DRAFT 9/2007 - to be revised
The prenominal allomorphy syndrome*
Eulàlia Bonet (UAB), Maria-Rosa Lloret (UB), Joan Mascaró (UAB)

1. Introduction

The prenominal position X and the postnominal position Y within a DP [$_{DP}$XNY], where N is the head noun, are asymmetric in various respects. Most typically, perhaps, a given category, definite article, demonstrative, numeral, qualifying adjective, etc. can appear in a given language in one position but not in the other. In some cases a category can appear in both positions, but one allomorph appears prenominally and the other allomorph appears postnominally. A simple case affecting a single lexical item is allomorph selection of the adjective for 'bad' in Catalan. The adjective *pèssim* 'awful' in (1a,b) is a normal adjective that presents the same form in both positions. But the adjective *mal/dolent* 'bad' (1c,d) presents its allomorphs in complementary distribution governed by position with respect to the N (M = masculine; F = feminine; Sg = singular; Pl = plural):

(1) *Postnominal Prenominal*

    a. solució   pèssima   pèssima solució
       solution-F awful-F

    b. resultats   pèssims   pèssims resultats
       result-MPl   awful-MPl

    c. solució   dolenta / *mala   mala / *dolenta solució
       solution-F bad-F

    d. resultats   dolents / *mals   mals / *dolents resultats
       result-MPl bad-MPl

Additionally, in some cases prenominal and postnominal positions give different semantic interpretations of the same element. This is the case of *mal/dolent* in examples like *mal amic*, which is usually interpreted as 'bad (as a friend) friend', vs. *amic dolent* 'bad (as a person) friend'. However, since a difference in meaning is not always present (cf. (1c,d)), *mal* and *dolent* cannot be two different lexical entries.

More generalized left/right asymmetries of the same type can be found, for instance, in Ladin of Fassa (Romance, Italy), in Komi and Erzya (Finno-Ugric, Russia), and in Maasai (Nilo-Saharan, Kenya).[1] We illustrate these cases briefly. In

[1] Croft and Deligianni (2001) examine other kinds of NP asymmetries in addition to agreement.

Ladin (2) prenominal elements do not show agreement with the head, whereas postnominal elements can agree or not; Komi (3) shows postnominal agreement and no agreement prenominally; Maasai presents a more complex situation, summarized in (4), with different kinds of prenominal agreement depending on category, but with full agreement postnominally.

(2) *Ladin of Fassa* (Rasom 2006)

la	picola	cèses	de	Fascia
the-Sg	little-Sg	houses-Pl	of	Fascia

la	cèses	picoles	de	Fascia
the-Sg	house-Pl	little-Pl	of	Fascia

*les	picoles	cèses	de	Fascia
the-Pl	little-Pl	house-Pl	of	Fascia

duta	la	bezes	beles	ciaparà	na	resa
all-Sg	the-Sg	girl-Pl	beautiful-Pl	will-get	a	rose

(3) *Komi* (Croft and Deligianni 2001, Vilkuna 1998)

ydɒyd	da	permyd	kerkajas
big	and	dark	house-Pl

kerkajas	ydɒyd-ös	da	permyd-ös	tydalisny	matyn	n'in
house-Pl	big-Pl	and	dark-Pl	be-visible-PAST1.3Pl	close	already

'houses, big and dark, could already be seen close by'

(4) *Maasai agreement in the DP* (Koopman 2003)

Categories (ordered)	Article-like	Other	TRIGGERING N	Quantifiers, numerals, As
Agreement in	Gender, Number	No agreement		Gender, Number, Case

In this paper we focus on some specific cases of asymmetry which involve allomorphic choice that affects inflectional morphemes in Catalan and Spanish. In these languages, in normal circumstances, all prenominal and postnominal elements in the DP agree in gender and number with the N, as the Catalan phrase in (5) illustrates.

(5)

tot**es**	l**es**	mev**es**	antigu**es**	companyes	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 section 2 we present the analysis of DP agreement we assume throughout the paper, which constitutes the origin of prenominal / postnominal asymmetries. We assume that postnominal agreement takes place in the syntax while prenominal agreement is established at PF and is controlled by constraint evaluation. The rest of the paper is organized as follows: section 3 is devoted to Northeastern Central Catalan, in which the plural morph *-s* does not appear in prenominal position under specific phonological conditions. We argue that the lack of agreement arises through the high ranking of a phonological markedness constraint interspersed with morphological constraints. In section 4 we examine a restricted set of lexical items in

Spanish which require the bare stem, devoid of inflectional markers, to appear in prenominal position, while the same items in postnominal position appear fully inflected. We devote section 5 to a third case, from a variety of Spanish, in which the exceptional element that triggers asymmetric agreement in the DP is not the prenominal or postnominal element itself, but the N: it triggers regular agreement to the right and default masculine marking to the left. Finally, section 6 contains some concluding remarks.

2. Split concord

In this paper we assume, with many authors (see, e.g., Picallo 1991, Bernstein 1993, Cinque 1996, 2005) that the N is generated in final position within the DP. The postnominal position occupied by certain DP elements, like most of the adjectives in the Romance languages, is derived through N (or NP) movement. This is illustrated in (6) using the basic structure proposed by Cinque (2005).

