Overshoot in Positional Licensing*

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1 A Problem, A Solution, and its Consequences

- Tudanca Montañés (Romance, Spain; Hualde 1989, Penny 1978): final high vowels centralize (shown with capitalization) and trigger harmony up to and including the stressed vowel:

(1)

a.	pÍntU	'male calf'	pínta	'female calf'
	sekÁlU	'to dry him'	sekálo	'to dry it' (mass)
b.	kÁrAbU	'tawny owl'		
	orÉgAnU	'oregano'		
	antigwÍsImU	'very old'		

- Positional Licensing (PL; Walker 2011, among many others):

(2) License(λ, π): assign one violation mark for each element λ that does not coincide with some position π.

- For Tudanca: License([–ATR], $\acute{\sigma}$) (assuming centralization = [–ATR] (Hualde 1989))

(3)

/oréganu/	License([–ATR], $\acute{\sigma}$)	Ident(ATR)
a. oréganU	*!	*
☞ b. orÉgAnU		***
c. OrÉgAnU		****!

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- Kaplan (to appear): (2) is pathological in Harmonic Grammar (HG; e.g. Legendre et al. 1990).
- Harmony incurs potentially many IDENT violations which can gang up on LICENSE:

(4) a.

/píntu/	LICENSE$_3$([–ATR], *σ́*)	IDENT$_2$(ATR)	*H*
a. píntU	−1	−1	−5
☞ b. pÍntU		−2	−4

b.

/oréganu/	LICENSE$_3$([–ATR], *σ́*)	IDENT$_2$(ATR)	*H*
💣 a. oréganU	−1	−1	−5
(☞) b. orÉgAnU		−3	−6

- The new formalism developed in Kaplan (to appear): Positive Gradient PL (PG-PL):

(5) LICENSE(λ, π): assign +1 for each λ that coincides with some π. For each λ that coincides with some π, assign +1 for each additional position that λ coincides with.

- The pathology is gone:

(6)

/oréganu/	LICENSE$_3$([–ATR], *σ́*)	IDENT$_2$(ATR)	*H*
a. oréganU		−1	−2
☞ b. orÉgAnU	+3	−3	3

- But by rewarding harmony outside the licensor, (5) motivates "overshoot":

(7)

/oréganu/	LICENSE$_3$([–ATR], *σ́*)	IDENT$_2$(ATR)	*H*
(☞) a. orÉgAnU	+3	−3	3
💣 b. OrÉgAnU	+4	−4	4

- How should we prevent overshoot? Two options:
  1. Define PL so that harmony beyond the licensor is not rewarded.
  2. Use other constraints to blocks overshoot.
- My argument: PG-PL's overshoot is advantageous, and therefore option 2 is best; PL itself shouldn't discourage overshoot.
- Certain PL systems show overshoot under the right conditions: Tudanca Montañés, Eastern Andalusian

2 Two Sources of Centralization in Tudanca Montañés

2.1 Final Vowel Centralization

- Final high vowels centralize and trigger harmony up to the stressed syllable (1).
- IDENT(ATR)-pretonic (Canalis 2007, Kaplan 2015, Maiden 1995, Walker 2011) blocks overshoot:

(8)

/oréganu/	LICENSE$_4$([–ATR], $\acute{\sigma}$)	IDENT$_3$(ATR)	IDENT$_2$(ATR)-pretonic	*H*
☞ a. orÉgAnU	+3	−3		3
b. OrÉgAnU	+4	−4	−1	2

⇒ Faithfulness gangs up on LICENSE in the pretonic domain.

- Alternatives to IDENT(ATR)-pretonic: *[–ATR], CRISPEDGE (Ito & Mester 1999, Kawahara 2008, Walker 2001, 2011)

2.2 Labial-Induced Centralization

- Pretonic mid vowels centralize when adjacent to a labial:

(9)

mEñíka	'pinky'
gwEbéra	'egg-basket'
bOnúka	'weasel'
mOrθíya	'blood-sausage'

- Other vowels normally do not centralize in this context:

(10)

piyíhkos	'pinches'
pintáa	'painted' (fem)
buhános	'worms'
puntáa	'stitch'
pasár	'to pass'
marános	'pigs'

(11) a.

/bonúka/	*LAB-[+ATR]$_{\text{mid}}$$_4$	IDENT$_3$(ATR)	*LAB-[+ATR]$_{\text{V}}$$_2$	*H*
a. bonúka	−1		−1	−6
☞ b. bOnúka		−1		−3

b.

/pínta/	*LAB-[+ATR]$_{\text{mid}}$$_4$	IDENT$_3$(ATR)	*LAB-[+ATR]$_{\text{V}}$$_2$	*H*
☞ a. pínta			−1	−2
b. pÍnta		−1		−3

⇒ IDENT suppresses *LAB-[+ATR]$_{\text{V}}$.

