Tone features and underspecification

Morphological H-tones in Macuiltianguis Zapotec

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Main Claim

- the assumption of **(sub-)tonal features** predicts that the same surface tones may have different (underspecified) phonological representations
- the **asymmetric behaviour of H-tones** in Macuiltianguis Zapotec follows under such an account:
  - more complex [+Upper,+raised] can only associate locally and to a single TBU
  - underspecified [+raised] can associate non-locally and changes the tone of all TBU's associated to one vowel

Structure of the talk

Data: Tones in Macuiltianguis Zapotec

Macuiltianguis Zapotec (=MacZ)

- an Otomanguean language spoken in Oaxaca, Mexico
- data based on Broadwell and Zhang (1999); Broadwell (2000); Foreman (2006), and especially Broadwell et al. (2011)

(1) *State of Oaxaca (Wikimedia, 07/01/16)*

Tone in Macuiltianguis Zapotec (=MacZ)

- three level tones high (=H, á), mid (=M, a), and low (=L, à), and a downstepped H (=ꜜá)
- tone sequences HL and LH on long vowels; **TBU=μ**

(2) *Tone in MacZ (Foreman, 2006, 40)*

íjːá	'rock'	ijːa	'rain'
bélːá	'fish'	bèlːà	'snake'
beːlia	'cave'	bêːlia	'star'
dăː	'bean'	dâː	'lard'

Spreading of stem-final H and M

- root-final H and M spread one TBU to the right (3-a+b)
- spreading is blocked by /ʔ/ (3-c)

(3) *Spreading of root-final H/M (Broadwell et al., 2011, 3)*

	UNDERLYING	SURFACE
a.	be-làːlja-nà-nà	be-làːlja-n**a**-nà
	COM-spill-3SGS-3SGO	'S/he spilled it'
b.	be-làpːá-nà-nà	be-làpːá-n**á**-nà
	COM-clean.up-3SGS-3SGO	'S/he cleaned it up'
c.	be-sìːgáʔ-nà-nà	be-sìːgáʔ-nà-nà
	COM- push-3SGS-3SGO	'S/he pushed it'

Spreading of H from the potential prefix

- the H-toned prefix /gú–/ POTENTIAL causes an **additional H** on the following TBU

(4) *Potential (Broadwell et al., 2011, 4+8)*

	UNDERLYING	SURFACE
a.	gú-di-bìθːà-nà-nà	gú-dí-bìθːà-nà-nà
	POT-CAUS-wet-3SGS-3SGO	'S/he will wet it'
b.	gú-sìːgáʔ-nà-nà	gú-sîːgáʔ-nà-nà
	POT- push-3SGS-3SGO	'S/he will push it'
c.	gú-tùːbí-já-nà	gú-tûːbí-já-nà
	POT-roll-1SGS-3SGO	'I will roll it'
d.	gú-làpːá-nà-nà	gú-lápːˀá-ná-nà
	POT-clean.up-3SGS-3SGO	'S/he will clean it up'

Different tone spreading operations?

- no spread from M-toned prefixes (e.g. Compl /be–/ or Hab /ru–/)

	Underlying	Surface
a.	be-làːlja-nà-nà	be-làːlja-n**a**-nà
	Com-spill-3SgS-3SgO	'S/he spilled it'
b.	be-làpːá-nà-nà	be-làpːá-n**á**-nà
	Com-clean.up-3SgS-3SgO	'S/he cleaned it up'

→ since /gu–/ is the only H-toned prefix in MacZ, the additional H in this context is taken to be **morpheme-specific** (=bound to the presence of this affix)

H-tone in the 1.Sg formation

- an additional H is realized on the verb base:
  - on a **vowel followed by** /ʔ/,

be-tsìːg**a**ʔ-jà-nà	be-tsìːg**á**ʔ-jà-nà
Com-get.dirty-1SgS-3SgO	'I dirtied it'

H-tone in the 1.Sg formation

- an additional H is realized on the verb base:
  - on a **vowel followed by** /ʔ/,

    be-tsìːga**a**ʔ-jà-nà be-tsìːg**á**ʔ-jà-nà

    Com-get.dirty-1SgS-3SgO 'I dirtied it'
  - on the **leftmost L-toned** TBU if there is no such vowel,

    be-b**ì**θːà-jà-nà be-b**í**θːà-jà-nà

    Com-wet-1SgS-3SgO 'I wetted it'

H-tone in the 1.Sg formation

- an additional H is realized on the verb base:
  - on a **vowel followed by** /ʔ/,
    be-tsìːga**a**ʔ-jà-nà be-tsìːgá**a**ʔ-jà-nà
    Com-get.dirty-1SgS-3SgO 'I dirtied it'
  - on the **leftmost L-toned** TBU if there is no such vowel,
    be-bìθːà-jà-nà be-bíθːà-jà-nà
    Com-wet-1SgS-3SgO 'I wetted it'
  - and on the **rightmost M-toned** TBU if there is no L-toned TBU.
    be-ʃatt**a**-jà-nà be-ʃattá-já-nà
    Com-iron-1SgS-3SgO 'I ironed it'

(Different generalization based on a preference for the tone to reach the stressed position in Foreman (2006) or Broadwell and Zhang (1999))

H-tone in the 1.Sg formation

(5) *Abstract Summary*

a. *To glottalized V*

LL.MʔLL.**H**ʔ

LL.HʔLL.**H**ʔ

Mʔ.H**H**ʔ.H

b. *Else to leftmost L*

L.M**H**.M

M.LM.**H**

L.L**H**.L

LL.M**HH**.M

LL.H**HH**.!H

c. *Else to rightmost M*

M.MM.**H**

Two different morphological H-tones?