(6)　　a.　Basic DP organization:
　　　　　　[... [$_{WP}$ Dem ... [$_{XP}$ Num ... [$_{YP}$ A [$_{NP}$ N]]]]]

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

The idea we pursue here is that N movement creates concord with the elements that the N c-commands (through Spec-head agreement or some other mechanism) but concord does not occur with any elements that are hierarchically above it. Our claim is that prenominal concord is established at PF through the relevant constraints and constraint evaluation. A high-ranked MAX constraint ensures that inflectional features on the N and on the other DP elements that agree with it (all postnominal) are preserved. Concord for prenominal elements is forced by constraints of the family CONCORD;[2] candidates violating CONCORD will be optimal when higher ranked constraints rule out the agreeing candidate, causing the type of prenominal / postnominal asymmetries mentioned in the previous section. In the next section we concentrate on Northeastern Central Catalan, where number concord fails only in prenominal position and only under certain phonological conditions. This duality in agreement (fixed agreemnt in the syntax, variable agreement at PF) is reminiscent of the proposal for sentential agreement in Guasti and Rizzi (2002) according to which if a morphosyntactic feature is checked in the overt syntax it must be expressed by the morphology, while if it is unchecked its expression depends on morphological rules.

3. Northeastern Central Catalan s~Ø alternation

3.1. The data

---

[2] We use the term CONCORD, instead of the more widely used AGREE or AGR (see, for instance, Samek-Lodovici 2002), to distinguish DP internal agreement, the case under discussion in this paper, from sentential agreement.

As illustrated in section 1 (cf. (5)), number concord in Catalan is expressed by the plural morph -*s*. In general, the sibilant *s* deletes only in specific phonological contexts, namely before a rhotic (e.g., *les roques* [lə rɔ́kəs] 'the rocks') or before another sibilant (e.g., *les sopes* [lə sópəs] 'the soups') (for an OT analysis of these facts, see Bonet & Lloret 2002). In other contexts, *s* is retained and only assimilates in voicing to a following consonant or to a vowel across word boundaries (e.g., *les cases* [ləs kázəs] 'the houses', *les nenes* [ləz nénəs] 'the girls', *les àvies* [ləz áβjəs] 'the grandmothers'). In Northeastern Central (NEC) Catalan, however, the plural -*s* disappears in some additional cases, as illustrated in (7).[3] (In the examples, the low dash '_' is used for clarity to indicate the position of an inflectional element that should occur under general concord but does not show up.)

(7) *NEC Catalan*   *Other Central Catalan varieties*

| un_ | meu_ | companys | uns meus companys |
| a | my | fellow-Pl | 'some fellows of mine' |

| el_ | bon_ | vins | els bons vins |
| the | good | wine-Pl | 'the good wines' |

| aquell_ | llibres | | aquells llibres |
| that | book-Pl | | 'those books' |

| quin_ | nou_ | problemes | quins nous problemes |
| what | new | problem-Pl | 'what new problems' |

This apparent *s*-deletion occurs only when the three following conditions are met:

(8) a.   *s* is preceded and followed by a consonant,
     b.   *s* occurs in prenominal position within the DP, and
     c.   *s* is the plural morph.

Thus, following (8a), *s* is retained if it can be syllabified as an onset, as in *els avis* [əl.**z** á.βis] 'the grandparents', or if it is the only consonant in a coda, as in *les nenes* [lə**z**.né.nəs] 'the girls'. Other examples in which the -*s* is retained because it is not preceded and followed by a consonant appear in (9). (We provide transcriptions only for cases of relevant discrepancies from orthography.)[4]

(9) aques**t-s** estra**ny-s** **u**lls   [əkèdz əstɾàɲʒ úʎs]
     this-Pl   strange-Pl eye-Pl
     'these strange eyes'

     e**l-s** **a**nti**c-s** **a**mics
     the-Pl old-Pl   friend-Pl

_____

[3] The varieties which present s~Ø alternation (referred to as NEC Catalan in this paper) are spoken in the regions of Garrotxa, Pla de l'Estany, Gironès, and Alt Empordà. In some places in the area the phenomenon has slightly different properties.

[4] *Aquests* 'these' is pronounced [əkéts] in isolation (cf. also singular *aquest* 'this', [əkét]). Final -*nts*, -*rts*, and -*lts* are pronounced without the 't'. In *estranys* 'strange-Pl' there is progressive place assimilation from the nasal.

'the old friends'

quin**e-s** **m**al**e-s** **c**arreteres
what-FPl bad-FPl road-FPl
'what bad roads'

tot**e-s** **d**os-cent**e-s** **n**ove**-s** **m**atriculades
all-FPl two-hundred-FPl new-FPl registered-one-FPl
'all 200 new registered ones'

qua**nt-s** **ú**lti**m-s** **i**nstants [kwànz ùltimz instáns]
how-many-Pl last-Pl instant-Pl
'how many last instants'

no gair**e-s** **b**on**-s** **a**ficionats
not many-Pl good-Pl amateur-Pl
'not many good amateurs'

The plural -*s*, however, does not show up in the context C_C, i.e., if it would have to syllabify as the second element of a non-final coda, as in *uns meus companys* [um _ .méw _.kum.páɲs], *[unz.méwz.kum.páɲs] 'some fellows of mine'. Further examples appear below:

(10)   aque**ll_** **t**eu**_** **c**abells
that your hair-Pl
'those hairs of you'

e**l_** **d**ifere**nt_** **g**rups
the different group-Pl
'the different groups'

qui**n_** **m**a**l_** **c**amins
what bad path-Pl
'what bad paths'

to**t_** **d**os-ce**nt_** **n**ou**_** **m**atriculats
all two-hundred new registred-one-Pl
'all 200 registered ones'

qua**nt_** **q**ua**rt_** **d**ies
how-many fourth day-Pl
'how many fourth days'

mo**lt_** **p**oc**_** **b**on**_** **p**rofessionals
very few good professional-Pl
'very few good professionals'

Following (8b), postnominal elements in the DP and the head of the NP itself do not lose the -*s* even in a C_C context, as shown in (11). Notice, in the illustrative examples in (10) and (11), that the same lexical items can show up prenominally without the -*s* and postnominally with the -*s* retained. This is the case for adjectives like *bons* 'good-Pl' and *nous* 'new-Pl', demonstratives like *aquells* 'that-Pl', and possessives like *teus* 'your-Pl'.

