

Opacity in Eastern Andalusian Harmony

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AMP 2020
September 20, 2020

ATR Harmony

- Harmony opaquely overapplies to unstressed syllables.
- “Memory” of previous stages allows a serial HG account of this opacity.

- /s/-aspiration & final laxing: final /s/ deletes, causing laxing of adjacent vowel.
- This [-ATR] triggers harmony on non-high stressed syllables (1).

(1)	<i>tesis</i>	tésɪ	‘thesis’	<i>nenes</i>	nénɛ	‘babies’
	<i>monos</i>	mónɔ	‘monkeys’	<i>lejos</i>	léɰɔ	‘far’
	<i>asas</i>	asəp	‘handles’			

- Nonfinal post-tonic vowels optionally harmonize (2a), as do pretonic vowels (2b). High vowels are transparent to harmony (2c).

(2)	a.	<i>treboles</i>	tréβole ~ tréβole	‘clovers’
		<i>cómetelos</i>	kómetelo ~ kómetelo	‘eat them (for you)!’
			*kómetelo, *kómetelo	
	b.	<i>momentos</i>	moméntɔ ~ moméntɔ	‘instants’
		<i>relojes</i>	relóɰe ~ relóɰe	‘watches’
		<i>monederos</i>	moneðéɰɔ ~ moneðéɰɔ	‘purses’
			*moneðéɰɔ, *moneðéɰɔ	
		<i>recógelos</i>	rekóhelo ~ rekóhelo ~ rekóhelo	‘pick them’
			*rekóhelo	
	c.	<i>crisis</i>	krísɪ	‘crisis’
		<i>muchos</i>	múɰɔ	‘many’
		<i>ídolos</i>	íðolo ~ íðolo	‘idols’
		<i>cojines</i>	kohíne ~ kohíne	‘pillows’
		<i>cotillones</i>	kotizóne ~ kotizóne	‘cotillions’

Opacity & Serial HG

- OT analyses: Positional Licensing (PL) drives [-ATR] to the stressed syllable, with other positions optionally harmonizing along the way (Jiménez & Lloret 2007, Lloret 2018, Lloret & Jiménez 2009, Walker 2011).
- Crosslinguistically, PL-driven harmony fails altogether if the licenser cannot harmonize (but see Mascaró (2019)); not so here: [íðolo]
- An HG-based version of PL (Kaplan 2018); a positive constraint that requires serialism to avoid infinite goodness (Kimper 2011):

(3)	LICENSE([-ATR], $\acute{\sigma}$): For each [-ATR] that coincides with $\acute{\sigma}$, assign +1 for each syllable that this [-ATR] appears in.
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- A harmonic improvement tableau, showing an unstressed high vowel:

	/kotizóne/	* ₁ 6	LICENSE 4	IDENT(ATR) 1	H
a.	kotizóne is less harmonic than ↘				0
b.	kotizóne is less harmonic than ↘		+2	-1	7
☞ c.	kotizóne is more harmonic than ↗		+3	-1	11
d.	kotizóne	-1	+4	-1	9

- The stressed vowel harmonizes first, then other vowels: LICENSE gives no reward absent harmony in the stressed syllable.
- Optionality comes from varying the weight of constraints like IDENT—not addressed here.
- But if the stressed vowel is high, there is no path to the correct output:

(5)	a.	/íðolo/	* ₁ 6	LIC 4	IDENT 1	H	
		a. íðolo ↘					0
		b. íðolo ↘	-1	+2	-1		1
		☞ c. íðolo ↗	-1	+3	-1		5
		(☞) d. íðolo			-1		-1
	b.	/íðolo/	* ₁ 9	LIC 4	IDENT 1	H	
		☞ a. íðolo ↗					0
		(☞) b. íðolo			-1		-1
		c. íðolo	-1	+2	-1		-2

$2 * w(\text{License}) > w(*_1)$: Harmony on $\acute{\sigma}$ opens the door to harmony elsewhere. Subsequently retracting harmony off $\acute{\sigma}$ sacrifices all of LICENSE’s rewards.

$w(*_1) > 2 * w(\text{License})$: Harmony on $\acute{\sigma}$ is blocked, so no position can harmonize.

- Unstressed vowels harmonize as if the stressed vowel had harmonized.
- **Proposal:** once a feature is licensed, it remains so throughout the derivation (indicated by subscript *L*).
- If LICENSE continues to reward [-ATR] that has been retracted off the stressed syllable, the derivation in (5a) succeeds.

Persistent Licensing

- | | | |
|-----|----|--|
| (6) | a. | PERSISTENCE: assign -1 if [-ATR] is in $\acute{\sigma}$ and lacks <i>L</i> . |
| | b. | LICENSE([-ATR], $\acute{\sigma}$): For each [-ATR] that coincides with $\acute{\sigma}$ or is marked with <i>L</i> , assign +1 for each syllable that this [-ATR] appears in. |

- **Step 1** (not shown): /s/ aspiration & final laxing

(7)	Step 2																														
	<table border="1"> <thead> <tr> <th>/íðolo/</th> <th>*₁ 6</th> <th>LIC 4</th> <th>IDENT 1</th> <th>PERS 1</th> <th>H</th> </tr> </thead> <tbody> <tr> <td>a. íðolo</td> <td></td> <td></td> <td></td> <td></td> <td>0</td> </tr> <tr> <td>☞ b. íðolo_L</td> <td>-1</td> <td>+2</td> <td>-1</td> <td></td> <td>1</td> </tr> <tr> <td>c. íðolo</td> <td>-1</td> <td>+2</td> <td>-1</td> <td>-1</td> <td>0</td> </tr> <tr> <td>d. íðolo</td> <td></td> <td></td> <td>-1</td> <td></td> <td>-1</td> </tr> </tbody> </table>	/íðolo/	* ₁ 6	LIC 4	IDENT 1	PERS 1	H	a. íðolo					0	☞ b. íðolo _L	-1	+2	-1		1	c. íðolo	-1	+2	-1	-1	0	d. íðolo			-1		-1
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Harmony on the stressed syllable & marking from PERSISTENCE. Harmonizing $\acute{\sigma}$ brings rewards for both it and the final vowel, over-coming $*_1$.

(8)	Step 3																								
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Harmony extends to unstressed vowels, one at a time.

(9)	Step 4																		
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$*_1$ causes harmony to retract off $\acute{\sigma}$. With Persistence, other vowels don’t lose their reward, unlike (5a).

(10)	Step 5																								
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Convergence; no motivation for further changes to harmony.

- Weighting requirements:
 - ◊ $2 * w(\text{License}) > w(*_1)$ gives harmony on $\acute{\sigma}$ in (7).
 - ◊ $w(*_1) > w(\text{License})$ triggers retraction off $\acute{\sigma}$ in (9).
- Typical licensing-driven harmony in which non-licensors do not harmonize without the licenser: increase the weight of $*_1$ to 8. Step 2 fails.

Alternatives

- OT analyses sidestep opacity: when PL cannot trigger harmony, a second constraint motivates harmony throughout the word.
- With Persistence, the motivation for harmony is consolidated into one constraint and brings the opaque nature of the system to the fore.
- Persistence’s “memory” is similar to the covert representations of Turbidity (Goldrick 2000), but serialism makes covert representations unnecessary.

Summary

- Serialism provides intermediate stages that persistence can access, allowing an account of Eastern Andalusian’s opacity.
- The result is a Duke of York derivation (Pullum 1976), but the derivation converges because the interaction between LICENSE and IDENT changes during the derivation.
- Remaining issues:
 - Is PERSISTENCE the right tool?
 - Does this analysis extend to other kinds of opacity?

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