

HARMONY IN A NON-HARMONIZING LANGUAGE

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I. BASIC FACTS ABOUT THE CATALAN VOWEL SYSTEM

(1) Catalan has 7 stressed vowels and 3 unstressed vowels (vowel reduction):

	NARROW SYSTEM		
<i>Stressed vowels</i>	í	é é á	ó ó ú
<i>Unstressed vowels</i>	i	ə	u

(2) BUT [e], [o] (*[a]) can exceptionally appear in unstressed position, especially in *new words* (*new words*: direct loans, orthographic loans, acronyms, truncated forms...): (Mascaró 2002)

classe [á e] ‘class’	càtedra [á e ə] ‘professorship’
Benítez [e í e] (Spanish last name)	caos [á o] ‘chaos’
catàstrofe [ə á o e] ‘catastrophe’	Bofill [o í] (Catalan last name)
Wagner, Àlex(andre) : [á e]	claxon ‘hooter’, saxo(fon) [á o]
col·le(gi) [ó e] ‘school’	Llore(nça) ([ʎurénsə]) [ú e], [ó e] ‘Lawrence’
Sòcrates [ó ə e]	Kleenex : [í e]
Nixon [í o]	Tefal [e á]
bonsai [o á]	

	EXTENDED SYSTEM				
<i>Stressed vowels</i>	í	é é	á	ó ó	ú
<i>Unstressed vowels</i>	i	a	ə	o	u

(3) The extended system expands the range of vowel co-occurrences, and makes available pairs of mid vowels differing only in [ATR]:

[-ATR]:	ε o (Mid)	a (Non-Mid)
[+ATR]:	e o (Mid)	ə i u (Non-Mid)

EXPECTED MID VOWEL CO-OCCURRENCES	
<i>The stressed vowel</i>	é é ó ó
<i>The unstressed vowels</i>	e o

II. HARMONY IN A NON-HARMONIZING LANGUAGE

(4) Catalan has no vowel harmony within the narrow system:

High:	nedi [é i]	‘I swim (subj.)’	óssos [ó u]	‘bears’
Back, Round:	usi [ú i]	‘I use (subj.)’	peça [é ə]	‘piece’
Low:	casa [á ə]	‘house’		
ATR:	tesi [é i]	‘thesis’	poso [ó u]	‘I put’

(5) **BUT new words do exhibit harmony:**

[é e]	*[é e]	Ellen , repe(tit) ‘repeated’, EFE (acronym)
[ó o]	*[ó o]	Boston , logo(tip) ‘logotype’, COBOL
[é o]	*[é o]	Nespor , euro , UNESCO
[ó e]	*[ó e]	Opel , poster , profe(ssor) , PSOE (acronym)

(6) This is harmony, not just direct borrowing from Spanish:

see examples like	vedette [e é]	in (11)
or	Gòlgota [ó o ə]	in (14)

III. NEW-WORD PHONOLOGY

(7) They tend to be exceptions to vowel reduction (see examples in (2)).

(8) Stressed mid vowels tend to be [-ATR] in new words (Fabra 1912, Badia i Margarit 1973):

[é]	MEC , Sebas(tià) , Betty , red , jet , xef , sketch , DEP(ENDENCE)
[ó]	ONU , Sofi(a) , Tom , xotis (Spanish dance), top , poney , King-Kong , CONT(IGUITY)

(9) Vowel harmony wrt ATR only when unstressed vowels are exceptions to vowel reduction (i.e. in the extended system):

Ellen	[é ə]	or	[é e]	*[é e]	
Boston	[ó u]	or	[ó o]	*[ó o]	
euro	[é u]	or	[é o]	*[é o]	
poster	[ó ə]	or	[ó e]	*[ó e]	(see also Cabré Monné 2002)

IV. DOMAIN OF ATR HARMONY IN MID VOWELS

(10) The (syllabic) trochaic foot ([¹V V]):

[é e]	Becquer, tele(visi ^o), IESE
[ó e]	open, col·le(gi), PSOE
[ó o]	Otto, opo(sic)ion's 'public competition for a post', Pinotxo
[é o]	Lego, magneto(scopi), record

(11) No ATR harmony in iambic structures ([V ¹V]):

vedette	[e é]	Gogol	[o ó]	bobò	'sweets'	[o ó]
Netol	[e ó]	Gauguin	[o é]	Everest		[e e é]

V. ANALYSIS (Span Theory, McCarthy 2004)

(12) Spans are harmony domains. Every span has a head (underlined):

- *A-SPAN (ATR): Favours widest harmony spans (e.g. (b^ét^é) > (b^é)(t^é)).
- HEAD ([-hi, -lo], ATR): Requires that every [-hi, -lo] segment (the trigger) head an ATR (the harmonic feature) span.
- SPHDR (ATR): Directionality. The head of the span is on the right edge.
- FTHHDS (ATR): Every ATR segment in the input heads a span.

(13) Inputs with underspecified mid vowels (E O): ¹V = [-high, -low, -back, -round]
How do we determine its ATR value?

/bEti/	IDENT _V	*A-SPAN (ATR)	[+STRESS] → [-ATR]	HEAD ([-hi, -lo], ATR)	SPHDR (ATR)	FTHHDS (ATR)
☞ (b ^é)(t ⁱ)		*				
(b ^é)(t ⁱ)		*	*!			
(b ^é t ^é)	*!		*	*		
/bEte/						
☞ (b ^é t ^é)			*	*		
(b ^é)(t ^é)		*!				
(b ^é t ^é)	*!			*	*	*

(14) No ATR harmony in proparoxytones (PPO); *but* PPO always have [-ATR] stressed vowels (except in very few cases):

Gòlgota [ɔ̃ o ə] Berenson [é e o]
hipèrbole [é o e] Andròmeda [ɔ̃ e ə]

(cf. mètode [é u ə], èxtasi [é ə i], òliba [ɔ̃ i ə], òmnibus [ɔ̃ i u])

/gOlgotə/	[+STRESS] _{PPO} → [-ATR]	IDENTF _V	*A-SPAN (ATR)	[+STRESS] → [-ATR]	HEAD ([-hi, -lo], ATR)
(gólgo)(tə)		*!	*		*
(gólgo)(tə)	*!		*	*	*
☞ (gól)(gotə)			*		*

(15) **Variation:** In some varieties, harmony only if agreement in backness/roundness:

[ó e] col·le(gi), PSOE *and* Opel, Nobel, trolley [ɔ̃ e]
[é o] Lego, magneto(scopi) *and* Belcor, Errol, record [é o]

BUT: **Otto, opo(sic)ions, Pinotxo** [ó o] (*[ɔ̃ o])
Becquer, tele(visió), IESE [é e] (*[é e])

VI. CONCLUSIONS AND FURTHER RESEARCH

- Previous studies have shown that under special circumstances (reduplication, allomorphy) constraints that are normally inactive become active (TETU).
- In Catalan a similar case of underdetermination arises in new words when the value of ATR for stressed vowels is unknown. Here low ranked harmony constraints become active since faithfulness to ATR in mid vowel cannot play a role.
- What has triggered this situation historically?
- To what extent the situation described is the one to be expected? Notice that one of the properties is expected, namely directionality, since progressive harmony is excluded by the impossibility of having unstressed [ɛ] and [ɔ̃].
- How do we capture the fact that harmony does not affect oxytones (cf. the examples in (11))?

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