(11)   aquest**_** cabell**s** llarg**s** tenyits

this   hair-Pl long-Pl dyed-Pl
'these dyed long hairs'

el_ vin**s**   blancs aquell**s** tan cars
the wine-Pl white-Pl that-Pl so   expensive-Pl
'those so expensive white wines'

quin_ camin**s** bon**s**   desaprofitats
what   path-Pl good-Pl wasted-Pl
'what wasted good paths'

dos-cent_   matriculat**s**   nou**s**   comprovats
two-hundred registered-one-Pl new-Pl checked-Pl
'200 checked new registered ones'

quant_   parent**s**   teu**s**   francesos
how-many   relative-Pl your-Pl French-Pl
'how many French relatives of yours'

molt_ poc_ professional**s**   bon**s**   presents
much   few   professional-Pl good-Pl present-Pl
'very few present good professionals'

The plural element without *-s* must be strictly prenominal, since a gap causes the plural morph to reappear, as shown in the following pairs:

(12)   a. el_   llums   que tinc   comprats
                the   lamp-Pl that I-have bought-Pl
                'the lamps that I have bought'

                el**s**   que tinc   comprats
                the(-one)-Pl that I-have   bought-Pl
                'the ones I have bought'

            b. el_ llibres   més   venguts
                the   book-Pl most   sold-Pl
                'the most sold books'

                el**s**   més   venguts
                the(-one)-Pl   most   sold-Pl
                'the most sold ones'

            c. un_ cotxes grocs
                a   car-Pl yellow-Pl
                'some yellow cars'

                un**s** de grocs
                a-Pl of   yellow-Pl
                'some yellow ones'

Finally, following (8c), a final *s* other than the plural morph does not delete when it meets condition (8a), interconsonantal position, or condition (8b), prenominal position, as the following singular DPs illustrate (orthographic *ç* is [s]). The last example shows that the other suffix *-s*, i.e. the second-person singular morph, does

not delete either, even though the phonological conditioning is met.[5] (2.Sg stands for second person singular.)

(13) un fal**s** conseller
      'a   false counselor'

      un dol**ç** cant
      'a   sweet singing'

      no   vén-**s**   pas?
      not come-2[nd]Sg   not
      'don't you come?'

3.2. Untenable analyses

A simple morphological solution in terms of allomorphy would posit two allomorphs, -*s* and Ø, and their associated contexts (e.g., Ø in prenominal C_C contexts, -*s* elsewhere). Such an analysis is untenable because it would amount to reducing the natural prenominal / postnominal distinction and the equally natural C_C context to lexical listing.[6]

A purely phonological solution in terms of deletion is out of the question too, since the phenomenon is restricted to a single morph, i.e. plural -*s*. It is worth noting, though, that, historically, this phenomenon is probably the result of the morphologization of an earlier active, general process, which still operates in the neighboring Rossellonese dialect, where any word-final *s* deletes when it is preceded and followed by a consonant, as in *caps* vs. *cap_ grossos* ('heads' vs. 'big heads'), *dins* vs. *din_ tres dies* ('in' vs. 'in three days') (Fouché 1924: 254).

It is also impossible to resort to the prosodic hierarchy to explain why plural-*s* deletion (or, alternatively, Ø allomorph selection) applies within the 'prenominal+head' domain but never in the 'head+postnominal' domain. The size of a phonological phrase depends on the length of the constituents involved, but in this case we would need all prenominal elements plus the head to form a single phonological phrase, regardless of prosodic weight, and each postnominal word to constitute a single phonological phrase, again regardless of prosodic weight. The phonological phrasing in (14) would be plausible and would give the right results, with respect to the s~Ø alternation.

---

[5] In NEC Catalan, pronominal clitics ending in Cs, where *s* is the plural morph, followed by a verb beginning in a consonant always induce [ə] epenthesis for independent reasons; e.g., *els compro*: [əl.zə] *compro* 'I buy them', *ens compra*: [ən.zə] *compra* 's/he buys for us', and also *compra'ns* -[n.zə] 'buy for us' (cf. Bonet & Lloret 1998: 199).

[6] In the morphology of Catalan, there is no clear evidence that a Ø plural allomorph can be posited since all plurals, except the NEC cases under discussion, end in *s*. The so-called 'invariable forms' always end in *s*; e.g., *tos* 'cough (singular and plural)', *temps* 'time (singular and plural)', *rentaplats* 'dishwasher (singular and plural)'. Hence, an alternative explanation based on fusion is plausible. For a review of different accounts for invariable forms regarding number inflection, see Lloret (1996).

(14) (aquell_   plans)ɸ (desproporcionats)ɸ
        that   plan-Pl   disproportionate-Pl
        'those disproportionate plans'

However, a sequence of a monosyllabic noun followed by a monosyllabic adjective
would give rise either to a forced phonological phrasing, as in (15a) (★ = prosodically
ill-formed), or to a natural phrasing with illicit *s*-deletion, as in (15b).

(15)   a. ★(xais)ɸ   (blancs)ɸ
                sheep-Pl   white-Pl
        b. *(xai_   blancs)ɸ
              sheep   white-Pl
              'white sheep-Pl'

       As just mentioned, all prenominal elements plus the N should form a single
prosodic constituent, while each postnominal element should constitute a single
prosodic constituent. This parsing is plausible for a sequence like (16a), but it would
be extremely inadequate for a sequence like (16b). In (16b) several polisyllabic words
must form a single prosodic constituent, while the postnominal word, which is
monosyllabic, is forced to constitute an independent phonological phrase, giving rise
to an extremely unnatural phrasing.

