Allomorphy between tone and segments in Yucunany Mixtepec

An optimality-theoretic account

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Phonologically conditioned suppletive allomorphy (PCSA)

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The surface representation/effect of one morpheme M is different depending on the phonological context and this difference cannot be attributed to phonological changes independently expected in this context.

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(2) *Segmental PCSA in Moroccan Arabic (Mascaro 2007)*

	Base	3.Sg.Masc		Possible analysis:
a.	ʃafu	ʃafuh	'error'	3.Sg.M ↔ /h/ /V__
b.	ktab	ktabu	'book'	3.Sg.M ↔ /u/ /C__

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➙ **poly-representational analysis**

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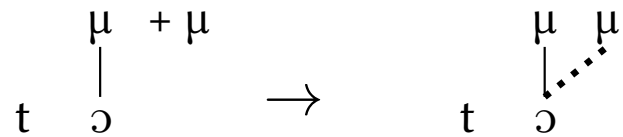
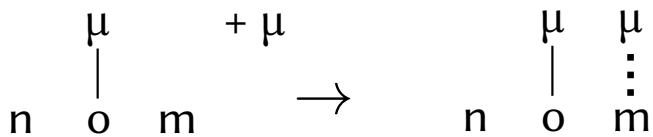
a.	tɔ	'to buy'	tɔː	
	dane	'to turn'	daneː	
b.	nom	'to drink'	nomː	
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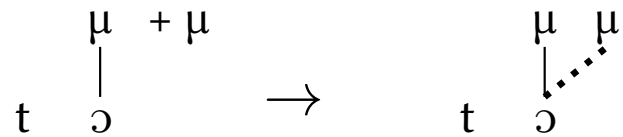
a.	tɔ	'to buy'	tɔː	
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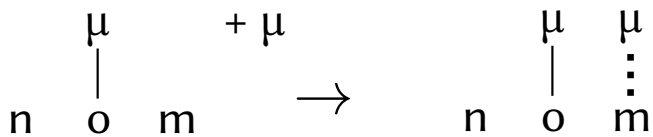
b.	nom	'to drink'	nomː	
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→ mono-representational analysis

Main Claim

- propose an analysis for a phonologically predictable allomorphy in Yucunany Mixtepec Mixtec (=YM)
  - a morphological low tone with different surface effects, or
  - the realization of additional segments

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- propose an analysis for a phonologically predictable allomorphy in Yucunany Mixtepec Mixtec (=YM)
  - a morphological low tone with different surface effects, or
  - the realization of additional segments
- an argument for **contrastive prosodic specification in the underlying form**:

different underlying syllable structures = different surface effects

➙ a prediction of OT and Richness of the Base

1. Introduction

2. Allomorphy in Yucunany Mixtepec

3. A monorepresentational analysis for YM

4. Implications and further prediction

5. Summary and Conclusion

Allomorphy in Yucunany Mixtepec

Mixtec languages

- indigenous languages, spoken in southern Mexico (Otomanguean)
- most communities have less than 50.000 speakers (McKendry 2013)

(4) *State of Oaxaca*

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Background on Yucunany Mixtepec Mixtec (YM)

(Pike&Ibach 1978, Paster&Beam 2004a,b, Paster 2007,2012)

- no codas, restricted set of initial onset clusters
- three tones: H (=V́), M (=V), L (=V̀), and contour tones
- vowel length is not contrastive – default assumption: TBU=σ
  ('VV(VV)' notated to have enough space for contour tones!)
- underlined V's=nasalized V's

1.Sg formation in YM

- a low tone is added and creates a contour on the final σ (5-a)
- a low tone overwrites a base tone on the final σ (5-b)
- a segmental allomorph /–yù/ surfaces (5-c)

(5) *Tonal allomorphy in Yucunany Mixtepec (Paster&Beam 2004:3-4)*

a.	nàmá	'soap'	nàmáà	'my soap'	L **H**	→ L **HL**
	tìtzi	'stomach'	tìtziì	'my stomach'	L **M**	→ L **ML**
b.	la'la	'mucus'	la'là	'my mucus'	M **M**	→ M **L**
	xá'nu̲	'cigarette'	xá'nù̲	'my cigarette'	H **M**	→ H **L**
c.	sòkò	'shoulder'	sòkòyù	'my shoulder'	L **L**	→ L **L yù**
	tutù	'paper'	tutùyù	'my paper'	M **L**	→ M **L yù**