Root	1.Sg	Pot (after /gu–/)
tù꞉bí	tú꞉!bí	tû꞉bí
sì꞉gáʔ	sì꞉gáʔ	sî꞉gáʔ

Two different morphological H-tones?

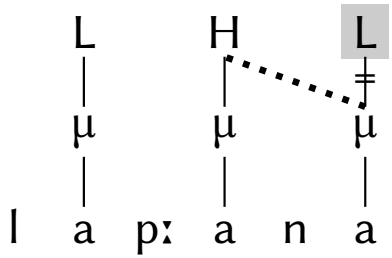
Root	1.Sg	Pot (after /gu–/)
tù:bí	tú:ˀbí	tû:bí
sì:gáʔ	sì:gáʔ	sî:gáʔ

The asymmetry

	1Sg	Pot
Locality	on 1. or 2. syllable	always on TBU after /gu-/
Effect for V̀:	Overwriting: V́:	Contour tone: V̂:

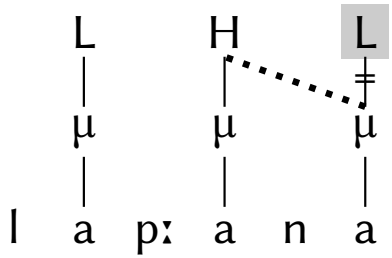
The challenge for an account where tones are primitives

(6) *Phonological H-spread from stem-final TBU*



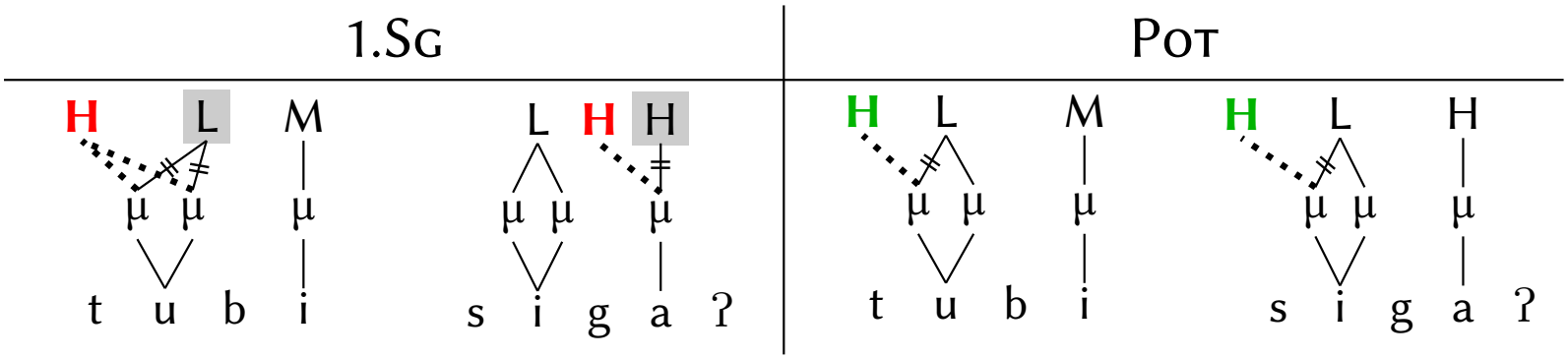
The challenge for an account where tones are primitives

(6) *Phonological H-spread from stem-final TBU*



- Pot and 1Sg are instances of **morphological H-tones**: (floating) tones present in certain morpho-syntactic configurations

(7) *Two types of morphological tones*



An account for MacZ in terms of (sub)tonal features

Assumption: tonal features (Yip, 1989; Snider, 1990; Hyman, 1992)

- register [±Upper] divides pitch range of voice in half; [±raised] subdivides register (Yip, 1980; Pulleyblank, 1986)
- three tones specified with two tone features **[±Upper] and [±raised]**
- **underspecified** tones (8-b) interpreted with a default [–raised] value

