Theaching phonology: the state of the art
27mfm fringe workshop

From data to theory in descriptive courses

Eulàlia Bonet (UAB) & Clàudia Pons-Moll (UB)

Outline

1. Introduction and goals
2. Basic concepts through data: voicing phenomena
3. Dialectal variation in vowel reduction: (universal) constraint (re)rankings
4. Lack of alternations and the theories of UR
5. SPE- and OT-based approaches in class: advantages and drawbacks

---

1. Introduction and goals

- Ultimate goal of our courses: that students get a good grasp of the overall phonological system of Catalan (descriptive objective).
- Complementary goal: that students become acquainted with fundamental concepts and theoretical models at an introductory level (theoretical objective).

2. Basic concepts through data: voicing phenomena

2.1 Phonological processes related to voicing

Fundamental notions can be illustrated easily through processes involving a single feature, [voice].

(1) **Final obstruent devocing**: in word-final position all obstruents are devoiced.

(2) **Voicing assimilation**: all obstruents in coda position agree in voicing with the following consonant.

(3) **Voicing of fricatives and affricates**: fricatives and affricates become voiced in word-final position when the following word starts with a vowel.

2.2 Basic concepts

Contrast: can be illustrated with minimal pairs involving obstruents in word-internal intervocalic position:

(4) *soga* [sɔ́ɣə] 'rope' vs. *soca* [sɔ́kə] 'trunk'
casa [kázə] 'house' vs. *caça* [kásə] 'hunt'

Neutralization: can be illustrated comparing alternations between word-internal intervocalic obstruents with word-final voiceless obstruents, which are subject to final obstruent devoicing:

(5)

V__V		__##	
potet	[putét]	*pot* [pɔ́t]	'small pot' / 'pot'
poden	[pɔ́ðən]	*pot* [pɔ́t]	'(they) can' / '(s/he) can'
casos	[kázus]	*cas* [kás]	'cases' / 'case'
cossos	[kɔ́sus]	*cos* [kɔ́s]	'bodies' / 'body'

The adaptation of loanwords and errors when speaking languages like English can also be used to show Final devoicing: *club* [klúp], *led* [lét], *bulldog* [buldɔ́k].

Underlying representation: examples like the ones in (5) can be used to introduce the concept.

(6) /pɔt/ 'pot' vs. /pɔd/ '(s/he) can'
/kɔs/ 'body' vs. /kaz/ 'case'

Lack of alternation: is illustrated with examples where one or more voicing-related processes apply systematically.

(7) a. *examen* [əgzámən] 'exam': voicing assimilation
Also illustrates two consonants represented by one letter.
b. *después* [dəs$_1$prés$_2$] 'afterwards': voicing assimilation (s$_1$) and final devoicing (s$_2$)
Adverb that cannot be the base for a derived word.
c. *desanimar* [dəzənimá] 'discourage': voicing of fricatives and affricates
Prefix+base. This process is also applied in Spanish as L2 in this context.

Difference between lexical and postlexical processes

Lexical processes: can be illustrated with final devoicing:

(8) *pot*: /pɔd/ → [pɔ́t] cf. *pot anar* [pɔ̀tənáˈ] '(s/he) can go'

Postlexical processes: two kinds:

a. Voicing of fricatives and affricates affects consonants only when they are in word- or prefix-final position (sandhi phenomenon):

(9) *cos esbelt* [kɔ́**z**əzβɛ́l] 'slender body'
cas inquietant [kà**z**iŋkjətán] 'disturbing case'

Cf. *cossos* [kɔ́**s**us] 'bodies'

b. Voicing assimilation applies across the board:

(10)

acte [á**k**tə] 'act'	*poc temps* [pɔ**k**téms] 'little time'
maragda [mərá**g**də] 'emerald'	*poc domini* [pɔ̀**g**dumíni] 'little command'
escolta [ə**s**kóltə] 'listens to'	*és car* [e**s**kár] 'it's expensive'
esgota [ə**z**ɣótə] 'exhausts'	*és barat* [è**z**βərát] 'it's cheap'

Students find it difficult to distinguish both types of postlexical processes, when faced with fricatives.