1.Sg formation in YM: context generalizations

A. a low tone is added and **creates a contour** for H-final stems

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nàmá	'soap'	nàmáà	'my soap'	L **H**	→ L **HL**
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kwà'a	'man's sister'	kwà'aà	'my man's sister'	L **M**	→ L**ML**

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C. a segmental allomorph **/–yù/ surfaces** if the stem ends in an L-toned σ

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- 1.Sg is 'marked by a floating L tone that associates to the end of the root' (p.71)
- a different allomorph /yù/ for bases ending in L

  → **homophony avoidance**

Theoretical question

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- Why does an additional low tone sometimes creates a new contour tone and sometimes overwrites an underlying base tone?
- How can the addition of a tone and the realization of a segmental string follow from a single underlying representation?

A monorepresentational analysis for YM

Main claim

A monorepresentational analysis:

A segmental /yu/ + L; the former only realized as last resort

$$1.\text{SG} \leftrightarrow \overset{\text{L}}{\quad} \text{yu} /\#\_\_$$

❶ Non-realization of /yu/

- the /yu/ underlyingly lacks a σ node and since Dep-σ (11-a) is higher ranked than Max-S (11-b), the morpheme is preferably not realized
  (➜ morphemes that are realized in all contexts have an underlying σ)
- the L must be realized due to undominated Max-L (11-c)

(11)

a.	Dep σ	Assign a violation mark for every output σ without an input correspondent.
b.	Max S	Assign a violation mark for every input segment without an output correspondent.
c.	Max L	Assign a violation mark for every input L-tone without an output correspondent.

(12) *Preference for not realizing the /yu/ but realization of the L-tone ➤(6)*

	L_1 H_2 L_a σ_i σ_{ii} na ma yu	MAX L	DEP σ	MAX S
a.	L_1 H_2 σ_i σ_{ii} na ma	*!		**
b.	L_1 H_2 L_a σ_i σ_{ii} σ na ma yu		*!	
☞ c.	L_1 H_2 L_a σ σ na ma			**

❷ Contour creation vs. overwriting

- contour tones are penalized by *CONTOUR$_\sigma$ (=*CNT$_\sigma$) (13-a)
- a contour is created with base-final H's since MAX-H (13-b) and MAX-L dominate *CNT$_\sigma$
- overwriting is predicted since *CNT$_\sigma$ dominates MAX-M (13-c)

(13)

a.	*CNT$_\sigma$	Assign a violation mark for every σ that is associated to more than one tone. (Yip 2002:80)
b.	MAX H	Assign a violation mark for every input H-tone without an output correspondent.
c.	MAX M	Assign a violation mark for every input M-tone without an output correspondent.

(14) *Floating L creates a contour with a base-final H ➤(6)*

	L_1 H_2 L_a σ_i σ_{ii} na ma yu	MAX L	MAX H	DEP σ	*CNTσ	MAX M	MAX S
☞ a.	L_1 H_2 L_a σ σ na ma				*		**
b.	L_1 L_a σ σ na ma			*!			**

(15) *Floating L overwrites a base-final M* ➤*(7)*

	M_1 | σ_i la' M_2 | σ_{ii} la L_a yu	MAX L	MAX H	DEP σ	*CNTσ	MAX M	MAX S
a.	M_1 | σ_i la' M_2 | σ_{ii} la L_a				*!		**
☞ b.	M_1 | σ_i la' L_a ⋮ σ_{ii} la					*	**

❸ No adjacent L-initial syllables

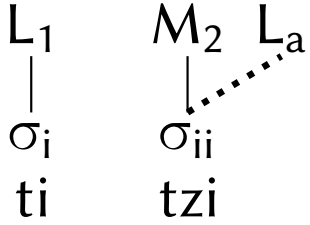
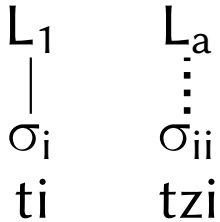
- no overwriting of M if two adjacent σ's both associated with an L at their left edge would result
- a positional, non-local OCP (16) banning two adjacent σ's starting both with an L

(16) $*^{L}\sigma^{L}\sigma$ Assign a violation mark for every pair of adjacent σ's that are associated with an initial L.