2.3 When the Two Sources Converge

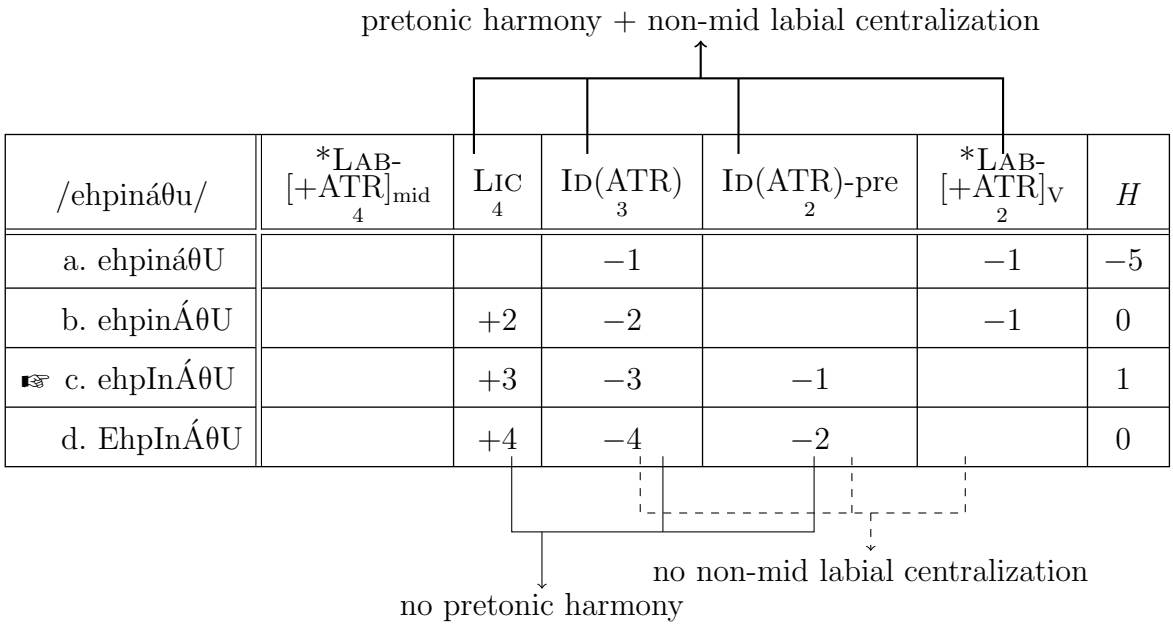
- Pretonic non-mid vowels normally resist centralization from both sources. But they do centralize under pressure from both processes:

(12)

pIyÍhkU	'pinch'
ehpInÁθU	'spinal cord'
mUr̄ÍyU	'stone'
bUhÁnU	'worm'
mAr̄ÁnU	'pig'
tAmbÚhU	'short and fat person'

- The pretonic vowels centralize because (i) they are labial-adjacent, and (ii) licensing-driven harmony also occurs.
- This is the overshoot predicted by PG-PL.
- (12) is produced by combining (8) and (11):

(13)



/ehpináθu/	*Lab-[+ATR]$_{mid}$ 4	Lic 4	Id(ATR) 3	Id(ATR)-pre 2	*Lab-[+ATR]$_V$ 2	*H*
a. ehpináθU			−1		−1	−5
b. ehpinÁθU		+2	−2		−1	0
☞ c. ehpInÁθU		+3	−3	−1		1
d. EhpInÁθU		+4	−4	−2		0

- Because the summed weights of License and *Lab-[+ATR]$_V$ exceed Faithfulness, when centralization satisfies both of them, it is motivated.
- The previous results still obtain. On their own, neither License nor *Lab-[+ATR]$_V$ can overcome Faithfulness.

- PG-PL's encouragement of overshoot is crucial:

(14)

/ehpináθu/	*Lab-[+ATR]$_{mid}$ 4	Lic 4	Id(ATR) 3	Id(ATR)-pre 2	*Lab-[+ATR]$_{V}$ 2	*H*
(☞) a. ehpInÁθU		+2	−3	−1		−3
💣 b. ehpinÁθU		+2	−2		−1	0

- Summary:
  - Tudanca Montañés exhibits the overshoot that PG-PL predicts.
  - PG-PL provides a simple analysis; where necessary, overshoot is blocked by other constraints.

3 Harmony in Eastern Andalusian

3.1 s-Aspiration, Laxing, and Harmony

- Vowel harmony in Eastern Andalusian (Romance, Spain; Jiménez & Lloret 2007, Lloret & Jiménez 2009) provides similar evidence for overshoot-inducing PL.
- s-Aspiration: Word-final (more generally, coda) /s/ deletes, triggering laxing of now-word-final vowel:

(15)

mes	mɛ	'month'
tos	tɔ	'cough'

- This triggers harmony on the stressed vowel:

(16)

monos	mɔ́nɔ	'monkeys'
tesis	tɛ́sɪ	'thsis'
lejos	lɛ́hɔ	'far'

- Two optional extensions of this harmony:

(17) *Post-tonic vowels optionally harmonize:*

treboles	tréβolɛ ∼ tréβɔlɛ	'clovers'
cómetelos	kómetelɔ ∼ kómɛtɛlɔ	'eat them (for you)!'
	*kómɛtelɔ, *kómetɛlɔ	

⇒ If one post-tonic vowel harmonizes, they all do.

