In Defense of a Morphous Morphology

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1. Preliminaries

(1) "If we accept the evidence that the range of morphological possibilities in natural languages includes some processes that cannot properly be represented as the addition of an affix, we must conclude that a general morphological theory should admit both affixational and non-affixational rules. Since a process-based approach naturally accommodates affixation, but not vice versa, the alternative we should prefer is to explore a theory of morphological processes."
Anderson (1992: 68)

In (1) Anderson is contrasting process-based approaches to an "affixation-only" program. An "affixation-only" approach would obviously be wrong if it only predicted the associations in (2) for a given word.

(2)
$[S_1]$	$[S_2]$	$[S_3]$	(semantic information)
$\|$	$\|$	$\|$	
$[M_1]$	$[M_2]$	$[M_3]$	(morphosyntactic information)
$\|$	$\|$	$\|$	
$[Ph_1]$	$[Ph_2]$	$[Ph_3]$	(phonological information)

In a morphous approach different types of association are allowed, and some of the information can be missing ([Ph], [M], [S]); [Ph] need not be a segment or a sequence of segments (it can be a phonological feature).

Exponence of inflection in amorphous approaches operates on stems and creates stems.

(3) a. Word Formation Rule for Georgian (Anderson 1992: 141 (4e))

⌈ +N ⌉
⌊ +Instr ⌋
/X/ → /Xit/ (Cf. teoriit 'theory-INSTR')

b. Realization pair for Spanish (Aronoff 1994: 68, table 3.3)

<[N, class 2], (*X* → *Xa*)> (Cf. belga 'Belgian')

2. Word Formation Rules and Catalan gender/class allomorphy

(4) Number and Case assignment in Georgian
a. (Anderson 1992, 139 (2))

⌈ +N ⌉
⌊ +Pl ⌋
/X(a)/ → /Xeb/ axal → axaleb

b. (Anderson 1992, 140 (4a))

⌈ +N ⌉
⌊ +Nom ⌋
/X/ = /Y[–Syllabic]/ → /Xi/ axaleb → axalebi

c. (Anderson 1992, 139 (1g))
es axalebi
this new-PL-NOM
"these new ones (nom. pl.)"

In Catalan, most masculine nominals do not end in an unstressed vowel (they have a Ø morph); let us call them *class 1*. Other masculine nominals end in *o* /u/; let us call them *class 2*. Plurals are formed by adding *s*.

(5) a. Catalan class 1 nominals

singular	*plural*	
llit	llits	'bed(s)'
cor	cors	'heart(s)'
mussol	mussols	'owl(s)'
amic	amics	'friend(s)'

b. Catalan class 2 nominals

singular	*plural*	
mic**o**	mic**o**s	'monkey(s)'
tor**o**	tor**o**s	'bull(s)'
lavab**o**	lavab**o**s	'bathroom'

(6) Possible Word Formation Rules for classes (based on Aronoff 1994)

a. ⌈ +N ⌉
⌊ class 1 ⌋
/X/ → /X/

b. ⌈ +N ⌉
⌊ class 2 ⌋
/X/ → /Xu/

(7) Word Formation Rule for Number

⌈ +N ⌉
⌊ +Pl ⌋
/X/ → /Xs/

(8) a. *cor* → *cors*

(6a) (7)
/kɔɾ/ ------> /kɔɾ/ ------> /kɔɾs/

b. *mico* → *micos*

(6b) (7)
/mik/ ------> /miku/ ------> /mikus/

However, there is a set of words which have class 1 in the singular but class 2 in the plural. The choice of class 1 for the plural would create a sequence of sibilants (an OCP problem).

(9)

Class 1 *singular*	Class 2 *plural*		
gos	goss**o**s	(*[góss])	'dog(s)'
peix	peix**o**s	(*[péʃs])	'fish(es)'
matalàs	matalass**o**s	(*[mətəláss])	'matress(es)'

(10) *gos* → *gossos*

(6a) (7)

/gos/ ------> /gos/ ------> /goss/ ------> ?? (the epenthetic vowel is [ə])

What follows is a very sketchy morphous OT account of the phenomenon; for a detailed version see Bonet, Lloret & Mascaró (2007).

