

Positional Faithfulness in Harmonic Grammar¹

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LSA 2014, January 2-5, 2014

1. Introduction

- Jesney (2011a): Positional Licensing (e.g. Walker 2011) is more powerful in Harmonic Grammar (HG) than in OT
- Only in HG can Positional Licensing produce licensing in multiple contexts (LMC)
 - Coronals in Tamil can appear in onsets (1) and in initial-syllable codas (1a, b)
 - They assimilate to a following onset elsewhere (2)

(1)	a.	/tunpam/	[tun .bã]	‘sorrow’
	b.	/nanpan/	[n̩n̩ .bã]	‘friend’
	c.	/kaʃan/	[ka. ʃ ẽ]	‘debt (NOM)’
(2)	a.	/pasan̩ + ka:l/	[pa.sɜn̩. g ɜ]	‘children’
	b.	/kappal + ʃaan/	[kap.pɜl. ʃ ãã]	‘ship (EMPH.)’

(Christdas 1998; Wiltshire 1995)

- Jesney (2011a) shows that a Positional Licensing analysis of these facts is possible only in HG
- In OT, LMC requires Positional Faithfulness (Beckman 1999)
- Jesney (2011a, 2011c) suggests that Positional Licensing may entirely replace Positional Faithfulness in HG
- This would be welcome
 - Positional Faithfulness makes incorrect typological predictions (Jesney 2011b, 2011c)
 - Positional Faithfulness and Positional Licensing overlap (Kaplan 2013, Jesney 2011a)
 - Our argument is that Positional Faithfulness is still necessary, and Tamil shows this
 - Using only Positional Licensing, we can account for the behavior of coronals in Tamil, but not non-coronals
- Outline of talk:
 - Assimilation in Tamil
 - Positional Licensing analysis of coronals
 - Failure of OT to do Positional Licensing-only analysis of coronals
 - Jesney’s analysis of coronals
 - Non-coronal assimilation
 - Failure of a Positional Licensing-only analysis of non-coronals
 - Our analysis with Positional Faithfulness
 - Possible alternative solutions and their issues
 - Summary

¹ Thank you to Rachel Hayes-Harb, Abby Kaplan, and audiences at NELS 44, Phonology 2013, and the University of Utah for their helpful feedback on earlier versions of this work.

2. Assimilation in Tamil

- Coronals in Tamil can appear in onsets (3) and in initial-syllable codas (3b, c)
- They assimilate to a following onset elsewhere (4)

(3)	a.	/tunpam/	[tun .bã]	‘sorrow’
	b.	/munṣiy/	[mun. ṣi]	‘teacher’
	c.	/nanpan/	[n̪aṅ .bã]	‘friend’
	d.	/laapam/	[laa.bã]	‘grain’
	e.	/kaṭan/	[ka. ṭē]	‘debt (NOM)’
(4)	a.	/pasaṅ + ka:l/	[pa.sɔṅ. gɔ]	‘children’
	b.	/kappal + ṭaan/	[kap.pɔl. ṭã]	‘ship (EMPH.)’

(Christdas 1998; Wiltshire 1995)

- Non-coronals are allowed in onsets (5)
- Non-coronal codas are always place-linked to a following onset (5), (6)
- Non-coronal codas that are not place-linked are not allowed (7)

(5)	a.	/laapam/	[laa. bã]	‘grain’
	b.	/koopam/	[koo. vã]	‘anger’
	c.	/rompav/	[rom. bɔ]	‘much’
	d.	/paṅk/	[paṅ. gʷ]	‘share’
	e.	/kamp/	[kam. bʷ]	‘stick’
	f.	/kappal/	[kap. pɔl]	‘ship’
	g.	/pakkam/	[pak. kã]	‘side’

(6)	a.	/maram + ka/	[ma.rɔṅ. gɔ]	‘trees’
	b.	/maram + ṭaan/	[ma.rɔṅ. ṭã]	‘tree (EMPH.)’