3. Dialectal variation in vowel reduction: (universal) constraint (re)rankings

- Our students are expected to learn the stressed and unstressed vowel systems in Catalan dialects, as well as their different types of vowel reduction.
- In Catalan, there is a significant amount of variation in this respect.
- Vowel reduction in Catalan is, thus, useful to introduce and illustrate OT universal constraint rankings (on vowels in unstressed position) as well as constraint re-ranking across varieties.

3.1. Varieties A (most Eastern varieties)

(11)

/e/ /ɛ/ /a/ → [ə]

me̲s [mé̲s] ‘month’~ *me̲set* [mə̲zét] ‘month.DIM’

me̲l [mɛ̲́l] ‘honey’ ~ *me̲lós* [mə̲lós] ‘honey-like’

pa̲s [pá̲s] ‘step’ ~ *pa̲sset* [pə̲sét] ‘step.DIM’

/o/ → [u]

so̲pa [só̲pə] ‘soup’ ~ *so̲peta* [su̲pétə] ‘soup.DIM’

/ɔ/ → [u]

po̲c [pʊ̲́k] ‘a bit’ ~ *po̲quet* [pu̲két] ‘a little bit’

/i/ —— [i]

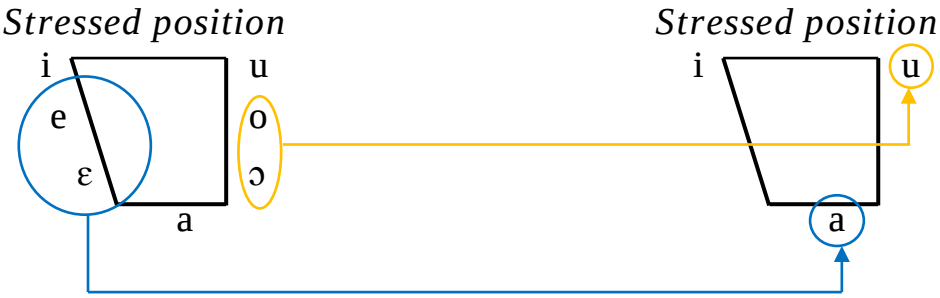
pi̲ [pí̲] ‘pine tree’ ~ *pi̲net* [pi̲nét] ‘pine tree.DIM’

/u/ —— [u]

su̲c [sú̲k] ‘juice’ ~ *su̲quet* [su̲két] ‘juice.DIM’

3.2. Varieties B (Algherese)

(12)



/e/ /ɛ/ → [a]

me̲s [mé̲s] ‘month’~ *me̲set* [ma̲zét] ‘month.DIM’

me̲l [mɛ̲́l] ‘honey’ ~ *me̲lós* [ma̲lós] ‘honey-like’

/o/ → [u] *sopa* [sópa] ‘soup’ ~ *sopeta* [supéta] ‘soup.DIM’

/ɔ/ → [u] *poc* [pɔ́k] ‘bit’ ~ *poquet* [pukét] ‘a little bit’

/a/ —— [a] *pas* [pás] ‘step’ ~ *passet* [pasét] ‘step.DIM’

/i/ —— [i] *pi* [pí] ‘pine tree’ ~ *pinet* [pinét] ‘pine tree.DIM’

/u/ —— [u] *suc* [súk] ‘juice’ ~ *suquet* [sukét] ‘juice.DIM’

3.3. **Varieties C** (Western varieties)

(13)

Stressed position *Unstressed position*

/ɛ/ → [e] *mel* [mɛ́l] ‘honey’ ~ *melós* [melós] ‘honey-like’

/ɔ/ → [o] *poc* [pɔ́k] ‘bit’ ~ *poquet* [pokét] ‘a little bit’

/e/ —— [e] *mes* [més] ‘month’~ *meset* [mezét] ‘month.DIM’

/o/ —— [o] *sopa* [sópa] ‘soup’ ~ *sopeta* [sopéta] ‘soup.DIM’

/a/ —— [a] *pas* [pás] ‘step’ ~ *passet* [pasét] ‘step.DIM’

