Long-distance Licensing in Harmonic Grammar*

Aaron Kaplan
University of Utah
a.kaplan@utah.edu

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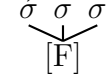
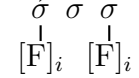
1 Introduction

- Walker (2011): when vowel features are restricted to a prominent position by Positional Licensing, 3 kinds of patterns can result:

(1)

a. *Direct Licensing*	b. *Indirect Licensing*	c. *Identity Licensing*
		

- All three satisfy LICENSE([F],$\acute{\sigma}$).
- My focus today: indirect licensing. E.g. Central Veneto (Walker 2005, 2008, 2010, 2011):

(2)

kals-ét-o	'sock (MASC. SG.)'	kals-ít-i	'sock (MASC. PL.)'
kant-é-se	'sing (1PL.)'	kant-í-si-mo	'sing (1PL. IMPF. SUBJ.)'
móv-o	'move (1SG.)'	múv-i	'move (2 SG.)'
kantór	'choir singer (MASC. SG.)'	kantúr-i	'choir singer (MASC. PL.)'
órdeno	'order (1SG.)'	úrdini	'order (2SG.)'

- Under Walker's system, indirect licensing results from the following ranking:

(3)

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

- A variety of constraints rule out spreading in the opposite direction. I will ignore this complication.

*Thanks to Abby Kaplan and audiences at the University of Utah for feedback on this work.

- Under Harmonic Grammar (e.g. Legendre et al. 1990), this system introduces pathologies.
  - No Distant Licensing: Indirect licensing across short distances; no harmony over longer distances.

(4) a.

/é-i/	License 5	*Duplicate 4	Ident 2	*H*
a. é-i	-1			-5
☞ b. ́i-i			-1	-2

b.

/ée-i/	License 5	*Duplicate 4	Ident 2	*H*
a. ée-i	-1			-5
b. ́ie-i		-1	-1	-6
☞ c. ́ii-i			-2	-4

c.

/éee-i/	License 5	*Duplicate 4	Ident 2	*H*
☞ a. éee-i	-1			-5
b. ́iee-i		-1	-1	-6
c. ́iii-i			-3	-6

d.

/éeee-i/	License 5	*Duplicate 4	Ident 2	*H*
☞ a. éeee-i	-1			-5
b. ́ieee-i		-1	-1	-6
c. ́iiii-i			-4	-8

- My argument: eliminating this pathology requires a significant reformulation of Positional Licensing.
  - It must be sensitive to intervening positions, not just the licensing position.
  - It must reward spreading instead of penalizing its absence.

2 The Problem

- 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:

(5) $n \cdot w(\text{Ident}) < w(\text{License})$

- No matter the constraints' weights, Ident violations overwhelm License if n is sufficiently large.
- To eliminate the pathology, we must eliminate the asymmetrical assignment of violations by License and Ident.
- Two options:
  - Let License assign violations in proportion to distance, just like Ident.
  - Change Ident so it doesn't assign violations in proportion to distance.
- I will argue for (a version of) the former.

3 Proportional License

3.1 Negative Licensing

(6) 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:

(7)

	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
d. éeee-i vs. íiii-i	-4	-4

- Now spreading always occurs as long as $w(\text{Ident}) < w(\text{License})$.

- New problem: identity licensing is impossible:

(8)

/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, 2002):
  - if $n > m, -2m > -n-m$: (c) wins
  - if $n < m, -2n > -n-m$: (a) wins
- Solution:
  - The penalty for not spreading to the licensor must always overcome IDENT's penalty for doing so. Ensured by $w(\text{LICENSE}) > w(\text{IDENT})$.
  - The penalty for not spreading to intervening positions should *only sometimes* overcome the penalty from IDENT.
  - Therefore, the penalty for skipping intervening positions must be smaller than the penalty for not spreading to the licensor.

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

- Indirect and identity licensing are possible without the no-distant-spreading pathology:

(10) $\frac{w(\text{LICENSE})}{w(\text{IDENT})} > 2 \rightarrow$ indirect

a.

/é-i/	LIC 3	IDENT 1	*H*
a. é-i	-1		-3
☞ b. ǐ-i		-1	-1

b.

/ée-i/	LIC 3	IDENT 1	*H*
a. ée-i	-1.5		-4.5
b. ǐe-i	-.5	-1	-2.5
☞ c. ǐi-i		-2	-2

c.

/éee-i/	LIC 3	IDENT 1	*H*
a. éee-i	-2		-6
b. ǐee-i	-1	-1	-4
☞ c. ǐii-i		-3	-3

d.

/éeee-i/	LIC 3	IDENT 1	*H*
a. éeee-i	-2.5		-7.5
b. ǐeee-i	-1.5	-1	-5.5
☞ c. ǐiii-i		-4	-4

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

a.

/é-i/	LIC 3	IDENT 2	*H*
a. é-i	-1		-3
☞ b. ǐ-i		-1	-2

b.

/ée-i/	LIC 3	IDENT 2	*H*
a. ée-i	-1.5		-4.5
☞ b. ǐe-i	-.5	-1	-3.5
c. ǐi-i		-2	-4

c.