(8) *Tone in MacZ*

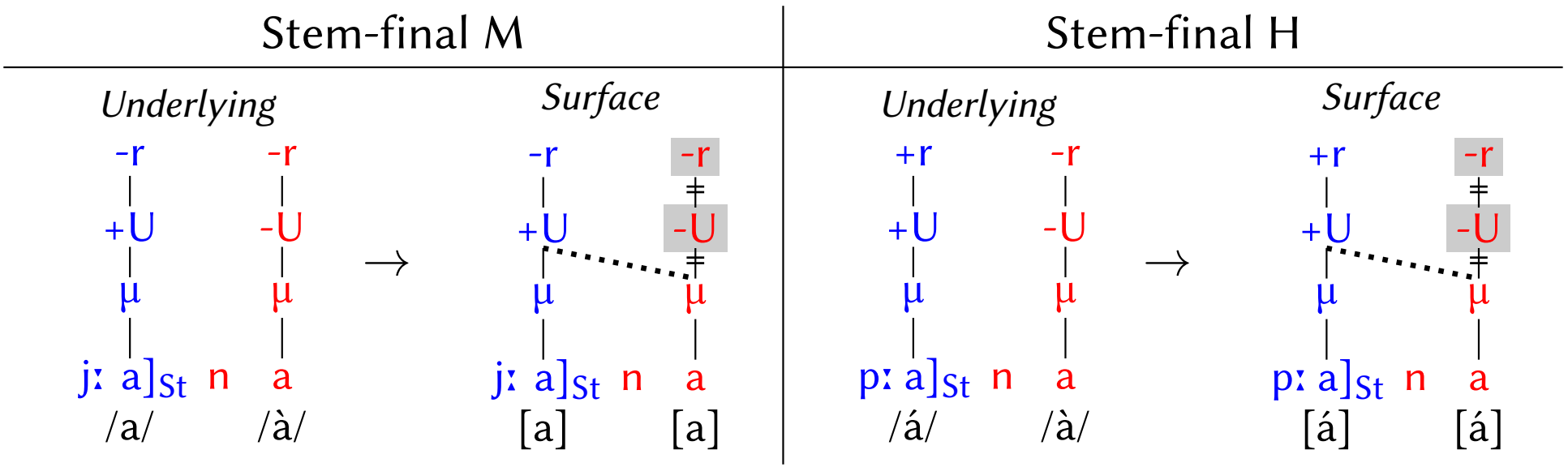
	L	**M**	**H**
a.	-r | -U	-r | +U	+r | +U
b.	-U	+U	

Sub-tonal representation: Prediction I

I. H and M are a natural class

Predicts that H and M spread from stem-final TBU's.

(9)

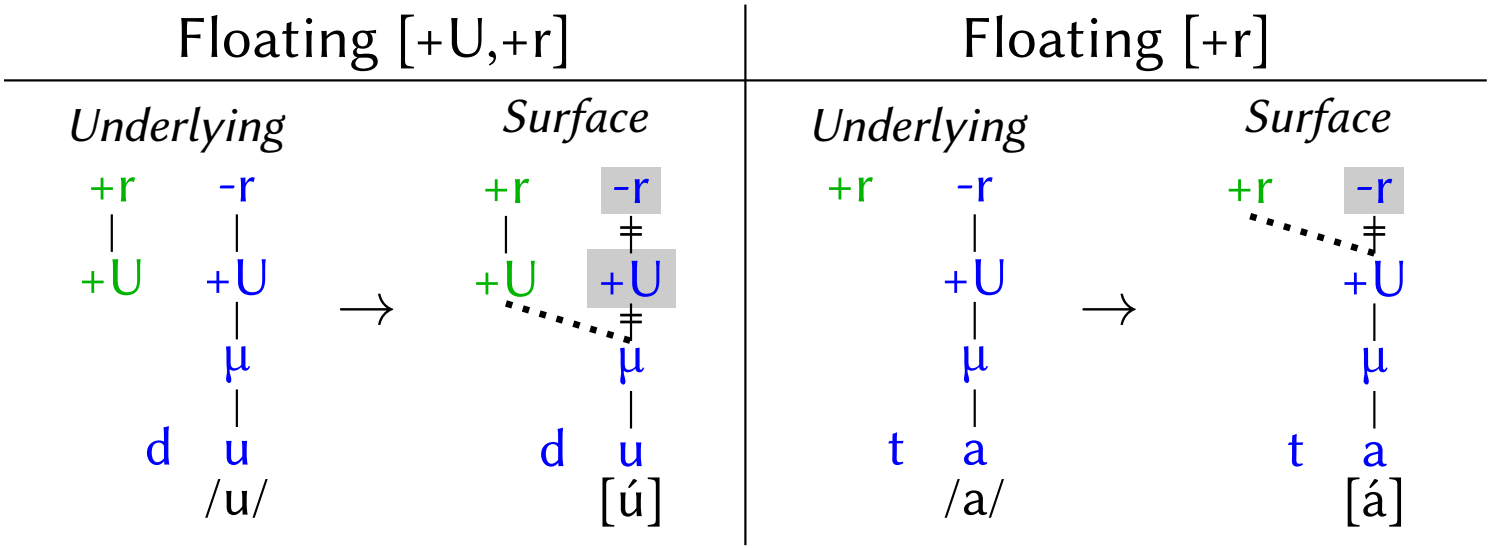


Sub-tonal representation: Prediction II

II. Different H-tones

Addition of floating [+r] and [+U,+r] has in principle the **same surface effect**: realization of a H-tone instead of the underlying tone (=overwriting).

(10)



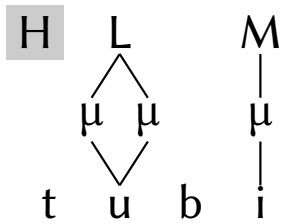
Theoretical background: Coloured Containment-based OT

(van Oostendorp, 2006; Trommer, 2011; Zimmermann, 2014; Trommer and Zimmermann, 2014)

(11) *Containment (Prince and Smolensky, 1993/2004)*
Every element of the phonological input representation is contained in the output.

1. **No deletion**: unrealized elements are not integrated under the highest prosodic node (=Stray Erasure, McCarthy, 1979; Steriade, 1982; Itô, 1988)
   - ➙ for tone: unassociated high has no effect on adjacent tones (in the languages under discussion); unassociated low may cause downstep

(12) *Marking conventions: phonetically unrealized elements*

Phonological structure	Phonetic interpretation
	[tù:bi]

Theoretical background: Coloured Containment-based OT

2. **No deletion of association lines**: they can only be marked as 'phonetically invisible' (=not interpreted)

(13) *Marking conventions: different types of association lines*

Morphological association lines		Epenthetic association lines	
phonetically visible:	phonetically invisible:	phonetically visible:	phonetically invisible:
a.	b.	c.	d.