(11) Vocabulary Item (*à la* Distributed Morphology, Halle & Marantz 1993)
masculine ⇔ {Ø > u}

(12) PRIORITY: Respect lexical priority (ordering) of allomorphs
(for further justification of this constraint see also Mascaró 2007)

(13) *gos* 'dog'

/gos + {Ø > u}/	OCP	DEP	PRIORITY
a. ☞ gós			
b. gósu			*!
c. gós̲ə		*!	

(14) *gossos* 'dogs'

/gos + {Ø > u} + s/	OCP	DEP	PRIORITY
a. góss	*!		
b. ☞ gósus			*
c. gós̲əs		*!	

3. The realization of the plural morph in North-Eastern Central (NEC) Catalan

(from Bonet, Lloret & Mascaró, in preparation)

3.1. The facts

As in other Romance languages, in most dialects of Catalan elements within the DP agree in Gender and Number (*concord*).

(15)

tot**es**	l**es**	mev**es**	antigu**es**	company**es**	italian**es**	casad**es**
all-FPl	the-FPl	my-FPl	old-FPl	fellow-FPl	Italian-FPl	married-FPl

'all my old married Italian female fellows'

In NEC Catalan, *s* is not realized when all the following conditions are met:

(16) *Conditions for s-"deletion" in NEC Catalan*

a. *s* is preceded and followed by a consonant — PHONOLOGICAL CONDITIONING
AND
b. *s* occurs in prenominal position within the DP — SYNTACTIC CONDITIONING
AND
c. *s* is the plural morph — MORPHOLOGICAL CONDITIONING

(17) a. aquell_ bon_ vin**s** blanc**s** dolç**os**
that good wine-Pl white-Pl sweet-Pl
'those good white sweet wines'

b. no gair**e-s** **b**o**n-s** **a**mics
not much-Pl good-Pl friend-Pl
'not many good friends'

c. un fal**s** conseller
'a false counselor'

We want to avoid rules that just restate the facts:

(18) $s \rightarrow \emptyset$ / [X C $\underset{[+plural]}{\_\_\_\_\_}$ C Y [ ]$_N$ Z]$_{DP}$

3.2. The proposal by Bonet, Lloret & Mascaró (in preparation)

(19) a. Basic DP organization (taken from Cinque 2005):
[... [$_{WP}$ Dem ... [$_{XP}$ Num ... [$_{YP}$ A [$_{NP}$ N]]]]]

b. Derived DP:
[... [$_{WP}$ Dem ... [$_{XP}$ Num ... [$_{YP}$ N A e]]]]

(20) Claims wrt concord:
a. In the syntax concord takes place only between the N and the DP-elements it c-commands.
b. OT-PF determines the final scope of concord within the DP.

(21) Uns avis vells
some-Pl grandparent-Pl old-Pl
'some old grandparents'

(22) a. Input to constraint evaluation for the N *avis* and the postnominal modifier *vells*:
[$_{STEM}$ avi]+[$_{FLEC}$ s$_{PL}$] [$_{STEM}$ vell]+[$_{FLEC}$ s$_{PL}$]

b. Input to constraint evaluation for the prenominal modifier *un, uns*:
[$_{STEM}$ un], [$_{FLEC}$ $\emptyset_{SG}$, s$_{PL}$]
(Gender is ignored for simplification.)

In Distributed Morphology (DM) terms, it can be assumed that all known information is assigned through Vocabulary Items (specific phonological information is assigned). That includes all stems plus assigned inflection (this is indicated by a '+' between the stem and the inflection). In the case of prenominal elements, all *potential* Vocabulary Items related to inflection are picked up (this is indicated by a comma ',' between the stem and the not yet incorporated inflection).