(16)   a. (aquell_   pantalons)   (vermells) (foradats)   (llarguíssims)
              that   trouser-Pl   red-Pl   with-holes-Pl   very-long-Pl
              'those very long red trousers with holes'
        b. ★(tots   aquell_   complicadíssim_   càlculs)   (nous)
               all   that   very-complicated   calculation-Pl new-Pl
              'all those new very complicated calculations'

       The fact is that the lack of *s* is at the same time (i) morphologically limited to
the plural morph *-s*, (ii) syntactically conditioned (prenominal position), and (iii)
phonologically conditioned (interconsonantal position), a sum of circumstances which
in our view follows from concord for prenominal elements being established at PF.

3.3. Analysis under split concord

 As said in section 2, our analysis is based on the assumption that there are two
mechanisms for concord: syntactic movement and PF-concord. For both cases, we
assume that inflectional endings appear under a constituent FLEC(TION). Postnominal
elements within the DP acquire concord through syntactic movement; they reach PF
with the inflection assigned, and hence enter constraint evaluation with a specific
ending in the input. In contrast, at the beginning of PF, prenominal DP elements do
not show concord with the N and enter constraint evaluation without any specific
inflection assigned. In this case, the input contains the stem of the word and all its
possible inflectional endings. For example, in a DP such as *uns avis vells* 'some old
grandparents' the N, *avis*, and its postnominal modifier, *vells*, reach PF with inflection
assigned: the N has specified gender and number (masculine plural in our example) in
the input to syntax; the postnominal modifier gets inflectional features in the syntax as
a result of N movement and enters constraint evaluation (17a). We represent this

structural relation between the stem and the specific inflectional morphs assigned before PF with a hyphen ('-').

The prenominal modifier, however, enters PF without inflection assigned. We assume that the input representation of inflectional categories is as follows: the input consists of two separate elements, the stem and the morphological constituent FLEC, which in this case hosts all possible gender and number morphs, i.e. Ø for masculine, -*a* for feminine, Ø for singular, and -*s* for plural (17b).[7] Here we represent the relation between the stem and the not yet incorporated morphological constitutent FLEC with a comma (',').

(17) a. Input to constraint evaluation for the N *avis* and the postnominal modifier *vells*

$[_{\text{STEM}}$ avi$]$-$[_{\text{FLEC}}$ Ø$_{\text{M}}$ s$_{\text{PL}}]$ $[_{\text{STEM}}$ vell$]$-$[_{\text{FLEC}}$ Ø$_{\text{M}}$ s$_{\text{PL}}]$

b. Input to constraint evaluation for the prenominal modifier *un-una-uns-unes*

$[_{\text{STEM}}$ un$]$, $[_{\text{FLEC}}$ Ø$_{\text{M}}$, a$_{\text{F}}$; Ø$_{\text{SG}}$, s$_{\text{PL}}]$

The inflectional information in (17) comes from different sources. One is idiosyncratic and, hence, is lexical. This is the case of the masculine gender for the N *avi* in (17a). The other one is regular and includes the fact that most nominal elements are inflected for gender and number; we leave aside the question as to what specific mechanisms derive (17b) from lexical entries.

Prenominal concord is ultimately governed by morphological constraints that require agreement within the DP. Two constraints require agreement of different strength: CONCORD demands agreement with the N (the nucleus of the NP, i.e. the agreement head); MATCH bans only contradictory feature values, (18b). These two constraints interact with the morphological constraint *FEATURES, (18c), which militates against the presence of any agreement morphology (cf. Samek-Lodovici 2002).[8]

(18) a. CONC(ORD): If a 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.

---

[7] For simplicity, we assume that the gender morphs are just Ø for masculine and -*a* for feminine. (Feminine -*a* is spelled *e* in the plural, but both spellings represent the same vowel, [ə].) There are, however, other less common allomorphs that occur in these morphological contexts (e.g., for masculine, -*o* and -*a*, as in *mic-o* 'monkey (M)', *map-a* 'map (M)'; for feminine, Ø, as in *sal* 'salt (F)'). (For an analysis on gender allomorph selection in Catalan, see Bonet *et al.* 2007.) The situation is quite different with respect to number inflection. All plural forms, except the cases of NEC Catalan under discussion, end in *s* (cf. note 6).

[8] The constraints (18a-c) are specific versions of more general constraints involving general agreement (AGREE; see Samek-Ludovici 2002 for sentence agreement) and *STRUC, which penalizes any and all structure (Prince & Smolensky 2004: 30, n. 13; 230). As is well-known, languages differ in the set of features they express. For present purposes, we assume that the constraints are relativized to all inflectional nominal features, or to specific inflectional features when so indicated, as in section 4.