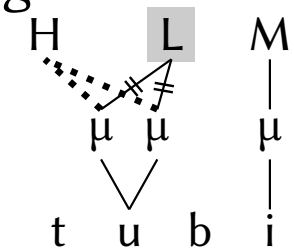
Theoretical background: Coloured Containment-based OT

2. **No deletion of association lines**: they can only be marked as 'phonetically invisible' (=not interpreted)

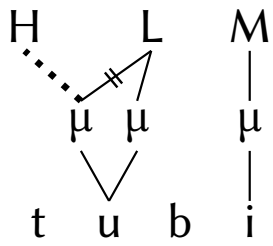
(13) *Marking conventions: different types of association lines*

Morphological association lines		Epenthetic association lines	
phonetically visible:	phonetically invisible:	phonetically visible:	phonetically invisible:
a. |	b. ≠	c. ⋮	d. ≠

(14) *Marking conventions: phonetically unrealized elements II*

a. 

[tú:bi]

b. 

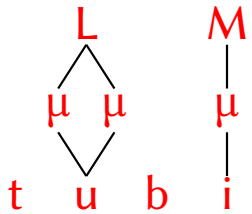
[tû:bi]

➙ Constraints: sensitive to only the phonetically visible or all structure
(='constraint cloning' Trommer, 2011; Trommer and Zimmermann, 2014)

Theoretical background: Coloured Containment-based OT

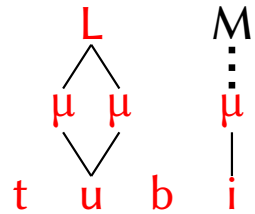
3. All morphemes have a **'colour'** (=affiliation); epenthetic elements are colourless

(15) *Marking conventions: morphological colours*

a. 

[tù:bi]

➙ two underlying tones

b. 

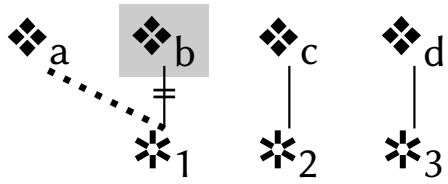
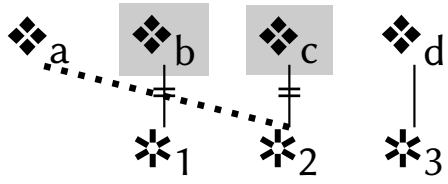
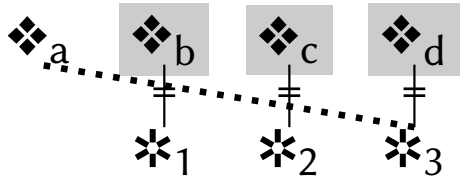
[tù:bi]

➙ insertion of an epenthetic M

Locality of association under containment

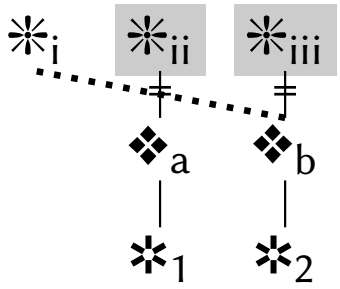
- phonetically visible association lines can not cross (Goldsmith, 1976)
- a **phonetically invisible association line might be 'crossed'**, under violation of *Cross
- 'crossed' elements remain invisible under violation of Max and Have

(16)

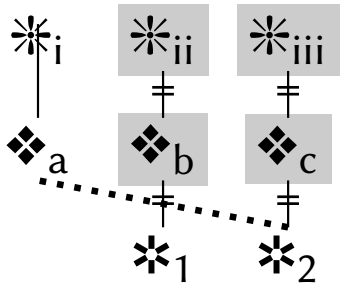
	*Cross	Have-❖	Max-❖	
☞ a. 			*	*'local'*
b. 	*!	*	**	*'non-local'*
c. 	*!*	**	***	

Non-local association: general predictions

(17) *Non-local overwriting: 'Simple' structure*

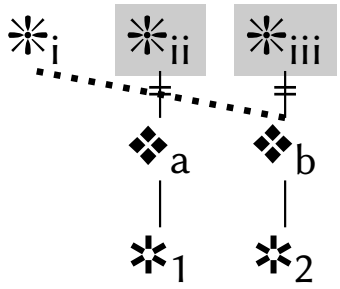


(18) *Non-local overwriting: 'Complex' structure*

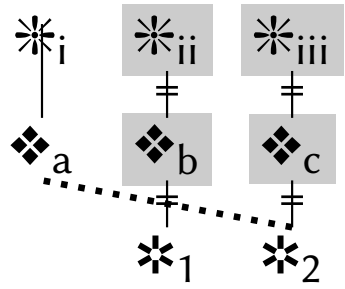


Non-local association: general predictions

(17) *Non-local overwriting: 'Simple' structure*



(18) *Non-local overwriting: 'Complex' structure*

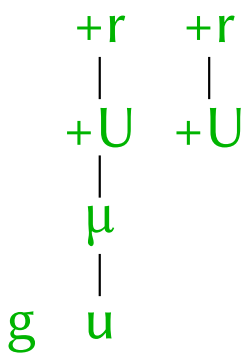


- non-local association of a more complex superset-structure implies non-realization of a **superset** of structure
  ➙ 'smaller' things can more easily reach a non-local position
- the 'crossed' elements are **neutralized to default** structure or take the value of the 'crossing' element (=spreading)