(17) *No adjacent L-initial σ: Contour creation for M-final bases I* ➤*(8)*

	MAX L	*$^{L}\sigma^{L}\sigma$	*CNT$_\sigma$	MAX M	MAX S
L_1 H_2 M_3 L_a σ_i σ_{ii} yu ti yu					
☞ a. L_1 H_2 M_3 L_a σ_i σ_{ii} yu ti			**		**
b. L_1 H_2 L_a σ_i σ_{ii} yu ti		*!	*	*	**

(18) *No adjacent L-initial σ: Contour creation for M-final bases II* ➤*(9)*

	L_1 M_2 L_a σ_i σ_{ii} ti tzi yu	MAX L	$*^{L}\sigma^{L}\sigma$	$*CNT_\sigma$	MAX M	MAX S
☞ a.				*		**
b.			*!		*	**

❹ Realization of /yu/ as last resort

- association of L to bases ending in an L is excluded by *[TT]: contour tones (adjacent tones associated to the same TBU) must be different
- realization of **/yu/ as last resort** to satisfy MAX-L becomes optimal

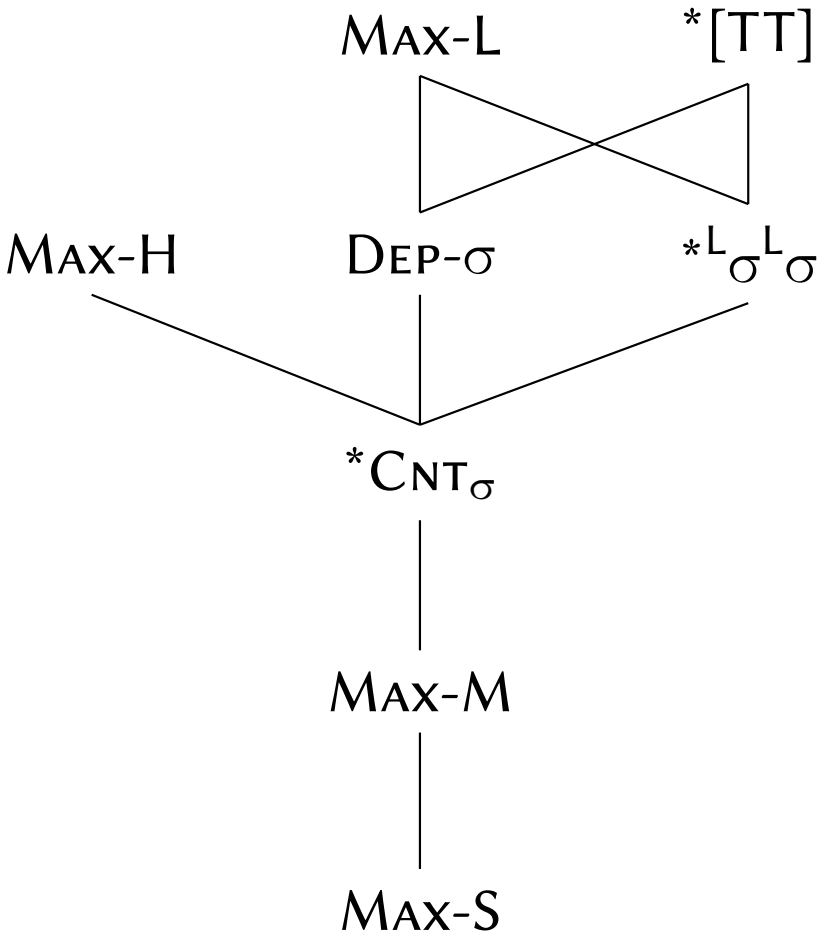
(19) *[TT] Assign a violation mark for every pair of adjacent identical tones that are associated to one TBU.

(20) *No adjacent L's: realization of /–yù/ ➤(10)*

	M_1 L_2 L_a σ_i σ_{ii} tu tu yu	*[TT]	Max L	Dep σ	$*L_\sigma L_\sigma$	Max S
a.	M_1 L_2 L_a σ_i σ_{ii} tu tu	*!				**
b.	M_1 L_a σ_i σ_{ii} tu tu		*!			**
☞ c.	M_1 L_2 L_a σ_i σ_{ii} σ tu tu yu			*	*	

YM: complete ranking

(21)



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- a monorepresentational analysis:
  - a floating tone and
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- the learner is faced with an instance of incomplete neutralization: in 3 of 4 possible (phonological) contexts, she is only provided with a subset of evidence for the complete representation (only the tone, not the segmental content)

Implications and further prediction

Richness of the base and underlying contrast

- (22-a) and (22-b) are both possible input representations in OT

(22) a. 

