Winter January 21, 2014

Prestressing suffixes in Catalan. A challenge for OT-CC with Optimal Interleaving? (second part)

Clàudia Pons-Moll

Tableaux

(33) *Stress assignment precedes PS affixation AND Vowel lowering precedes PS affixation*

/ROOT+PS-AFFIX/	Prec [DEP(Stress), PS-affixation]	Prec [IDENT(ATR), PS-affixation]	STW	DEP(stress)	IDENT(ATR)	*é, *ó	*ɛ́, *ɔ́
a. <esf[e]r-affix, esF[e]R-affix, esF[e]R-ic, esf[ɛ]r-ic> LUMSeq: <DEP(stress), INSERT-PS, IDENT(ATR)>		W*(!)	*	*	*		*
b. <esf[e]r-affix, esf[e]r-ic, esf[e]RI-C, esF[ə]Ri-C> LUMSeq: <INSERT-PS, DEP(Stress)>	W*(!)		L	*	L		L
c. <esf[e]r-affix, esF[e]R-affix, esF[e]R-ic> LUMSeq: <DEP(Stress), INSERT-PS>		W*(!)	*	*	L	W*	L
?☞d. **<esfer-affix, esF[e]R-affix, esF[ɛ]R-affix, esf[ɛ]r-ic>** LUMSeq: <DEP(stress), IDENT(ATR), INSERT-PS>			*	*	*		*

Problem: candidate chains *a* and *d* are <u>not</u> harmonically improving, given IDENT(ATR) >> *é, *ó (see Appendix B).

(34) *Stress assignment precedes INFL affixation*

/ROOT+INFL-AFFIX/	Prec [Dep(Stress), INFL-affixation]	STW	Dep(stress)	Ident(ATR)	*é, *ó	*ɛ́, *ɔ́
a. <esf[e]r-affix, esF[e]R-affix, esF[e]R-a, esF[ɛ]R-a> <Dep(Stress), INSERT-INFL, Ident(ATR)>			*	W*(!)	L	W*
☞ b. **<esf[e]r-affix, esF[e]R-affix, esF[e]R-a>** <Dep(Stress), INSERT-INFL>			*		*	
c. <esf[e]r-affix, esf[e]r-a, esf[e]RA> < INSERT-INFL, Dep(Stress)>	W*(!)		*		*	
d. <esf[e]r-affix, esf[e]r-a, esf[e]RA, esf[ə]RA> < INSERT-INFL, Dep(Stress)>	W*(!)		*		L	

Remaining problem (not crucial here): candidate chain *a* is not harmonically improving, given IDENT(ATR) >> *é, *ó (see Appendix-B).

(35) *Stress assignment precedes PS affixation AND Stress Assignment precedes Vowel lowering*

/ROOT+PS-AFFIX/	Prec [DEP(Stress), PS-affixation]	Prec [DEP-Stress, IDENT(ATR)]	STW	DEP(stress)	IDENT(ATR)	*é, *ó	*ɛ́, *ɔ́
a. <esf[e]r-affix, esF[e]R-affix, esF[e]R-ic, esf[ɛ]r-ic> LUMSeq: <DEP(stress), INSERT-PS, IDENT(ATR)>		OK	*	*	***!**		*
b. <esf[e]r-affix, esf[e]r-ic, esf[e]RI-C, esF[ə]Ri-C> LUMSeq: <INSERT-PS, DEP(Stress)>	*!	OK		*			
💣 c. <esf[e]r-affix, esF[e]R-affix, esF[e]R-ic> LUMSeq: <DEP(Stress), INSERT-PS>		OK (vacuously satisfied)	*	*		*	
☹ d. **<esfer-affix, esF[e]R-affix, esF[ɛ]R-affix, esf[ɛ]r-ic>** LUMSeq: <DEP(stress), IDENT(ATR), INSERT-PS>		OK	*	*	***!**		*

(36) *Stress assignment precedes PS affixation AND Vowel lowering precedes Stress Assignment precedes*

/ROOT+PS-AFFIX/	Prec [DEP(Stress), PS-affixation]	Prec [IDENT(ATR), DEP(Stress)]	STW	DEP(stress)	IDENT(ATR)	*é, *ó	*ɛ, *ɔ
a. <esf[e]r-affix, esF[e]R-affix, esF[e]R-ic, esf[ɛ]r-ic> LUMSeq: <DEP(stress), INSERT-PS, IDENT(ATR)>		*!	*	*	*!		*
b. <esf[e]r-affix, esf[e]r-ic, esf[e]RI-C, esF[ə]Ri-C> LUMSeq: <INSERT-PS, DEP(Stress)>	*!	OK (vacuously satisfied)		*			
💣 c. <esf[e]r-affix, esF[e]R-affix, esF[e]R-ic> LUMSeq: <DEP(Stress), INSERT-PS>		OK (vacuously satisfied)	*	*		*	
☹ d. **<esfer-affix, esF[e]R-affix, esF[ɛ]R-affix, esf[ɛ]r-ic>** LUMSeq: <DEP(stress), IDENT(ATR), INSERT-PS>		*!	*	*	*!		*

Appendix-A: Data

(10a); p. 5: more data

est[ɛ́]r**i**l	mat[ɛ́]r**i**a	el[ɔ́]gi	mem[ɔ́]r**i**a
d[ɛ́]b**i**l	Val[ɛ́]nc**i**a	[ɔ́]l**i**	n[ɔ́]**i**a
inc[ɛ́]nd**i**		[ɔ́]rd**i**	b[ɔ́]**i**a
n[ɛ́]c**i**		p[ɔ́]di	
mist[ɛ́]r**i**			
in[ɛ́]d**i**t			
obs[ɛ́]qu**i**			