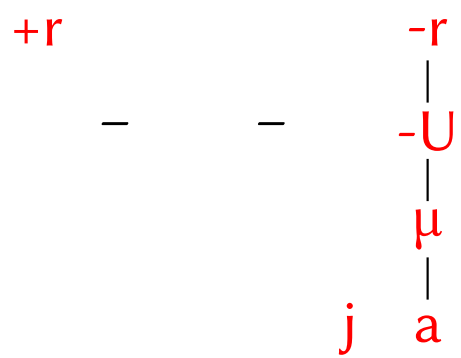
Assumption: Representation of floating High tones

(19) *Two different morphological (floating) H-tones*

Pot ↔



1.Sg ↔



➙ a circumfix; the suffixed segmental portion is not relevant in the following

Overwriting in containment: Constraints

(20)

a. R-TO-U
Assign a violation mark for every [±r] that is not associated to a [±U].

b. $\underline{*^{R}U^{R}}$
Assign a violation mark for every [±U] that is phonetically visibly associated to more than one feature [±r].

c. MAX[R]
Assign a violation mark for every phonetically invisible [±r].

Overwriting: 1Sg-H

(21)

		r-to-U	*^{R}U^{R}	Max[r]
+	+r -r +r; +U +U; μ μ; ʃ u ʔ n i; /M/ /H/			
a.	+r -r +r; +U +U; μ μ; ʃ u ʔ n i; [M] [H]	*!		*
b.	+r -r +r; +U +U; μ μ; ʃ u ʔ n i; [HM] [H]		*!	
☞ c.	+r -r +r; +U +U; μ μ; ʃ u ʔ n i; [H] [H]			*

Overwriting: Pot-H

(22)

		U-to-μ	*U μ	Max[U]
	+r +r -r +r | | | | +U +U -U +U | | | μ μ μ g u + l a p: a ʔ /H/ /L/ /H/			
a.	+r +r -r +r | | | | +U +U -U +U | | | μ μ μ g u l a p: a ʔ [H] [L] [H]	*!		*
b.	+r +r -r +r | | | | +U +U -U +U | | | μ μ μ g u l a p: a ʔ [H] [HL] [H]		*!	
☞ c.	+r +r -r +r | | ≠ | +U +U -U +U | | ≠ | μ μ μ g u l a p: a ʔ [H] [H] [!H]			*

Asymmetry 1: Locality

- 1Sg [+r] realized non-locally (on first or second syllable of stem)
- Pot [+U,+r] realized only locally (on the first TBU following /gu–/)

Preferred realization site for a high tone

- the preference for being realized on a vowel followed by /ʔ/is taken to be standard case of **consonant-tone interaction**
  (Lee, 2008; Tang, 2008, cf. also the blocking of H/M-spread across /ʔ/)

(23) *−CG/H

Assign a violation mark for every phonetically visible vowel that is associated to [+r] but not followed by a [+cg]-sound.

(the additional preferences triggering non-local H-realization (cf. slide 10) follow from faithfulness preserving M-tones and a preference for M-tones on the initial TBU)

Additional constraints

(24) a. HAVE[U]
Assign a violation mark for every phonetically visible μ that is not associated to a [±U] in a phonetically visible way.

b. HAVE[R]
Assign a violation mark for every phonetically visible [±U] that is not associated to a [±r] in a phonetically visible way.

c. *CROSS
Assign a violation mark for every instance of crossing association lines.
(=for every pair of features A_1 followed by A_2 on tier n if A_1 is associated to B_2 and A_2 to B_1 if B_1 precedes B_2 on tier n-1)

Non-local realization possible for the 1.Sg-H

(25)

	HAVE[U]	r-TO-U	U-TO-μ	*–CG/H	HAVE[r]	*CROSS
+r -r -r | | | + -U +U \ / | μ μ μ ts iː g a ʔ /LL/ /M/						
a. +r -r -r | | | -U +U \ / | μ μ μ ts iː g a ʔ [<MM>] [H]				*!		
☞ b. +r -r -r | | | -U +U \ / | μ μ μ ts iː g a ʔ [LL] [H]					*	*

Non-local realization impossible for the Pot-H

(26)

	HAVE[U]	r-TO-U	U-TO-μ	*–CG/H	HAVE[r]	*CROSS
+r +r -r +r / +U +U -U +U / μ μ μ μ / g u + l a p: a ʔ / /H/ /L/ /H/						
☞ a. +r +r -r +r / +U +U -U +U / μ μ μ μ / g u l a p: a ʔ / [H] [H] [!H]				*		
b. +r +r -r +r / +U +U -U +U / μ μ μ μ / g u l a p: a ʔ / [H] [ø] [H]	*!					*

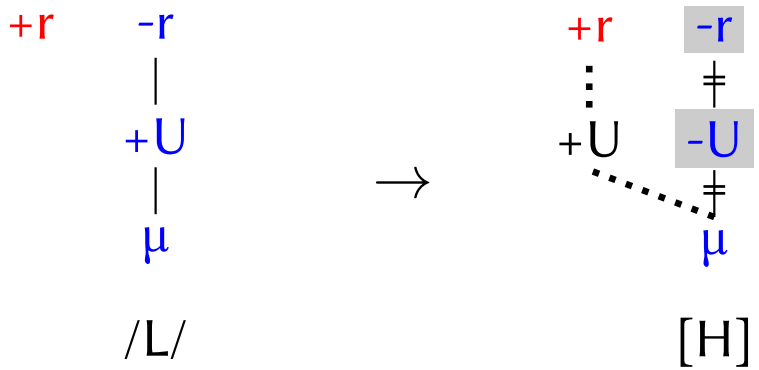
Asymmetry 2: Effect for V:

- 1Sg [+r] overwrites V̀: to V́:
- Pot [+U,+r] creates rising contour V̂:

Avant propos: [+r] 'overwrites' an L-tone

- since there are no [–U,+r] tones in MacZ, realization of [+r] implies insertion of an epenthetic [+U]

(27) *[+r] realized on an underlying L-toned TBU*



Additional constraints

(28) a. *CONT$_V$

Assign a violation mark for every phonetically visible V associated to two different tones in a phonetically visible way.

b. DEPAL(U–μ)

Assign a violation mark for every colourless association line between a morphologically coloured [±U] and a morphologically coloured μ.

(Trommer and Zimmermann, 2014)

V:-Asymmetry: Contour creation for the Pot-H

(29)

	r-to-U	U-to-μ	DepAL(U–μ)	*Cont$_{\underline{V}}$	Dep[U]	Max[U]	Max[r]
+r +r -r +r / +U +U -U +U / μ μ μ / g u + s i g a ʔ / /H/ /L/ /H/							
☞ a. +r +r -r +r / +U +U -U +U / μ μ μ μ / g u s i g a ʔ / [H] [HL] [H]			*	*			
b. +r +r -r +r / +U +U -U +U / μ μ μ μ / g u s i g a ʔ / [H] [HH] [H]			**!			*	*

V:-Asymmetry: Complete overwriting for the 1.Sg-H

(30)

	r-to-U	U-to-μ	DepAL(U–μ)	*Cont$_V$	Dep[U]	Max[U]	Max[r]
+r -r -r / -U +U / μ μ μ / + g a s i / /L/ /M/							
a. +r -r -r / +U -U +U / μ μ μ / g a s i / [HL] [M]				*!	*		
☞ b. +r -r -r / ≠ / +U -U +U / μ μ μ / g a s i / [H] [M]					*	*	*

Summary: Analysis for MacZ

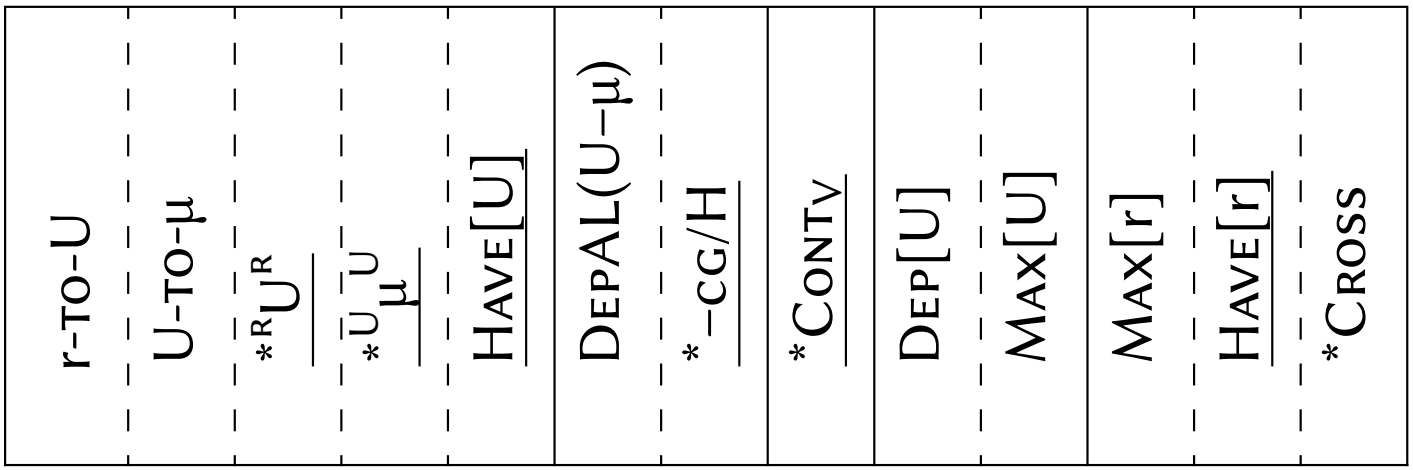
Asymmetry of 1.Sg-H and Pot-H follows from their **different specification**:

- less complex [+r] can associate 'across' other [±r] specifications to reach a preferred TBU;
  the more complex [+U,+r] cannot since (the 'crossed') μ's would remain without an overt specification for [±U]

- overwriting of an underlying L-tone implies insertion of an epenthetic [+U] for [+r] – additional association lines to avoid a contour tone are less costly than they are for associating **[+U,+r]**

Summary: The ranking for MacZ

(31)



(tested with the help of OTHelp (Staubs et al., 2010))

Further implications

Locality asymmetry of tone-demanding suffixes in Bora

(Seifart, 2005; Thiesen and Weber, 2012; Roe, 2014)

- Witotoan language, spoken in Northern Peru
- two tone levels H and L; H is assumed to be the default
- some suffixes impose L: on the **final or penult TBU** of their base