(23) b'. Input to constraint evaluation for the prenominal modifier *un, uns*:

$$[_{\text{STEM}}\ \text{un}]\ ,\ \begin{bmatrix} [-\text{PL}] \Leftrightarrow \emptyset \\ [_{\text{FLEC}}\ [+\text{PL}] \Leftrightarrow \text{s} \end{bmatrix}$$

Shorthand: un, [$\emptyset_{\text{SG}}$, s_{PL}]

(24) *Relevant constraints*

a. CONC(ORD): If an N has an inflectional feature F, all other modifiers within the DP must have the inflectional feature F.

b. MATCH: No contradictory values of an inflectional feature F within a DP.

c. *FEAT(URES): "No morphological expression of agreement features." (Samek-Lodovici 2002: 8, NOFEATS)

d. MAX(MPH): Every morpheme of the input has a correspondent in the output. (No morphological deletion.)

e. MAX(SEGMENT): "Every segment of the input has a correspondent in the output. (No phonological deletion.)" (McCarthy&Prince 1995: 264)

f. *CsC: shorthand for the set of constraints that ban this phonological configuration.

(25)

		MAX(SEG)	MAX(MPH)
a. *Postnominal input*:	vell+[s_{PL}]		
Outputs:	vell+[s_{PL}]	√	√
	vell+[$\_{}_{\text{PL}}$]	*	√
	vell	*	*
b. *Prenominal input*:	un, [$\emptyset_{\text{SG}}$, s_{PL}]		
Outputs:	un+[s_{PL}]	√	√
	un+[$\_{}_{\text{PL}}$]	*	√
	un	√	*

(26) *Ranking:* MAX(SEG), MATCH >> *CsC >> CONCORD, MAX(MPH) >> *FEAT

The constraint ranking in (26) ensures that the N and postnominal DP-elements surface with the plural morph.

(27) *taps vells* 'old corks'

tap+[s_{PL}] vell+[s_{PL}]	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a. ☞ tap+[s_{PL}] vell+[s_{PL}]			*			**
b. tap+[$_{PL}$] vell+[s_{PL}]	*!					**
c. tap vell+[s_{PL}]	*!				*	*

In prenominal position, plural *s* is realized only when *CsC is not violated, (28). When *CsC is violated only the stem (an uninflected form) surfaces, (29).

(28) *uns avis* 'some grandparents'

un, [$Ø_{SG}$, s_{PL}] avi+[s_{PL}]	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a. ☞ un+[s_{PL}] avi+[s_{PL}]						**
b. un+[$Ø_{SG}$] avi+[s_{PL}]		*!		*		**
c. un avi+[s_{PL}]				*!	*	*
d. un+[$_{PL}$] avi+[s_{PL}]	*!					**

(29) *un_ taps* 'some corks'

un, [$Ø_{SG}$, s_{PL}] tap+[s_{PL}]	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a. un+[s_{PL}] tap+[s_{PL}]			*!			**
b. un+[$Ø_{SG}$] tap+[s_{PL}]		*!		*		**
c. ☞ un tap+[s_{PL}]				*	*	*
d. un+[$_{PL}$] tap+[s_{PL}]	*!					**

Even in prenominal position and in a CsC context, *s* surfaces if it belongs to the stem. A deletion of this consonant contributes a fatal violation of MAX(SEG).

(30) *fals company* 'false colleague'

fals, [$Ø_{SG}$, s_{PL}] company+[$Ø_{SG}$]	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a. ☞ fals+ $Ø_{SG}$ company+ $Ø_{SG}$			*			**
b. fals company+ $Ø_{SG}$			*	*!	*!	*
c. fal_+ $Ø_{SG}$ company+ $Ø_{SG}$	*!					**
d. fal_ company+ $Ø_{SG}$	*!			*	*	*
e. fals+os_{PL} company+ $Ø_{SG}$		*!		*		**

Facts related to the so-called final *n*-deletion process support the idea that in prenominal contexts it is a stem that surfaces, not a singular form.