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

The MAX constraint family prohibits deletion of input information. We distinguish between the well-established MAX(SEGMENT) constraint, which penalizes loss of input phonological segments, (19a), from MAX(MPH), penalizing loss of morphemes present in the input (19b).[9]

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

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

As usual, MAX(SEGMENT) applies to input pre-established segments, including the inflectional endings of N and all postnominal elements because they are co-indexed for correspondence relations. As illustrated in (20a) for postnominal elements, an output with a deleted plural morph, like *vell*-[$_{\text{FLEC}}$ Ø$_{\text{M}}$ $_{-\text{Pl}}$], and a phonetically identical output where all inflection has been erased, as in bare *vell*, both violate MAX(SEGMENT), because in both cases an input /s/ does not have a correspondent in the output. However, in prenominal position, (20b), inflectional endings are unspecified in the input; the only information FLEC contains is the actual realization if they turn out to be M, F, Sg or Pl (in Distributed Morphology terms, Halle & Marantz 1993, FLEC contains all the potential Vocabulary items related to nominal inflection). In this position, then, MAX(SEGMENT) is violated only by candidates like *un*-[$_{\text{FLEC}}$ Ø$_{\text{M}}$ $_{-\text{Pl}}$], because the plural morpheme has been chosen, but its exponent /s/ does not have a correspondent. Crucially, a candidate consisting of a bare stem like *un* does not violate MAX(SEGMENT), because no correspondence relation has been established between the candidate and input inflectional features. The constraint MAX(MPH), which is relativized here to gender and number morphemes, is violated by any candidate that consists of a bare stem, like *vell* or *un*, both in prenominal and postnominal position, because determiners and adjectives, among other elements, should be inflected. And since any nominal element should be inflected both for gender and for number (in Catalan), a bare stem violates MAX(MPH) twice. The N, having its inflectional endings determined already in the input to syntax, behaves like postnominal adjectives, (20a), with respect to MAX violations.

(20)   MAX(SEG) MAX(MPH)
a. Postnominal input: vell-[$_{\text{FLEC}}$ Ø$_{\text{M}}$ s$_{\text{PL}}$]

---

[9] MAX(MPH) is a pure morphological constraint, since it prevents deletion of a morphological constituent. Other related constraints posited in the literature are morphophonemic, since they prevent deleting segments from certain morphemes (e.g., MAX$_{\text{Lex}}$, informally defined as "do not delete segments in lexical morphemes" in McCarthy 2002: 96). Given the data in this section, one could posit a markedness constraint (e.g. HAVEINFLECTION), instead of the faithfulness constraint MAX(MPH). However, for the facts from Spanish discussed in section 4 it is crucial that the relevant constraint be a faithfulness constraint.

Outputs:	vell-[_{FLEC} Ø_M s_{PL}]	√	√
	vell-[_{FLEC} Ø_M —_{PL}]	*	√
	vell	*	**

b. Prenominal input: un,[_{FLEC} Ø_M, a_F ; Ø_{SG}, s_{PL}]

Outputs:	un-[_{FLEC} Ø_M s_{PL}]	√	√
	un-[_{FLEC} Ø_M —_{PL}]	*	√
	un	√	**

The interaction among the constraints discussed so far and the constraints responsible for banning CsC sequences (*CsC) is sufficient to account for the facts of NEC Catalan.[10] The ranking at work is the following:[11]

(21)   MAX(SEG), MATCH >> *CsC >> CONCORD, MAX(MPH) >> *FEAT

We illustrate first the effect of (21) with an example that contains a head and postnominal material only. When inflection is already assigned in the input, MAX(SEG) >> *CsC forces input specifications to be retained, even when *CsC is violated. As shown in (22), in the sequence *taps vells* 'cork-MPl old-MPl' ('old corks'), the inflectional specifications of the head N *taps* are already present in the input to syntax. Syntactic movement provides the inflectional specifications of the postnominal element *vells*. Hence, at PF each of them consists of the stem and a FLEC constituent, which contains the number morph (–*s*, in the case of plural), as well as the gender morph (the masculine Ø in all the examples seen so far). For simplicity, in the examples below we omit the Ø gender morph from the representations: *tap*-[_{FLEC} s_{PL}] *vell*-[_{FLEC} s_{PL}]. The fully faithful candidate (22a) violates *CsC, but candidates satisfying *CsC must have lost the -*s*, either by segment deletion (22b), or by deletion of the FLEC constituent. In both cases there is a violation of MAX(SEGMENT). Other constraints are so far irrelevant.[12] From now on and for reasons of space, we also omit the label FLEC and the brackets delimiting affixes in the tableaux.

(22) *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}	*!				*	*

---

[10] We use *CsC as a shorthand for the interaction of the general markedness constraint *COMPLEXCODA with different faithfulness constraints of the MAX and IDENT families (cf. Wheeler 2005: § 7 and the references cited therein).

[11] In section 4 we will see that the higher ranking of MAX(MPH) in Spanish is crucial for determining the possibility of V~Ø alternation for specific lexical items.

[12] Faithfulness to specific values of features would be enforced by high-ranking the constraint IDENT(F), extended to inflectional features (IDENT(F): "Correspondent segments have identical values for the feature F"; McCarthy & Prince 1999: 226). This constraint would prevent changes in the input feature values of specified segments (as Sg for Pl in *tap*-[_{FLEC} s_{PL}] *vell*-[_{FLEC} s_{PL}]).

We now turn to the evaluation of prenominal elements, (23)-(25). A prenominal element, like *un* in *uns taps* 'some corks', for example, has an input without assigned inflectional features, i.e. [un] , [$_{\text{FLEC}}$ [Ø]$_{\text{SG}}$, [s]$_{\text{PL}}$] (simplified to *un* , [$_{\text{FLEC}}$ Ø$_{\text{SG}}$, s$_{\text{PL}}$] in (23), and similarly in other tableaux). GEN generates, among others, the singular candidate *un*-[$_{\text{FLEC}}$ Ø$_{\text{SG}}$], the plural candidate *un*-[$_{\text{FLEC}}$ s$_{\text{PL}}$], and the bare stem *un* as well. Fully faithful candidates (23a,b) either violate *CsC because of the presence of the plural *-s,* or MATCH because of the contradiction between the singular Ø and the plural head *taps*. The offending *–s* can also be avoided through deletion, as in (23d), but high-ranked MAX(SEGMENT) is violated in this case. Candidate (23c), the optimal candidate, is a bare stem and therefore violates MAX(MPH)°, since it has not retained the number morpheme from the input; it also violates CONCORD, because it does not have the plural feature of the head. But (23c) satisfies higher-ranked MATCH, because the bare stem and the plural *taps* contain no contradictory features, and it satisfies *CsC as well. Notice that candidates (23b-d) are phonetically identical.

