Long-Distance Licensing in Harmonic Grammar

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AMP 2015, October 10

A Pathology in HG

- Walker (2011): Positional Licensing yields 3 kinds of vocalic patterns:

(1) a. *Indirect Licensing* — $\acute{\sigma}\ \sigma\ \sigma$ … [F]   b. *Identity Licensing* — $\acute{\sigma}\ \sigma\ \sigma$ … $[F]_i$ $[F]_i$ c. *Direct Licensing* — $\acute{\sigma}\ \sigma\ \sigma$ … [F]

- My focus: indirect and identity licensing
- Indirect licensing in Central Veneto (Romance; Italy):

(2)

kals-é̲t-o	'sock (m sg)'	kals-í̲t-i	'sock (m pl)'
kant-é̲-se	'sing (1pl)'	kant-í̲-si-mo	'sing (1pl impf subj)'
ó̲rde̲no	'order (1sg)'	ú̲rdi̲ni	'order (2sg)'

- Identity licensing in Lena (Romance; Spain):

(3)

trwé̲banos	'beehive (m pl)'	trwí̲banu	'beehive (m sg)'
burwé̲banos	'wild strawberry (m pl)'	burwí̲banu	'wild strawberry (m sg)'

(4) *Central Veneto*: urdini — [+hi]   *Lena*: tribwanu — $[+hi]_i$ $[+hi]_i$

(5) *Central Veneto*

/órdeni/	LICENSE([+high]$_{\text{post-tonic}}$, $\acute{\sigma}$)	*DUPLICATE	IDENT(high)
a. órdeni	*!		
☞ b. úrdini			**
c. úrdeni		*!	*

- *DUPLICATE penalizes identity licensing's coindexation. Rank it below IDENT for Lena.
- No-Distant-Licensing Pathology: Under Harmonic Grammar (e.g. Legendre et al. 1990), indirect licensing occurs only across short distances:

(6)

/ée-i/	LIC 5	*DUP 4	IDENT 2	H
a. ée-i	−1			−5
b. íe-i		−1	−1	−6
☞ c. íi-i			−2	−4

/éee-i/	LIC 5	*DUP 4	IDENT 2	H
☞ a. éee-i	−1			−5
b. íee-i		−1	−1	−6
c. íii-i			−3	−6

- An asymmetrical trade-off: failure to spread violates LICENSE once, but spreading violates IDENT potentially many times.
- For n positions targeted by harmony, spreading occurs if $n \cdot w(\text{IDENT}) < w(\text{LICENSE})$
- No matter their weights, IDENT violations overwhelm LICENSE if n is sufficiently large.

> Eliminating this pathology requires a Positional Licensing constraint that:
> - Is sensitive to intervening positions, not just the licensing position.
> - Rewards spreading instead of penalizing its absence.
>
> This in turn requires implementation in a serialist framework.

Distance-Sensitive Licensing

(7) Revised LICENSE([F],$\acute{\sigma}$) (version 1): assign -1 for each [F] that does not coincide with a stressed syllable and -1 for each syllable that intervenes between [F] and the nearest stressed syllable.

- Equal penalties for spreading and not spreading, so spreading always occurs as long as $w(\text{IDENT}) < w(\text{LICENSE})$:

(8)

	LICENSE	IDENT
a. é-i vs. í-i	−1	−1
b. ée-i vs. íi-i	−2	−2
c. éee-i vs. íii-i	−3	−3

- New problem: identity licensing is impossible:

(9)

/ée-i/	LICENSE n	IDENT m	H
(☞) a. ée-i	−2		$-2n$
b. íe-i	−1	−1	$-n-m$
(☞) c. íi-i		−2	$-2m$

- [íe-i] is collectively harmonically bounded (Samek-Lodovici & Prince 1999):
  - if $n > m, -2m > -n - m$: (c) wins
  - if $n < m, -2n > -n - m$: (a) wins
- Solution: the penalty for skipping intervening positions must be smaller than the penalty for not spreading to the licensor.

(10) Revised LICENSE([F],$\acute{\sigma}$), version 2: assign -1 for each [F] that does not coincide with a stressed syllable and -.5 for each syllable that intervenes between [F] and the nearest stressed syllable.

- Indirect and identity licensing are possible without the pathology; *DUPLICATE is unnecessary.

(11) $\frac{w(\text{LICENSE})}{w(\text{IDENT})} > 2 \rightarrow$ indirect $1 < \frac{w(\text{LICENSE})}{w(\text{IDENT})} < 2 \rightarrow$ identity

/ée-i/	LIC 3	IDENT 1	H
a. ée-i	−1.5		−4.5
b. íe-i	−.5	−1	−2.5
☞ c. íi-i		−2	−2

/ée-i/	LIC 3	IDENT 2	H
a. ée-i	−1.5		−4.5
☞ b. íe-i	−.5	−1	−3.5
c. íi-i		−2	−4

/éee-i/	LIC 3	IDENT 1	H
a. éee-i	−2		−6
b. íee-i	−1	−1	−4
☞ c. íii-i		−3	−3

/éee-i/	LIC 3	IDENT 2	H
a. éee-i	−2		−6
☞ b. íee-i	−1	−1	−5
c. íii-i		−3	−6

Positive Licensing & Serialism

- Another problem: Lena′: epenthesis breaks up clusters, but distance-sensitive licensing blocks epenthesis:

(12)

/trwébtanu/	LICENSE([+high],$\acute{\sigma}$) 4	IDENT 3	NOCODA 2	DEP 1	H
a. trwébtanu	−1.5		−1		−8
☠ b. trwíbtanu	−.5	−1	−1		−7
c. trwébatanu	−2			−1	−9
(☞) d. trwíbatanu	−1	−1		−1	−8

- Kimper (2011): positive constraints avoid problems like this.

(13) Revised LICENSE([F],$\acute{\sigma}$) (final version): assign +1 for each [F] that coincides with a stressed syllable. Assign +.5 for each syllable that is also associated with [F] between [F]'s original host and the licensing position.

(14)

/trwébtanu/	LICENSE([+high],$\acute{\sigma}$) 4	IDENT 3	NOCODA 2	DEP 1	H
a. trwébtanu			−1		−2
b. trwíbtanu	1	−1	−1		−1
c. trwébatanu				−1	−1
☞ d. trwíbatanu	1	−1		−1	0

- Positive constraints invite runaway epenthesis: to maximize the reward in Central Veneto, epenthesize more intervening vowels.
- Kimper (2011): a gradual theory like Serial HG prevents this.

Summary

- Proportional LICENSE eliminates the no-distant-licensing pathology.
- Positive LICENSE address the blocked-epenthesis problem.
- Serial HG rules out infinite epenthesis.

> OT and HG require very different formulations of Positional Licensing. Replicating the OT typology in HG provides support for positive constraints and Serial HG.

Kimper, Wendell A. (2011) *Competing Triggers: Transparency and Opacity in Vowel Harmony.* Ph.D. thesis, University of Massachusetts, Amherst, Amherst, MA.
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Samek-Lodovici, Vieri & Alan Prince (1999) Optima. ROA-363, Rutgers Optimality Archive, http://roa.rutgers.edu.
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Acknowledgements Thanks to Rachel Walker, Abby Kaplan, and audiences at the Univ. of Utah and Leipzig, Germany, for their feedback throughout the development of this work.