(32) *Suffixes imposing L on final or penult base σ*

a. o ma^{x}ʧ^{h}o-**^{L}**t^{h}ɛ-ʔi / I eat-go.do
ó má^{x}ʧ^{h}**ò**-t^{h}é-ʔì / 'I go to eat' (Thiesen and Weber, 2012, 77)

b. aːnɯ-kpa-**^{L}**ma / cassava.shoot-slab-Soc
áːnɯ́-kp**à**-mà / 'with a cassava.shoot for planting' (Roe, 2014, 92)

c. ma^{x}ʧ^{h}o-**^{Lø}**mɛ / eat-AN.PL
m**à**^{x}ʧ^{h}ó-mɛ̀ / 'they ate' (Thiesen and Weber, 2012, 77)

d. imipa^{x}ʧ^{h}o-**^{Lø}**mɛ / fix-AN.PL
ímíp**à**^{x}ʧ^{h}ó-mɛ̀ / 'they fix' (Thiesen and Weber, 2012, 77)

Locality asymmetry for tone-demanding suffixes in Bora

- there is a preference for L-tones to be realized on the penultimate TBU of the base – due to ALIGN(L;L) or a preference for stressed position: *–U,–R/NHD (de Lacy, 2002)
- **some** floating L's ([–U,–r]) **can reach this preferred position** and others ([–r]) not

Locality asymmetry of tone-demanding suffixes in Bora

(33) *Local association: /-$^{L}t^{h}\varepsilon$/*

		HAVE[U]	*–U,–R/NHD	*CROSS
	+r +r –r / +U +U –U / μ μ / x / m a tʃʰ o + tʰ ε / /H/ /H/			
☞ a.	+r +r –r +r / +U +U –U +U / μ μ μ / x / m a tʃʰ o tʰ ε / [H] [L] [H]		*	
b.	+r +r –r +r / +U +U –U +U / μ μ μ / x / m a tʃʰ o tʰ ε / [L] [H] [H]	*!		

(34) *Non-local association: /-$^{L\emptyset}m\varepsilon$/*

		HAVE[U]	*–U,–R/NHD	*CROSS
	+r +r –r / +U +U / μ μ / x / m a tʃʰ o + m ε / /H/ /H/			
a.	+r +r –r +r / +U +U -U +U / μ μ μ / x / m a tʃʰ o m ε / [H] [L] [H]		*!	
☞ b.	+r +r –r +r / +U -U +U +U / μ μ μ / x / m a tʃʰ o m ε / [L] [H] [H]			*

Summary

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- the asymmetric behaviour of different morphological H-tones in MacZ follows under the assumption of **tonal features** and underspecification

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- **non-local association** of (non-complex) floating tone features under the pressure of higher-ranked markedness constraints is possible in a containment-based system

Summary

- the asymmetric behaviour of different morphological H-tones in MacZ follows under the assumption of **tonal features** and underspecification
- **non-local association** of (non-complex) floating tone features under the pressure of higher-ranked markedness constraints is possible in a containment-based system
- extends the argument that phonetically identical tones may have **different phonological specification** in a tone feature account
  - two different M's in Bimoba (Snider, 1998): downstepped H vs. underlying M
  - two different L's in Mundurukú (Picanço, 2005)
  - **two different H-tones in MacZ**

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A1: More examples for the 1.SG formation

(35) *1.Singular (Broadwell et al., 2011, 6+7)*

	UNDERLYING	SURFACE
a.	be-tsìːgaʔ-jà-nà COM-get.dirty-1SGS-3SGO	be-tsìːgáʔ-jà-nà 'I dirtied it'
	be-ʃuʔní-jà-nà COM-wrinkle-1SGS-3SGO	be-ʃúʔní-já-nà 'I wrinkled it'
b.	be-bìθːà-jà-nà COM-wet-1SGS-3SGO	be-bíθːà-jà-nà 'I wetted it'
	be-di-gàːsi-jà-nà COM-CAUS-be.scared-1SGS-3SGO	be-di-gáːsi-ja-nà 'I scared it'
	be-deʧːù-jà-nà COM-fold-1SGS-3SGO	be-deʧːú-já-nà 'I folded it'
	be-tùːbí-jà-nà COM-roll-1SGS-3SGO	be-túːˡbí-já-nà 'I rolled it'
c.	be-ʃatːa-jà-nà COM-iron-1SGS-3SGO	be-ʃatːá-já-nà 'I ironed it'
	be-neːsi-jà-nà COM-submerge-1SGS-3SGO	be-neːsí-já-nà 'I submerged it'

A2: Tonal features

(36) *Tonal features (Yip, 1989; Snider, 1990; Hyman, 1992)*

Extra high	High	Mid	Low
+r | +U	-r | +U	+r | -U	-r | -U

- register [±Upper] divides pitch range of voice in half; [±raised] subdivides register (Yip, 1980; Pulleyblank, 1986)
- arguments:
  - restrictions for contour tones (e.g. only contours in one ±U register)
  - processes between non-contiguous tones possible (e.g. Ewe: (–U,+h) becomes (+U,+h) after (+U,–h); (Odden, 1995))
  - register shift (e.g. upstep in Krachi (Snider, 1990))
  - **same surface tones may have different underlying representation** (e.g. Snider, 1998; Picanço, 2005)

A3. The H in the potential as morphological H?