(23) *uns taps* 'some corks'

un,Ø$_{\text{SG}}$, s$_{\text{PL}}$ tap-s$_{\text{PL}}$	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a. un-s$_{\text{PL}}$ tap-s$_{\text{PL}}$			*!			**
b. un-Ø$_{\text{SG}}$ tap-s$_{\text{PL}}$		*!		*		**
c. ☞ un tap- s$_{\text{PL}}$				*	*	*
d. un-$_{\text{PL}}$ tap-s$_{\text{PL}}$	*!					**

When no conflict arises with *CsC, both prenominal elements and postnominal elements show explicit plural concord. In the sequence *uns avis* 'some grandparents', for example, concord applies within the whole DP and is fully expressed. In (24), deletion of the *-s* corresponding to the plural morpheme results in a MAX(SEGMENT) violation, (24d). The prenominal elements of candidates (24a-c) do not violate MAX(SEGMENT), because prenominal elements are not specified for any specific FLEC morph in the input. Candidate (24b) is discarded by the constraint MATCH, because it contains contradictory values of the number feature; and the candidate containing the prenominal uninflected element, (24c), is ruled out by either CONC or MAX(MPH), which are ranked above *FEAT.

(24) *uns avis* 'some grandparents'

un,Ø$_{\text{SG}}$, s$_{\text{PL}}$ avi-[s$_{\text{PL}}$]	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a. ☞ un- s$_{\text{PL}}$ avi-s$_{\text{PL}}$						**
b. un-Ø$_{\text{S}}$ avi-s$_{\text{PL}}$		*!		*		**
c. un avi-s$_{\text{PL}}$				*!	*	*
d. un- $_{\text{PL}}$ avi-s$_{\text{PL}}$	*!					**

The prenominal / postnominal asymmetry is illustrated in tableau (25) with the sequence *uns taps vells cars* 'some expensive old corks'; this example contains the N head and both prenominal and postnominal non-heads. Potential plural *–s* morphs in the interconsonantal context appear both in prenominal position (***uns taps***) and in postnominal position (***taps vells*** and ***vells cars***).

(25) *uns taps vells cars* 'some expensive old corks'

un,Ø_{SG}, s_{PL} tap-s_{PL} vell-s_{PL} car-s_{PL}	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a.　　un-s_{PL} tap-s_{PL} vell-s_{PL} car-s_{PL}			***!			****
b.　　un-Ø_{SG} tap-s_{Pl} vell-s_{Pl} car-s_{Pl}		*!	**	*		****
c. ☞ un　　 tap-s_{Pl} vell-s_{Pl} car-s_{Pl}			**	*	*	***
d.　　un tap vell car-s_{Pl}	**!				***	*

As stated in (8c), the "deleting" *s* must be the plural morph. Our next example in (26), *fals company* 'false colleague', illustrates the case of prenominal elements ending in an *s* that is not the plural morph, in which case the sibilant is maintained even if it appears in a C__C context. In this situation MAX(SEGMENT) penalizes the loss of the sibilant, because, as part of the stem, it is present in the input (26c,d). Candidate (26e), with a regular *-os* plural form that avoids sibilant contact between the *s* of the stem and the *s* of plural concord is discarded by MATCH, because the DP contains contradictory number features.[13] The two remaining candidates, (26a,b), fare evenly with respect to the following constraint, *CsC. Candidate (26a), being singular, wins because, unlike (26b), it satisfies CONC as well as MAX(MPH). Notice that in this case choosing the bare stem *fals* does not avoid the *CsC violation, because the *s* belongs to the stem.

(26) *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}]		*!		*		**

There is one piece of evidence that confirms that prenominal elements without the plural morph *-s* are elements showing lack of number concord, e,g., *un* in (25c), and not inflected singular forms, e.g., *un*-[_{FLEC}Ø_{SG}] in (25b)). In Catalan in general, and in the NEC variety as well, there is a process of *n*-deletion: a large number of oxytone words that end in a vowel in the singular, show *n* elsewhere, as shown in (27a). Nevertheless, this process has a considerable number of exceptions, as shown in (27b). (For clarity, in the examples in (27) we separate the relevant stem from the rest of the word with a hyphen '-'; 'DIM' stands for 'diminutive'.)

(27)　a.　so　　　　　　son-s　　　　　son-all
　　　　　'sound-MSg'　'sounds-MPl'　'rattle-MSg'
　　　　　funció　　　　funcion-s　　　funcion-al
　　　　　'function-FSg'　'functions-FPl'　'functional-Sg'
　　　　　ple　　　　　 plen-s　　　　　plen-itud
　　　　　'full-MSg'　　'full-MPl'　　　'fullness-FSg'
　　　　　comú　　　　 comun-s　　　　comun-itat

---

[13] Regular masculine nominals ending in *s* in the singular add *-os* in the plural; cf. *falsos companys* 'false colleagues (Pl)'. (For an OT analysis of this plural formation, see Bonet *et al.* 2007.)