(Christdas 1998)

(7)	a.	* tum .tã	b.	* muṅ .ṣi	c.	* n̪av .tã
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- LMC
 - [+coronal] is licensed by onsets and by initial syllables
- Summary:
 - Outside the initial syllable, all codas and onsets share POA
 - Codas always assimilate to onsets
 - In the initial syllable, coronal codas are not required to share POA with the following onset

3. Analyzing Coronals with Only Positional Licensing

- The licensing constraints needed to account for coronals in Tamil are:
 - LICENSE(place, Onset) – place features are licensed by onsets
 - This captures that fact that in general codas assimilate to onsets

- LICENSE(coronal, σ_1) – coronal place features are licensed on sonorants in the initial syllable²
 - This captures the fact that [+coronal] sonorants in initial syllable codas do not assimilate
- In OT (Jesney 2011a):
 - Both licensing constraints must outrank faithfulness, otherwise they have no effect
- But this results in coronals surfacing only in the onset of the initial syllable because only there do they satisfy both licensing constraints

(8)

a. /tunpam/	LIC(place, Onset)	LIC(coronal, σ_1)	IDENT(place)
☞ i. tun.bã	*!		
● ii. tum.bã			*
b. /kaʦan/			
☞ i. ka.dẽ		*!	
● ii. ka.ʔẽ			*
c. /laapam/			
☞ i. laa.bã			
ii. ʔaa.bã			*!

- In OT the ranking that gives licensing power predicts that licensing only occurs at the intersection of the two licensing constraints –initial syllable onsets
- The generalization is that coronals are allowed as long as they don't violate both licensing constraints; must satisfy at least one of them
 - Harmonic Grammar allows this
- Jesney (2011a) shows that the licensing analysis that fails in OT works in HG:
 - $w(\text{IDENT}) > w(\text{LICENSE}(\text{place, Onset})), w(\text{LICENSE}(\text{coronal, } \sigma_1))$: faithfulness wins when one licensing constraint is violated.
 - $w(\text{IDENT}) < w(\text{LICENSE}(\text{place, Onset})) + w(\text{LICENSE}(\text{coronal, } \sigma_1))$: violating both licensing constraints triggers unfaithfulness.
- Under these conditions, coronals are preserved in onsets and initial syllables (9) and assimilate elsewhere (10)

(9)

a. /tunpam/	IDENT(place)	LIC(place, Onset)	LIC(coronal, σ_1)	H
	3	2	2	
☞ i. tun.bã		-1		-2
ii. tum.bã	-1			-3
b. /kaʦan/				
☞ i. ka.dẽ			-1	-2
ii. ka.ʔẽ	-1			-3

²This is a simplification of Jesney's constraint.

(10)	/kappal + ʈaan/	IDENT(place) 3	LIC(place, Onset) 2	LIC(coronal, σ_1) 2	<i>H</i>
	☞ a. kap.pɜl.ʈãã	-1			-3
	b. kap.pɜl.ʈãã		-1	-1	-4

- Summary
 - OT: Positional Licensing permits coronals only in initial syllable onsets (at the intersection of two licensing positions)
 - HG: Positional Licensing gangs up to force assimilation in codas outside initial syllable; IDENT preserves coronals in onsets and initial-syllable codas

4. Our Argument: The Necessity of Positional Faithfulness – Non-Coronals in Tamil

- Unlike coronals, non-coronals assimilate in all codas
- Non-coronals are allowed in onsets

(11)	a.	/laapam/	[laa.bã]	‘grain’
	b.	/koopam/	[koo.vã]	‘anger’
	c.	/rompav/	[rom.bɜ]	‘much’
	d.	/paŋk/	[paŋ.gu]	‘share’
	e.	/kamp/	[kam.bu]	‘stick’
	f.	/kappal/	[kap.pɜl]	‘ship’
	g.	/pakkam/	[pak.kã]	‘side’