➤ realized in all contexts

b. yu

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- the analysis based on Dep-σ implies that this difference between underlying forms has a crucial surface effect
- independent arguments for contrastive syllabification in, for example, Elfner (2006), Iosad (2013), or Vaux (2013)

➞ an economy argument: a **lexical contrast is reduced to a difference in underlying prosodic structure**

More allomorphy involving defective segmental morphemes: Aymara

- morphemes triggering lengthening of a preceding vowel in La Paz Aymara (Andes, spoken in Bolivia and Peru)

(23) *Vowel lengthening in the future (Briggs 1976, Hardman 2001)*

	Base	Future	
a.	sara	sara:	
	'go'	'(I) will go'	B265+266
b.	apa	apa:tam	
	'bring, have'	'he will bring'	H211
c.	alja	alja:ma	
	'sell'	'I will sell'	H211

More allomorphy involving defective segmental morphemes: Aymara

- whenever double-lengthening is expected, /-jaː/ surfaces
- no superlong vowels: alternative repair to realize both 'lengthenings'

(24) *Allomorphy between* ː *and ja (Beesley 2000)*

a. warm**i-ː-ː**

women-Vʙ-1>3.Fut

'I will be a women'

warm**ija**ː *warmiːː

b. qulʲqi-n**i-ː-ː**ta

money-possessor-Vʙ-1>3.Fut-FS

'You will have money'

qulʲqin**ija**ːta *qulʲqiniːːta

Aymara: monorepresentational analysis

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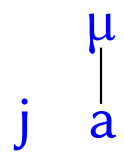
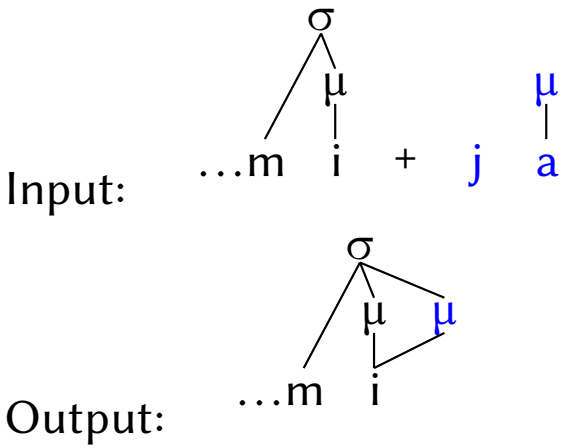
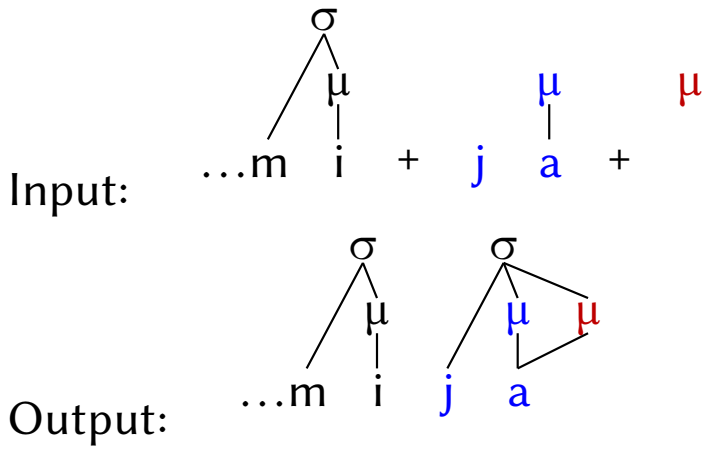
➙ **realization of /-ja/ as last resort to realize the μ**

Aymara: monorepresentational analysis

(25) *Autosegmental analysis of Aymara*

Underlying:	Allomorph 1: V-lengthening	Allomorph 2: Realization of /ja/
		
	DEP-σ ≫ *V:, MAX-S	MAX-μ, *V:: ≫ DEP-σ

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  ➙ crucial assumption: **prosodically defective segments are only realized as a last resort**
- extension of this account to Aymara where a non-concatenative allomorph alternates with a segmental allomorph as well
- prosodically defective morphemes are independently predicted in OT: an economy argument if they can account for apparently lexical contrasts/allomorphy pattern