/i/ —— [i] *pi* [pí] ‘pine tree’ ~ *pinet* [pinét] ‘pine tree.DIM’

/u/ —— [u] *suc* [súk] ‘juice’ ~ *suquet* [sukét] ‘juice.DIM’

3.4. **Universal constraint rankings**

- **Varieties A and C** are useful to illustrate prominence-driven vowel reduction, and to introduce the universal constraint ranking on vowels in unstressed position (Prince & Smolensky 1993 / 2004; Crosswhite 2001):

(14)

*UNSTRESSED a >> *UNSTRESSED ɛ, ɔ >> *UNSTRESSED e, o >> *UNSTRESSED i, u >>*UNSTRESSED ə

(15)

*UNSTRESSED a >> *UNSTRESSED ɛ, ɔ >> *UNSTRESSED e, o >> *UNSTRESSED i, u >>*UNSTRESSED ə

Undominated in Varieties A

(16)

*UNSTRESSED a >> *UNSTRESSED ɛ, ɔ >> *UNSTRESSED e, o >> *UNSTRESSED i, u >>*UNSTRESSED ə

Undominated in Varieties C

- **Varieties B** are useful to exemplify licensing-driven (contrast-driven) vowel reduction (Crosswhite 2001):

(17)

LIC-NONCORNER: Assign a violation mark for each non-corner vowel in unstressed position.

3.5. Particular constraint (re-)ranking

- **Varieties A and C** are useful to exemplify variation via constraint re-ranking, the conflict between M and F, and the notion of ranking argument (Prince & Smolensky 1993 / 2004).

(18)

*UNSTRESSED a >> *UNSTRESSED ɛ, ɔ >> | *UNSTRESSED e, o >> | *UNSTRESSED i, u >>*UNSTRESSED ə

FAITH in varieties A

FAITH in varieties C

Spec F in varieties C

(19) **Varieties A**: *UNSTRa >> *UNSTRɛ, ɔ >> *UNSTRe, o >> IDENT-V >> *UNSTRi, u >>*UNSTRə

(20) *UNSTRa >> IDENT-V: reduction of the low vowel /a/ to [ə]

/pas+ɛt/	*UNSTRa	*UNSTRɛ, ɔ	*UNSTRe, o	IDENT-V	*UNSTRi, u	*UNSTRə
☞ a. [pəsɛ́t]				*		*
b. [pasɛ́t]	*!					

(21) *UNSTRɛ, ɔ >> *UNSTRe, o >> IDENT-V: reduction of the low-mid vowels /ɛ/ and /ɔ/ to [ə] and [u]

/mɛl+oz/	*UNSTRa	*UNSTRɛ, ɔ	*UNSTRe, o	IDENT-V	*UNSTRi, u	*UNSTRə
☞ a. [məlós]				*		*
b. [mɛlós]		*!				
c. [melós]			*!	*		

/pɔk+ɛt/	*UNSTRa	*UNSTRɛ, ɔ	*UNSTRe, o	IDENT-V	*UNSTRi, u	*UNSTRə
☞ a. [pukɛ́t]				*	*	
b. [pɔkɛ́t]		*!				
c. [pokɛ́t]			*!	*		

(22) *UNSTRe, o >> IDENT-V: reduction of the high-mid vowels /e/ and /o/ to [ə] and [u]

/mez+ɛt/	*UNSTRa	*UNSTRɛ, ɔ	*UNSTRe, o	IDENT-V	*UNSTRi, u	*UNSTRə
☞ a. [məzɛ́t]				*		*
b. [mezɛ́t]			*!			