/éee-i/	LIC 3	IDENT 2	*H*
a. éee-i	-2		-6
☞ b. ǐee-i	-1	-1	-5
c. ǐii-i		-3	-6

d.

/éeee-i/	LIC 3	IDENT 2	*H*
a. éeee-i	-2.5		-7.5
☞ b. ǐeee-i	-1.5	-1	-6.5
c. ǐiii-i		-4	-8

Interim Summary: Distance-sensitive LICENSE addresses the No-Distant-Licensing pathology. Reducing the penalty for not targeting intervening positions permits both indirect and identity licensing.

3.2 Positive Licensing

- New pathology: too many solutions (Blumenfeld 2006, Kimper 2011, Wilson 2001)
  - Two ways to remove LICENSE violations:
    1. Spread to intervening vowels (attested)
    2. Delete intervening vowels (unattested)

(12)

/ée-i/	LICENSE 5	IDENT 2	MAX 1	*H*
a. ée-i	-1.5			-7.5
b. íe-i	-.5	-1		-4.5
c. íi-i		-2		-4
☞ d. í-i		-1	-1	-3

- Kimper (2011): positive versions of spreading constraints avoid this problem.

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

(14) $\frac{w(\text{LICENSE})}{w(\text{IDENT})} > 2 \rightarrow$ indirect

a.

/é-i/	LIC 3	IDENT 1	*H*
a. é-i			0
☞ b. í-i	1	-1	2

b.

/ée-i/	LIC 3	IDENT 1	*H*
a. ée-i			0
b. íe-i	1	-1	2
☞ c. íi-i	1.5	-2	2.5

c.

/éee-i/	LIC 3	IDENT 1	*H*
a. éee-i			0
b. íee-i	1	-1	2
☞ c. íii-i	2	-3	3

d.

/éeee-i/	LIC 3	IDENT 1	*H*
a. éeee-i			0
b. íeee-i	1	-1	2
☞ c. íiii-i	2.5	-4	3.5

(15) $1 < \frac{w(\text{LICENSE})}{w(\text{IDENT})} < 2 \rightarrow$ identity

a.

/é-i/	LIC 3	IDENT 2	*H*
a. é-i			0
☞ b. í-i	1	-1	1

b.

/ée-i/	LIC 3	IDENT 2	*H*
a. ée-i			0
☞ b. íe-i	1	-1	1
c. íi-i	1.5	-2	.5

c.

/éee-i/	LIC 3	IDENT 2	*H*
a. éee-i			0
☞ b. íee-i	1	-1	1
c. íii-i	2	-3	0

d.

/éeee-i/	LIC 3	IDENT 2	*H*
a. éeee-i			0
☞ b. íeee-i	1	-1	1
c. íiii-i	2.5	-4	-.5

- Deletion is no longer viable:

(16)

/ée-i/	License 5	Ident 2	Max 1	*H*
a. ée-i				0
b. íe-i	1	-1		3
☞ c. íi-i	1.5	-2		3.5
d. í-i	1	-1	-1	2

- *Duplicate is unnecessary: the choice between identity and indirect licensing is made by other means.

Interim Summary: Positive License inherits the advantages of its negative counterpart and avoids its defects.

4 Gradualness

- The danger of positive constraints: if spreading to one position is good, spreading to many must be better:

(17)

/é-i/	License 5	Ident 1	Dep 1	*H*
a. é-i				0
b. í-i	1	-1		4
c. íiiii-i	3	-1	-4	10
☞ d. etc.				∞

- Gradual theories like Harmonic Serialism avoid this problem (Kimper 2011):
  - Must epenthesize on one step and spread in another step.
  - With no motivation for epenthesis (absent assimilation), we can't reach the point where spreading to it is advantageous:

(18) a.

/é-i/	License 5	Ident 1	Dep 1	*H*
a. é-i				0
☞ b. í-i	1	-1		4

b.

/í-i/	License 5	Ident 1	Dep 1	*H*
☞ a. í-i	1			5
b. íe-i	1		-1	4

4.1 Summary

- Proportional License eliminates the no-distant-spreading pathology.
- Positive License address the too-many-solutions problem.
- Serial HG rules out infinite epenthesis.

5 Categorical Ident

- Strategy here: keep License as originally formulated; change Ident to avoid increasing penalties.
- Serious problems arise

(19) Counting effects: accumulation of markedness violations can compel violation of higher-weighted Ident:

a.

/bed/	Ident(high) 3	*Mid 2	*H*
☞ a. bed		-1	-2
b. bid	-1		-3

b.

/bede/	Ident(high) 3	*Mid 2	*H*
a. bede		-2	-4
b. bide	-1	-1	-5
☞ c. bidi	-1		-3

6 Conclusion

- The asymmetrical assessment of violations between License and Ident leads to pathological predictions in HG.
- The only viable approach is manipulation of License.
- Even closely related theories like OT and HG can require very different constraint sets.
- Licensing-based phenomena provide evidence for positive constraints and Serial HG.
- Positional Licensing revolves around the enhanced perceptual salience of strong positions. But paying attention to weak positions that get caught up in licensing-driven assimilation reveals much about the Positional Licensing formalism.

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