(37) *No spreading from H-toned suffix/clitic (Foreman, 2006, 80)*

Cáási íttú ttsitaa' cààbínàyhà ò méénús ruulà.						{Wedding.Story.1}		
cáási	íttú	ttsitaa'	cààba=ní	=nà	=yhà	ò	menus	ruulà
almost	about	fourteen	S/probably.be=PREP	=3N	=AFF	or	less	even

She was probably about fourteen or even less.

A4. More morpheme-specific H-spread?

- in the descriptions of MacZ in Broadwell (2000) and Foreman (2006): certain preverbal elements spread their H (38-a+b), other H-final ones do not (38-c)

(38) *Morpheme-specific H-Spread from preverbal elements*

a. là꞉nà gù-tò꞉-nà bì꞉já (Broadwell, 2000, 22)
he Com-eat-3 something
'He ate something'

b. ànú gú-tò꞉-nà-nà (Broadwell, 2000, 22)
nobody Com-eat-3-3
'Nobody ate it'

c. àbí꞉ rula꞉saʔ=jaʔ bék꞉úʔ nuʔ rujhi꞉aʔ=ná (Foreman, 2006, 72)
Neg Hab.like=1.Sg dog Rel Hab.bark=Invis
'I don't like that dog which is barking'

A5. No repair for underlying /Vʔ/

- high-ranked *–CG/H has no effect for an underlying H-toned V not followed by /ʔ/: reassociation of an underlying [+r] would not help at all since *–CG/H is insensitive to the phonetic visibility of the association line linking the vowel and the [+r]

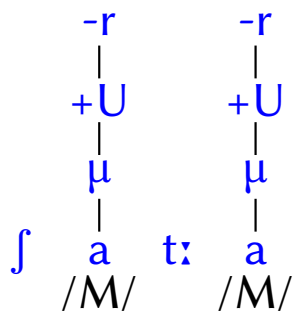
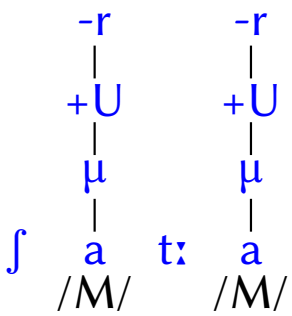
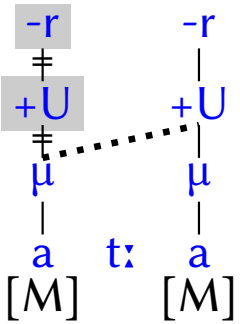
A5. No repair for underlying /V?/

(39)

	*−CG/H	MAX[r]
-r +r | | +U +U | | μ μ | | ʃ u ʔ n i /M/ /H/		
☞ a. -r +r | | +U +U | | μ μ | | ʃ u ʔ n i /M/ /H/	*	
b. -r +r ‡ ‡ +U +U | | μ μ | | ʃ u ʔ n i [H] [M]	*	*!

A6. No repair for underlyingly non-initial M

(40)

	HAVE[U]	DEP[U]	*LONG[U]	INITM
				
☞ a. 				*
b. 			*!	

A7. Strata as an alternative?

- a possible alternative: the potential prefix and the 1.Sg formation are optimized in different strata (Trommer, 2011; Bermúdez-Otero, in preparation)
  - Stratum 1 (incl. 1.Sg morpheme) – floating H associates non-locally to preferred position
  - Stratum 2 (incl. Pot morpheme) – floating H associates locally to adjacent position

A7. Strata as an alternative?

- an **OCP-effect**:
  - if the potentical-H and 1.Sg-H are expected on adjacent TBU's, only the former surfaces (41-a)
  - if both are expected on the same TBU, the Pot-H (=contour creation) surfaces (41-b)

(41) *OCP effect: no adjacent* POT*-H and* 1.SG*-H (Broadwell et al., 2011, 8)*

	UNDERLYING	SURFACE	
a.	gú-di-bìθːà-jà-nà	gú-dí-bìθːà-jà-nà	*gú-dí-bíθːà-jà-nà
	POT-CAUS-wet-1SGS-3SGO	'I will wet it'	
b.	gú-tùːbí-jà-nà	gú-tûːbí-já-nà	*gú-túːˡbí-já-nà
	POT-roll-1SGS-3SGO	'I will roll it'	

A7. Strata as an alternative?

(42) *A stratal account for the OCP effect*

a.	Underlying	bìθːà	
	Stratum 1	bíθːì	1.Sg-H associates
	Stratum 2	gú-dí-bìθːà	Pot-H associates
			1.Sg-H deassociates due to OCP

A7. Strata as an alternative?

(42) *A stratal account for the OCP effect*

a.	Underlying	bìθːà	
	Stratum 1	bíθːì	1.Sg-H associates
	Stratum 2	gú-dí-bìθːà	Pot-H associates
			1.Sg-H deassociates due to OCP
b.	Underlying	tùːbì	
	Stratum 1	túːˈbì	1.Sg-H associates
	Stratum 2	gú-tûːbì	Pot-H associates
			1.Sg-H deassociates due to OCP

A7. Strata as an alternative?

But:

- if this implies that the OCP in stratum 2 triggers deletion of H-tones adjacent to the newly associated Pot-H, wouldn't we then mispredict deassociation of the second stem-H in (43)?
  **/gú-lápːà/* instead empirically correct /gú-lápːˈá/

(43) *A stratal account for the OCP effect*

Underlying	làpːá	
Stratum 1	làpːá	–
Stratum 2	*gú-lápːà	Pot-H associates
		stem-H deassociates due to OCP