(12)	a.	/maram + ka/	[ma.rɜŋ.gɜ]	‘trees’
	b.	/maram + ʈaan/	[ma.rɜŋ.ɟã]	‘tree (EMPH)’

(Christdas 1998)

(13)	a.	*tum.tã	b.	*muŋ.ɟɪ	c.	ɳav.tã
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- The LMC weights for coronals are incompatible with these facts
- The LMC analysis predicts that in Tamil only coronals will assimilate

(14)	/maram + ka/	IDENT(place) 3	LIC(place, Onset) 2	LIC(coronal, σ_1) 2	<i>H</i>
	☞ a. ma.rɜŋ.gɜ	-1			-3
	☛ b. ma.rɜm.gɜ		-1		-2

- LICENSE(place, Onset) cannot compel assimilation on its own
- With non-coronals, LICENSE(coronal, σ_1) is moot and LICENSE(place, Onset) cannot overcome the IDENT violation on its own as its weight is lower than that of IDENT.
- For non-coronals, the licensing constraint must outweigh the IDENT constraint, but this is incompatible with the analysis of coronals, as (9) shows

- **Solution:** allow LICENSE(place, Onset) to trigger assimilation everywhere and adopt another constraint to block assimilation of coronals in initial syllable
- Assimilation of non-coronals is motivated by the licensing constraint...

(15)

/maram + ka/	IDENT(cor) - σ_1 4	LIC(place, Onset) 3	IDENT(place) 2	H
☞ a. ma.rɔŋ.gɔ			-1	-2
b. ma.rɔm.gɔ		-1		-3

- While the Positional Faithfulness constraint preserves coronals in initial syllable codas and onsets

(16)

a. /tunpam/	IDENT(cor) - σ_1 4	LIC(place, Onset) 2	IDENT(place) 2	H
☞ i. tun.bã		-1		-2
ii. tum.bã	-1		-1	-6
b. /kaʃan/				
☞ i. ka.ʤẽ				0
ii. ka.ʔẽ			-1	-2

- With the new constraint, LICENSE(coronal, σ_1) is no longer necessary
- We have replicated Beckman’s analysis in regards to initial syllable codas
- Beckman (1999) uses Positional Faithfulness in OT to analyze Tamil LMC
 - IDENT-Onset(Place) » *DORSAL, *LABIAL, *CORONAL preserves all onsets
 - *DORSAL, *LABIAL » IDENT- σ_1 (Place) » *CORONAL preserves only coronals in the initial syllable

(17)

a. /tunpam/	ID-Onset(Place)	*DOR	*LAB	ID- σ_1 (Place)	*COR	ID(Place)
☞ i. tun.bã			*		**	
ii. tum.bã			**!	*	*	*
iii. tun.dã	*!				***	*
b. /maram + ʃaan/						
☞ i. ma.rɔŋ.ʤã			*		***	*
ii. na.rɔŋ.ʤã				*!	***	**
iii. ma.rɔm.bã	*!		***		*	

- Summary:
 - Whether in OT or HG, Positional Faithfulness is necessary to preserve initial syllable coronal codas
 - Motivation for assimilation can take the form of either licensing (our analysis) or markedness (Beckman’s)

5. Direction of Assimilation

- Positional Licensing does not dictate the direction of assimilation

(18)

/maram + ka/	LIC(place, Onset) 3	IDENT(Place) 2	<i>H</i>
a. ma.r3m.g3	-1		-3
☞ b. ma.r3ŋ.g3		-1	-2
● c. ma.r3m.b3		-1	-2

