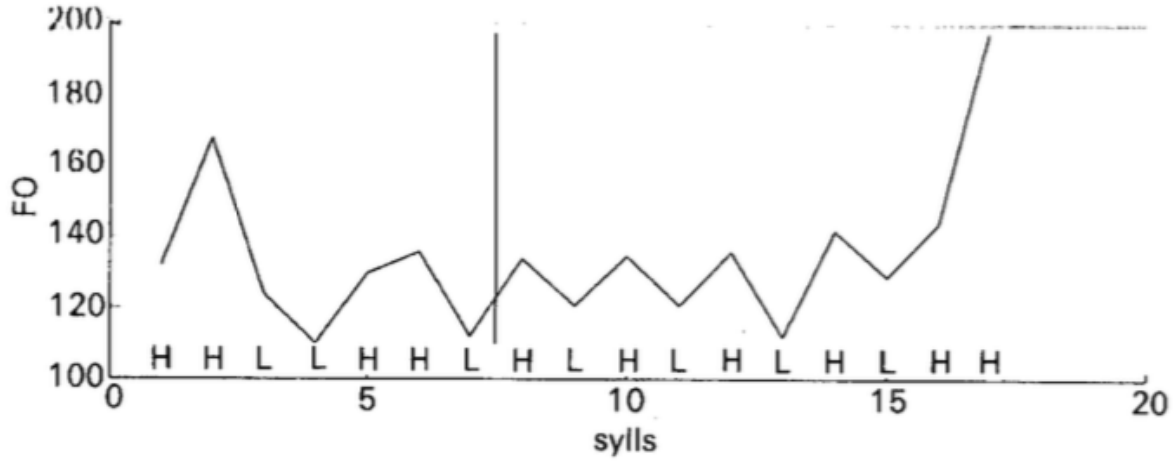
Hausa Downstep Deletion (Inkelas and Leben 1990)

Declarative



Yaa aikàa wà Maanii / làabaarìn wannàn yaaròn alàrammà

Polar Question



Yaa aikàa wà Maanii / làabaarìn wannàn yaaròn alàramma?

Hausa Downstep Deletion (Inkelas and Leben 1990)

- **Declaratives:**

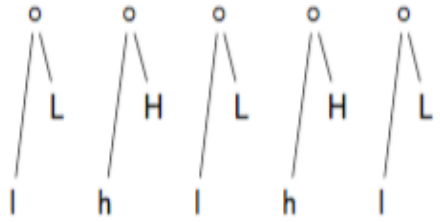
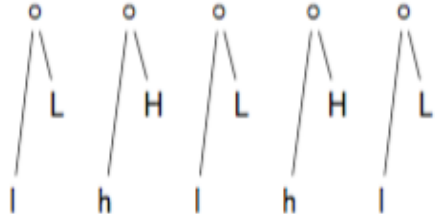
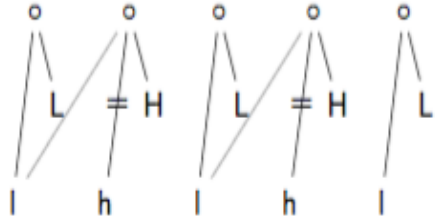
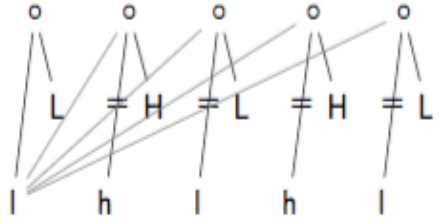
  Downstep at every L+H Transition

- **Polar Questions:**

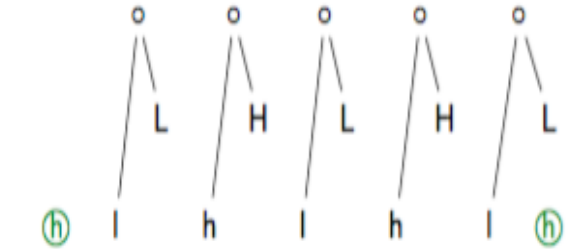
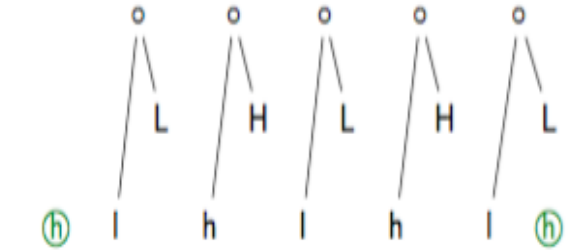
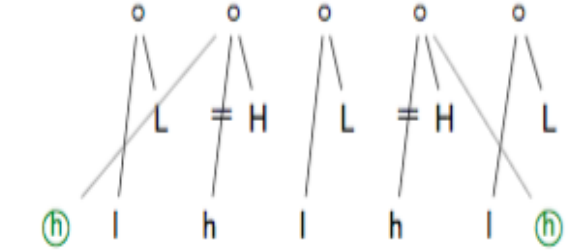
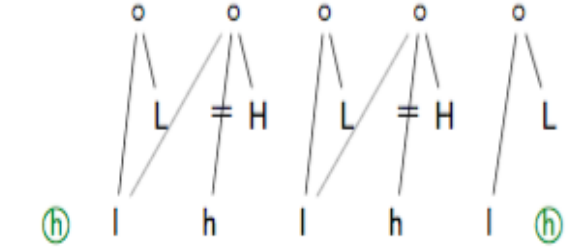
  Suspension of downstep across the board

Tebay (2019): Declarative Downstep by I-Spreading

Evaluation of [. . . ròn ↓álà↓rámmà] – downstep

		As(I)	NLC(r)	SH(I)	As(h)	*H,I
Input:						
a.				***!*		
☞ b.				**	**	**
c.		*!*			**	**

Tebay (2019): Downstep Suspension by h-Circumfixation

Input: 	As(l)	Cont(r)	NLC(r)	Sh(l)	As(h)	*H'l
a. 		****!*		****	**	
☞b. 		***	**	****	**	
c. 		****!*		**	****	**

Summary

Rich autosegmental representations

- **capture** a substantial amount of exceptional/lexically specific tonal processes
- **avoid** problems with Cophonologies and Indexed Constraints
- are still only **partially** understood in their theoretical and empirical consequences

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Overview