'common-MSg'	'common-MPl'	'community-FSg'

b. son son-s son-eta
   'sleep-FSg' 'sleeps-FPl' 'sleep-DIM-FSg'
   Aran aran-ès
   (place name) 'from Aran-MSg'
   segon segon-s segon-a
   'second-MSg' 'second-MPl' 'second-FSg'

The presence of a large number of exceptions has been a serious problem for a purely phonological analysis of *n*-deletion. (For a review of standard generative analyses, see Bonet & Lloret 1998: § 4.1; for attempts within OT, see Kikuchi 2002, 2005, and Bonet *et al.* 2004, 2005). An alternative account based on allomorphic terms is more plausible. Every morpheme that displays an n~Ø alternation has two allomorphs: one with final *n* and the other one with a final vowel. This is the view taken by Wheeler (2005: § 10.2), even though he retains the traditional assumption that the selection is done for (stipulated) phonological reasons. Contrary to Wheeler (2005), we assume that the selection is determined by morphological factors: the vowel-final allomorph is selected in singular forms in nouns and in masculine singular forms in adjectives; the unmarked *n*-allomorph is selected elsewhere.The cases relevant for NEC Catalan are illustrated in (28); (28a) illustrates, with one example from (27a), the case that presents allomorphy, and (28b) illustrates a case without allomorphy, with one of the examples from (27b).

(28) a. n~Ø alternation: {*ple* MSg, *plen* elsewhere} 'full'
            ple poder 'full power'
            plen poders, *ple poders 'full powers'

      b. Regular case: *segon* 'second'
            segon classificat 'second classified'
            segon classificats 'second classified-Pl'

For normal prenominal adjectives like *vell* 'old', stem and masculine singular are phonetically identical, [vell], [vell]-[Ø$_{SG}$]. But they are not identical in the case of n-alternating nominals like *ple* 'full', whose stem is [plén] and whose masculine singular is [plé]-[Ø$_{SG}$]. If *s*-deleting prenominal elements were masculine singular forms, like candidate (23b), above, we would predict that in the case of *ple* we should get [plé]-[Ø$_{SG}$] in prenominal position, hence, *ple poders*. We get instead *plen poders*, as indicated in (29), where we show the variation of the adjective *ple* in prenominal position. The masculine and feminine singular (29a,b), and the masculine plural followed by a vowel (29c) do not create a CsC sequence. This sequence is created only when the masculine plural is followed by a C; then the stem *plen* is selected, (29d):

(29)   *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

Under the analysis we have proposed, (29d) is the predicted outcome: lack of number concord forces the -*n* alternant to appear in this position, since the final-vowel alternant occurs in singular (inflected) forms only. (In the two following tableaux, for simplicity we do not consider candidates with the wrong n/Ø choice; we assume that *n*-deleting nominals like *ple* must be distinguished lexically from non-deleting ones like *segon,* a difference that we have indicated in the inputs through the informal notation /ple(n)/.) The form *ple* is selected in the masculine singular and *plen*, the bare stem, appears in other inflected forms and in derivatives.

(30) *plens 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				*	*	*

 The selection of the final-vowel alternant in (masculine) singular concord is illustrated in tableau (31).

(31) *ple acord* 'full agreement (MSg)'

ple(n),Ø_SG, s_PL acord-Ø_SG	MAX (SEG)	MATCH	*CsC	CONC	MAX (MPH)	*FEAT
a. ☞ ple-Ø_SG acord-Ø_SG						**
b. plen acord-Ø_SG				*!	*!	*

 In sum, by splitting concord we have been able to account for the facts of NEC Catalan concerning a very specific case of *s*-loss without resorting to (parochial) morph-specific constraints or unmotivated allomorphy (i.e. Ø for plural). Some of the empirical outcomes predicted by factorial typology are worth commenting. NEC Catalan illustrates a pattern in which the phonological markedness constraint *CsC is interspersed between morphological constraints and different types of faithfulness constraints. Most varieties of Catalan are not sensitive to the markedness constraint *CsC. This constraint is ranked low in these varieties and that causes the plural morpheme to surface systematically. Rossellonese Catalan illustrates the opposite pattern: the very high ranking of *CsC prevents any interconsonantal *s* to surface. Finally, an unattested pattern is predicted by ordering MATCH below MAX(MPH). Under such a situation, having a non-matching singular element will be preferred to having a bare root (with a missing morpheme). Thus, for an example like the one illustrated in (30), *plens poders*, the winning candidate would be the unattested form in (30b), 'ple-[Ø_SG] poder-[s_PL]'.

In the next sections we shall see other asymmetries between prenominal and postnominal elements involving true allomorphy that can also be better explained under the assumption of split concord.[14]

---

[14] In this paper we do not analyze the situation illustrated in (12) in which a syntactic gap prevents "*s*-deletion" (*un_ cotxes grocs* vs. *uns de grocs*, **un_ de grocs*). These cases involve more intricate syntactic matters that force us to leave them for future research.

4. Spanish V~Ø alternation

4.1. The data

In Spanish, certain lexical elements show apparent vowel deletion when they occur prenominally, but not postnominally, within the DP.[15] The examples below include practically all the prenominal elements subject to the V~Ø alternation. We abstract away from the fact that prenominal and postnominal position of a specific element often entails some semantic difference. In (32a) and (33a) the relevant element appears in prenominal position and it surfaces without a final vowel. The final vowel is present when the relevant element is postnominal, (32b), (33b).[16] In (33) the alternation is found only in the context of masculine nouns, while in (34) the alternation can be found with both masculine and feminine nouns, the modifier being invariable with respect to gender. Gender is indicated in cases where a contrast can be found between masculine and feminine forms.