- This is typically handled by Positional Faithfulness
- Jesney (2011c) proposes modifying Positional Licensing constraints to dictate direction of assimilation
 - This does not help with the issue of non-coronals
 - As (14) shows, the licensing constraint that motivates spreading is not weighted heavily enough to motivate non-coronal assimilation, regardless of directionality
 - If Positional Faithfulness is necessary for other reasons, we can use it to control directionality and there is no need to build it into licensing
- Directional licensing also obscures the central aim of licensing, which is to have weak positions share features with strong ones, regardless of how that configuration is achieved
- If directionality is a parameter within Positional Licensing, we predict that left-to-right assimilation – i.e. onsets assimilating to codas – should be attested, yet it is not (McCarthy 2008)
 - The only way to avoid this is to build positional asymmetries into Positional Licensing: instead of specifying right-to-left assimilation, we specify that onsets can't assimilate.
 - That reintroduces Positional Faithfulness in a different guise

6. Other Possible Solutions

6.1 Licensing for Non-Coronals

- Under the LMC analysis, LICENSE(place, Onset) can't trigger assimilation of non-coronals.
- We could adopt another constraint that does this work: LICENSE(non-coronal, Onset)

(19)

/maram + ka/	LIC(non-cor, Onset) 4	IDENT(place) 3	LIC(place, Onset) 2	LIC(coronal, σ_1) 2	<i>H</i>
☞ a. ma.r3ŋ.g3		-1		-1	-5
b. ma.r3m.g3	-1		-1	-1	-8

- Solves the issue but it misses the generalization
 - Outside the initial syllable, coronality is irrelevant
 - ✧ Regardless of specification for $[\pm\text{coronal}]$, onsets are preserved and codas assimilate

- Posits that the two processes are unrelated and motivated by different constraints:
 - ✧ Coronal Assimilation - LICENSE(place, Onset) and LICENSE(coronal, σ_1)
 - ✧ Non-Coronal Assimilation – LICENSE(non-coronal, Onset)

6.2 Featural Markedness

- Add feature markedness constraints – *LABIAL, *DORSAL
 - Feature markedness constraint and LICENSE(place, onset) can gang up on IDENT
 - Licensing constraint must indicate directionality (\leftarrow), as in Jesney (2011c)

(20)

/maram + ka/	IDENT(place)	LIC(place, Onset) \leftarrow	LIC(coronal, σ_1)	*LAB	*DOR	<i>H</i>
	3	2	2	2	2	
☞ a. ma.r3ŋ.g3	-1				-1	-5
b. ma.r3m.g3		-1		-1	-1	-6
c. ma.r3m.b3	-1	-1		-1		-7

- This gives up on a unified account of coda assimilation
- Instead it treats the process of assimilation as three different processes motivated by three different constraints - *LABIAL, *DORSAL, and LICENSE(coronal, σ_1), which all bolster LICENSE(place, Onset)
- Treating these as three different processes predicts that they can operate independently of one another
- Predicts a language where just one place feature assimilates in codas while others are preserved
- This ignores the fact that it is not specifically [+labial] and [+dorsal] that are prohibited in codas, but place features in general
- These alternatives sacrifice a unified, elegant account of a positional phenomenon for the sake of doing away with Positional Faithfulness

7. Summary

- Positional Licensing is in fact more powerful in HG than in OT
 - It can do LMC, just as Jesney claims, but it is simply not the right approach to Tamil
- But this doesn't mean it can fully replace Positional Faithfulness
- Positional Licensing is insufficient for LMC in Tamil because part of that system reflects a more general licensing pattern in the language
- LMC with Positional Licensing works because the two licensing constraints can gang up on faithfulness
- But in Tamil, one licensing constraint must also exert influence independently of the other one. The LMC schema is designed to preclude this

8. Where does this leave us?

- Both Positional Faithfulness and Positional Licensing are necessary
- HG may have advantages over OT (including LMC), but eliminating the need for Positional Faithfulness is not one of them
- In fact, the situation in HG may be worse than that in OT
 - Because of LMC, Positional Faithfulness and Positional Licensing overlap to a greater degree in HG than in OT
- More work is needed to define the roles of Positional Faithfulness and Positional Licensing

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