(Data from Mascaró 2008, 2011; Wheeler 2005: 37-52, *GIEC*)

(10b); p. 5: more data
aster[ɔ́]ide
b[ɔ́]ira
cof[ɔ́]i
est[ɔ́]ic
(Data from Mascaró 2008, 2011; Wheeler 2005: 37-52, *GIEC*)

(13); p. 7: more data

[ɛ́]ter	aut[ɔ́]nom	[ɛ́]mfasi	d[ɔ́]mino
	ll[ɔ́]brec	etc[ɛ́]tera	hip[ɔ́]tesi
	hidr[ɔ́]gen	g[ɛ́]nere	n[ɔ́]mada
	pr[ɔ́]leg	g[ɛ́]nesi	n[ɔ́]mina
	pr[ɔ́]sper	m[ɛ́]tode	[ɔ́]rfena
		r[ɛ́]plica	pr[ɔ́]rroga
			s[ɔ́]mines
			pr[ɔ́]stata

(Data from Fabra 1912: 459-460; Mascaró 2011; *GIEC*; see Appendix)

Appendix-B: Theoretical framework

- OPTIMAL INTERLEAVING (Wolf 2008). The basics (simplified).

a) Morphological spell-out (morpheme realization) occurs in the phonological component of the grammar.
b) A correspondence relation is established between morphemes and morphs. This correspondence relation is regularized through faithfulness constraints of the type MAX-M and DEP-M.

c) Morpheme realization is, thus, one of the operations that GEN performs, so derivational steps that realize morphemes are interleaved among steps that perform phonological operations.
d) Concomitantly, constraints on morpheme realization are interleaved among phonological constraints in the ranking that EVAL applies.
e) Spell-out can occur at any location in the phonological representation.

- CANDIDATE CHAINS (McCarthy 2007). The basics (simplified).

  a) A candidate chain associated with an input /in/ in a language with the constraint hierarchy H is an ordered *n*-tuple of forms C = <f0, f1, ..., fn> that meets the following 3 conditions:

- **Faithful initial form**: f0 is a faithful parse of /in/. (Specifically, it's the faithful parse of /in/ that's most harmonic according to H.)
- **Gradual divergence**: In every pair of immediately successive forms in C, <..., fi, fi+1, ...> (0≤i<n), fi+1 has all of fi's unfaithful mappings, plus one.
- **Harmonic improvement**: In every pair of immediately successive forms in C, <..., f_i, f_{i+1}, ...> (0≤i<n), f_{i+1} is more harmonic than f_i according to $EVAL_H$.

→ There are various alternative ways of formulating the gradual divergence requirement (*i.e.* in terms of faithfulness, phonological operations, or even perceptual similarity). In this paper, in terms of faithfulness and operations.

→ Important precursor to OT-CC: Prince & Smolensky (2004: 94-95): "some general procedure (Do-α) is allowed to make a certain single modification to the input, producing the candidate set of all possible outcomes of such modification. This is then evaluated; and the process continues with the output so determined… There are constraints inherent in the limitation to a single operation and in the requirement that each operation in the sequence improve Harmony."

BASIC REFERENCES

BONET, E.; LLORET, M.R. (1998): Fonologia Catalana. Barcelona: Ariel.

FABRA, P. (1912): *Gramática de la lengua catalana.* Barcelona, L'Avenç.

FABRA, P. (1956): *Gramàtica catalana.* Barcelona, Teide.

GIEC = *Gramàtica de la llengua catalana (IEC)* [in progress, ms.]

KAVITSKAYA, D.; STAROVEROV, P. (2010): «When an interaction is both opaque and transparent: the paradox of fed counterfeeding». *Phonology* 27. P. 255-288.

KIPARSKY, P. (1973) "Phonological representations." In O. Fujimura (ed.) *Three Dimensions of Linguistic Theory.* Tokyo, TEC, 3–136.

MASCARÓ, J. (1976): *Catalan phonology and the phonological cycle*. PhD dissertation, MIT.

MASCARÓ, J. (1985): *Morfologia catalana*. Barcelona: Enciclopèdia Catalana.

MASCARÓ, J. (2003): «Comparative markedness and derived environments». *Theoretical linguistics*, 29. p. 113-122.

MASCARÓ, J. (2008): «La distribució de les vocals mitjanes tòniques en català central». *Caplletra*, 44. p. 75-102.

MASCARÓ, J. (2011): «Efectes accentuals i sil·làbics sobre la distribució de les vocals mitjanes en català central». A: *Noves aproximacions a la fonologia i la morfologia del català. Volum d'homenatge a Max W. Wheeler.* (eds) Lloret, M. R., i Clàudia Pons-Moll, p. 405-426. Alacant: Institut Interuniversitari de Filologia Valenciana.

MCCARTHY, J. J. (2003): «Comparative markedness and derived environments». *Theoretical linguistics*, 29. pp. 1-51.

PRINCE, A.; SMOLENSKY, P. (2004): *Optimality Theory: Constraint Interaction in Generative Grammar*. Malden, MA, and Oxford, UK: Blackwell. [Revision of 1993 technical report, Rutgers University Center for Cognitive Science.]

MCCARTHY, J. J. (2007): Hidden Generalizations. Phonological Opacity in Optimality Theory. London: Equinox.

WHEELER, M. (2005): *The phonology of Catalan*. Oxford: Oxford University Press.

WOLF, M. (2008): *Optimal interleaving: serial phonology-morphology interaction in a constraint-based model*. University of Massachusetts, Amherst, PhD dissertation.