(31) a.

vi	vin-s	vin-et	vin-ateria
'wine-M'	'wines-M'	'wine-DIM-M'	'wine shop-F'
so	son-s	son-ar	son-all
'sound-M'	'sounds-M'	'to sound'	'rattle-M'
ple	plen-s	plen-a	plen-itud
'full-MSg'	'full-MPl'	'full-FSg'	'fullness-F'

b. son 'sleepiness'
nen 'kid'
tobogan 'slide'

(32) Assumed allomorphy: {*ple* / Sg, *plen* elsewhere} 'full'
Shorthand: ple(n)

(33)

	No CsC context	*CsC context*
a.	ple poder 'full power'	
b.	plena vida 'full life'	
c.	plens acords 'full agreements'	
d.		**plen_ poders** 'full powers' *ple poders

(34) *plen_ poders* 'full powers (MPl)'

ple(n),$Ø_{SG}$, s_{PL} poder+s_{PL}	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a. plen+s_{PL} poder+s_{PL}			*!			**
b. ple+$Ø_{SG}$ poder+s_{PL}		*!		*		**
c. ☞ plen poder+s_{PL}				*	*	*

(35) *ple poder* 'full power (MSg)'

ple(n),$Ø_{SG}$, s_{PL} poder+$Ø_{SG}$	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a. ☞ ple+$Ø_{SG}$ poder+$Ø_{SG}$						**
b. plen poder+$Ø_{SG}$				*!	*!	*

3.3. An account within an a-morphous morphology?

(36) Word Formation Rule (WFR) for plural

$$\begin{bmatrix} +N \\ +Pl \end{bmatrix}$$
$$/X/ \rightarrow /Xs/$$

The prenominal-postnominal asymmetry could be obtained by assuming the claims in (19) and (20) wrt to concord: the syntax would assign [+Pl] to postnominal elements and, therefore, the WFR in (36) would apply to the Noun and postnominal elements without any problem.

What about prenominal elements?

How do we obtain an output with a bare stem, needed for cases like (33d), *plen_ poders*?

Appendix: why have a faithfulness constraint (MAX (MPH)) instead of a markedness constraint (HAVEINFLECTION)?

In Spanish only a closed set of DP-elements show an o ~ Ø alternation.

(37) a. tercer piso piso tercer**o** (*tercer**o** piso)
third floor-MSg
noven**o** piso piso noven**o** (*novén piso)
ninth floor-MSg
b. algún compañero (*algun**o** compañero)
some fellow-MSg
tod**o** compañero (*tod compañero)
all fellow(s)-MSg

(38) Regular cases (*noveno-novena-novenos-novenas*)
a. Lexical entry: *noven*
b. Input to PF (prenominal): noven,[$_{\text{FLEC}}$ o_M, a_F; $Ø_{SG}$, s_{PL}],
Shorthand: noven,FLEC

(39) Exceptional cases (*primer-primero-primera-primeros-primeras*)
a. Lexical entry: *primer*, *primer*¬
b. Input to PF (prenominal): { primer¬ ; primer,[$_{\text{FLEC}}$ o_M, a_F, $Ø_{SG}$, s_{PL}] }
Shorthand: primer¬
primer,FLEC

(40) *algún piso primero* 'some first floor'

algun¬ pis+o_{MSG} primer+o_{MSG} algun,FLEC	MAX (MPH)	CONC (F,PL)	*FEAT	CONC	MAX (SEG)
a. algun+o_{MSG} pis+o_{MSG} primer+o_{MSG}			6*!		
b. algún pis+o_{MSG} primer	**!		**	4*	*!
c. ☞ algún pis+o_{MSG} primer+o_{MSG}			4*	**	

(41) *noveno piso* 'ninth floor'

noven,FLEC pis+o_{MSG}	MAX (MPH)	CONC (F,PL)	*FEAT	CONC	MAX (SEG)
a. ☞ noven+o_{MSG} pis+o_{MSG}			4*		
b. novén pis+o_{MSG}	**!		**	**	

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