/sop+ɛt+ə/	*UNSTRa	*UNSTRɛ, ɔ	*UNSTRe, o	IDENT-V	*UNSTRi, u	*UNSTRə
☞ a. [supɛ́tə]				*	*	(*)
b. [sopɛ́tə]			*!			(*)

(23) **Varieties C**: IDENT-SpecV >> *UNSTRa >> *UNSTRɛ, ɔ >> IDENT-V >> *UNSTRe, o >> *UNSTRi, u >>*UNSTRə

(24) IDENT-SpecV >> IDENT-V: lack of reduction of the low vowel /a/

/pas+et/	IDENT-SpecV	*UNSTRa	*UNSTRɛ, ɔ	IDENT-V	*UNSTRe, o	*UNSTRə
☞ a. [pasét]		*				
b. [pəsét]	*!			*		*

✋ Also useful to introduce context-free inventory markedness constraints: *SCHWA

(25) *UNSTRɛ, ɔ >> IDENT-V: reduction of the low-mid vowels /ɛ/ and /ɔ/ to [e] and [o]

/mɛl+oz/	IDENT-SpecV	*UNSTRa	*UNSTRɛ, ɔ	IDENT-V	*UNSTRe, o	*UNSTRə
☞ a. [melós]				*	*	
b. [mɛlós]			*!			
c. [malós]		*!		*		

✋ Also useful to introduce context-free inventory markedness constraints: *SCHWA

/pɔk+et/	IDENT-SpecV	*UNSTRa	*UNSTRɛ, ɔ	IDENT-V	*UNSTRe, o	*UNSTRi, u
☞ a. [pokét]				*	*	
b. [pɔkét]			*!			
c. [pukét]				**!		*

✋ Also useful to explain featural similarity, featural changes and the need of specific F.

(26) IDENT-V >> *UNSTRe, o: lack of reduction of the high-mid vowels /e/ and /o/

/mez+et/	IDENT-SpecV	*UNSTRa	*UNSTRɛ, ɔ	IDENT-V	*UNSTRe, o	*UNSTRi, u
☞ a. [mezét]					*	
b. [mazét]		*!				

✋ Also useful to introduce context-free inventory markedness constraints: *SCHWA

/sop+et+a/	IDENT-SpecV	*UNSTRa	*UNSTRɛ, ɔ	IDENT-V	*UNSTRe, o	*UNSTRi, u
☞ a. [sopéta]		(*)			*	
b. [supéta]		(*)		*!		*

4. Lack of alternations and the theories about UR

(27) Lack of voicing alternations
a. *e<u>x</u>amen* [ə**g**zámən] 'exam'
b. *de<u>s</u>pré<u>s</u>* [də**<u>s</u>**$_1$pɾé**<u>s</u>**$_2$] 'afterwards'

(See 7)

(28) Lack of stressed / unstressed vowel alternations

a. b<u>a</u>len<u>a</u> [b<u>ə</u>lɛ́n<u>ə</u>] 'whale'
b. <u>e</u>l<u>e</u>fant [**<u>ə</u>**l**<u>ə</u>**fán] 'elephant'
c. <u>o</u>vella [**<u>u</u>**βéʎə] 'sheep'
d. m<u>u</u>ssol [m**<u>u</u>**sɔ́l] 'owl'

(Examples from Varieties A)

Three ways to represent non-alternating segments underlyingly:

A. Same as phonetic form: /g/ for *examen*; /ə/ for *<u>e</u>lefant*; /u/ for *m<u>u</u>ssol*
Adequate for very introductory courses.

B. Underspecified segments (without a voicing feature; without the contrasting features for vowels): /K/ for *examen*; /A/ for *<u>e</u>l<u>e</u>fant*; /U/ for *m<u>u</u>ssol.*
Easier to visualize them in proposing underlying representations.

C. All possibilities (Richness of the Base): /k/ and /g/ for *examen*; /a/, /ɛ/, /e/, /ə/ for *<u>e</u>l<u>e</u>fant*; /o/, /ɔ/ and /u/ for *m<u>u</u>ssol.* Can be related to B.
Adequate for advanced courses.

5. SPE- and OT-based approaches in class: advantages and drawbacks

- SPE-based approach

  Advantages

  — Its formalization system constitutes a clear-cut descriptive device.
  — The description of a process does not compromise the description of other processes.

  Drawbacks

  — Its formalization system cannot reflect generalizations easily.
  — The system cannot directly account for dialectal variation.

- OT-based approach

  Advantages

  — Its formalization system can reflect generalizations easily.
  — The system can directly account for dialectal variation.

  Drawbacks

  — The description of a process can compromise the description of other processes.
  — Consequently, the description of the overall phonological system cannot be very precise.