(18) *Pretonic vowels optionally harmonize:*

momentos	momɛ́ntɔ ∼ mɔmɛ́ntɔ	'instants'
reloj	relɔ́ ∼ rɛlɔ́	'watch'
relojes	relɔ́hɛ ∼ rɛlɔ́hɛ	'watches'
monederos	moneðéɾɔ ∼ mɔnɛðéɾɔ	'purses'
	*mɔneðéɾɔ, *monɛðéɾɔ	
cojines	kohíne ∼ kɔhíne	'pillows'
cotillones	kotiʒɔ́nɛ ∼ kɔtiʒɔ́nɛ	'cotillions'
recógelos	rekɔ́helɔ ∼ rekɔ́hɛlɔ ∼ rɛkɔ́hɛlɔ	'pick them'
	*rɛkɔ́helɔ	

⇒ Like post-tonic vowels, pretonic vowel harmonize as a group.

⇒ Pretonic harmony requires post-tonic harmony.

- Not analyzed here: high Vs lax word-finally but do not harmonize: *crisis* [kɾísɪ] 'crisis'

3.2 Analysis

- Walker's (2011) OT analysis:
  - Stressed vowel harmony: traditional PL
  - Post-tonic harmony: a constraint against discontiguous harmony as in [kɔ́metelɔ]
  - Pretonic harmony: a second PL formalism ("Maximal Licensing") specifically designed to trigger harmony everywhere
  - Optionality: variable constraint ranking
- Optionality in HG = variation in constraint weights (Hayes 2017, Jesney 2007)
- The full range of patterns emerges with PG-PL, IDENT(ATR), and IDENT(ATR)-pretonic simply by changing LICENSE's weight:

(19) *Variable Post-tonic Harmony*

a.

/kómetelos/	License$_{4}$([–ATR], $\acute{\sigma}$)	Ident$_{3}$(ATR)	H
a. kómetelɔ		−1	−3
b. kɔ́metelɔ	+2	−2	2
☞ c. kɔ́mɛtɛlɔ	+4	−4	4
d. kɔ́mɛtelɔ	+3	−3	3

w(License) > w(Ident)

b.

/kómetelos/	License$_{2}$([–ATR], $\acute{\sigma}$)	Ident$_{3}$(ATR)	H
a. kómetelɔ		−1	−3
☞ b. kɔ́metelɔ	+2	−2	−2
c. kɔ́mɛtɛlɔ	+4	−4	−4
d. kɔ́mɛtelɔ	+3	−3	−3

$2w$(License) > w(Ident) > w(License)

- Coordination among post-tonic vowels is predicted: candidate (d) is collectively harmonically bounded by (b) and (c).

(20) *Variable Pretonic Harmony*

a.

/monedéros/	License$_{6}$([–ATR], $\acute{\sigma}$)	Ident$_{3}$(ATR)	Ident$_{2}$(ATR)-pre	H
a. moneðéɾɔ		−1		−3
☞ b. mɔnɛðéɾɔ	+4	−4	−2	8
c. moneðéɾɔ	+2	−2		6
d. monɛðéɾɔ	+3	−3	−1	7

w(License) > w(Ident) + w(Ident-pretonic)

b.

/monedéros/	License$_{4}$([–ATR], $\acute{\sigma}$)	Ident$_{3}$(ATR)	Ident$_{2}$(ATR)-pre	H
a. moneðéɾɔ		−1		−3
b. mɔnɛðéɾɔ	+4	−4	−2	0
☞ c. moneðéɾɔ	+2	−2		2
d. monɛðéɾɔ	+3	−3	−1	1

$2w$(License) > w(Ident)
w(Ident) + w(Ident-pretonic) > w(License)

- Coordination among pretonic vowels is predicted: candidate (d) is collectively harmonically bounded by (b) and (c).
- Pretonic harmony entails post-tonic harmony:
  - If $w(\textsc{License}) > w(\textsc{Ident}) + w(\textsc{Ident}\text{-pretonic})$, then $w(\textsc{License}) > w(\textsc{Ident})$

(21) Factorial Typology (OT-Help; Staubs et al. 2010): 4 languages:
  a. Harmony only on stressed vowel (Eastern Adalusian)
  b. Harmony on stressed vowel and all post-tonic vowels (Eastern Adalusian)
  c. Harmony everywhere (Eastern Adalusian)
  d. No Harmony

- The No Harmony language emerges when it is not the case that $2w(\textsc{License}) > w(\textsc{Ident})$ (from (19b) and (20b)). Therefore, this is the only condition Eastern Andalusian imposes on these constraints.

3.3 Summary

- Without overshoot from PG-PL, the analysis cannot produce pretonic harmony.
- The PG-PL analysis is simpler than one grounded in traditional licensing.

4 Conclusion

- PG-PL makes an analysis of Tudanca Montañés available, and it offers a simple account of Eastern Andalusian.
- The proper way to prevent overshoot is by suppressing it with other constraints, not defining PL so that it cannot trigger it.
- PG-PL combines both traditional PL and Walker's Maximal Licensing—no need for two different formalisms.
- Taken together, these results provide more support for PG-PL as a whole.

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