(32) a. algún compañero
          some fellow-M
          ningún libro
          no book-M
          primer día
          first day-M
          tercer cumpleaños
          third birthday-M
          mi niño
          my child-M
          tu niño
          your child-M
          su niño
          his/her/their child-M
          buen caso
          good case-M
          mal día
          bad day-M

      b. compañero algun**o**
          fellow-M some-M
          libro ningun**o**
          book-M none-M
          Alfonso primer**o**
          Alfonso-M first-M
          Carlos tercer**o**
          Carlos-M third-M
          niño m**í**o
          child-M mine-M
          niño tuy**o**
          child-M yours-M
          niño suy**o**
          child-M his/her/their-M
          caso buen**o**
          case-M good-M
          día mal**o**
          day-M bad-M

(33) a. cualquier libro
          any book-M
          cualquier libreta
          any notebook-F

      b. libro cualquier**a**
          book-M any
          libreta cualquier**a**
          notebook-F any

---

[15] Italian has a similar phenomenon, even though additional facts related to consonant clusters complicate matters slightly.

[16] The final vowel also appears when there is no overt noun in the DP (cf. *Tengo un libro* 'I have a/one book' vs. *Tengo uno* 'I have one'; *Ningún libro* 'no book' vs. *No he leído ninguno* 'I haven't read any'). We will not discuss these cases here because the presence of a phonologically empty N might involve movement operations that fall beyond the scope of this paper. These cases are related to the Catalan examples mentioned in note 14.

gran momento   momento grand**e**
great moment-M   moment-M great
gran persona   persona grand**e**
great person-F   person-F big

Comparing (32a) and (32b), notice first that the Ø alternant is not possible when the noun is feminine singular or plural (either masculine or feminine).

(34) a. algún   compañero
         some fellow-MSg
      b. algun**a**   compañera   *algún compañera
         some-FSg   fellow-FSg
         algun**os**   compañeros   *algún compañeros
         some-MPl   fellow-MPl
         algunas   compañeras   *algún compañeras
         some-FPl   fellow-FPl

In the case of gender invariable elements, like *gran ~grande* and *cualquier ~cualquiera*, the alternation is found when the noun is masculine or feminine singular (as in the examples in (35a), repeated from (33)), but not when the noun is plural, as illustrated in (35b).

(35) a. gran   momento
         great   moment-M
         gran   persona
         great   person-F
      b. grand**es** momentos   *gran momentos
         great-Pl moment-MPl
         grand**es** personas   *gran personas
         great-Pl people-FPl

A second fact that will be crucial to our analysis concerns the elements that are affected by the V~Ø alternation. Even though all the elements affected by it either belong to functional categories or are adjectives like 'good' or 'bad', it is not the case that any masculine singular or invariable singular element with those properties will be subject to "deletion" when it appears in prenominal position. For instance, even though numerals like *primer(o)* 'first' and *tercer(o)* 'third' are subject to the alternation, other numerals, like *noveno* 'ninth', are not (see (36a)); notice that a form like *novén* would not present any syllabification problem for Spanish (cf. *bien* 'well'). A similar contrast can be found between the quantifiers *alguno* 'some' and *todo* 'all' (see (36b)): *todo* does not exist without the final vowel, *tod* (cf. *Madrid*).

(36) a. tercer   cumpleaños   *tercer**o** cumpleaños
          third   birthday-MSg
         *novén   cumpleaños   noven**o** cumpleaños
          ninth   birthday-MSg
      b. algún   compañero   *algun**o** compañero
          some   fellow-MSg
         *tod   compañero   tod**o** compañero

    all fellow(s)-MSg

  Similarly, even though adjectives like *buen(o)* 'good' and *mal(o)* 'bad' appear with the Ø alternant in prenominal position, *buen* and *mal*, (37a), other adjectives cannot be subject to "deletion": *viejo* 'old' (*viej*, cf. *reloj* 'watch'), *pleno* 'full' (**plen*), *raro* 'rare' (**rar*), *escaso* 'little' (**escás*), (37b).[17]

(37) a. buen caso   *buen**o** caso
     good case-MS
     mal día   *mal**o** día
     bad day-MS
   b. *viej reloj   viej**o** reloj
     old watch
     *plen invierno   plen**o** invierno
     full winter
     *rar ejemplar   rar**o** ejemplar
     rare specimen
     *escás margen   escas**o** margen
     little margin

  The facts illustrated in (36) and (37) bring us to the conclusion that the possibility of V~Ø alternation has to be specified somehow in the lexical entry of each item; it cannot be predicted from general properties of the grammar.

4.2. Previous approaches

  Older approaches to the quite similar V~Ø alternation in Italian (Vanelli, 1979; Rizzi, 1979; Burzio, 1989) claim or assume that the underlying form of items like *nessun* 'some' have a final vowel, *nessuno*, and that a rule deletes it when the relevant item appears before a noun. Leaving aside the rule formulation, excluded in OT, deletion would have to be lexically restricted; it could not be triggered by some general mechanism. In addition, it would be hard to account for deletion when the relevant item is not adjacent to the noun, as in the sequence *nessun vecchio libro* 'no old book'.
  Bernstein (1993) proposes a syntactic approach to the V~Ø alternation in Italian and Spanish. Her analysis is mostly limited to pairs like *un libro* 'a/one book' vs. bare *uno* 'one' (as in *tengo uno* 'I have one') and does not deal with the prenominal / postnominal asymmetry found with other elements (see note 16). She assumes the existence of a Word Marker Phrase (WM), generated between the category Number (Num) and the (lower) NP, which hosts the *-o* suffix. In sequences like *un libro* 'a/one book' the N (*libr-*) moves to Num as does the suffix *-o*. When the N is absent, as in *uno* 'one', the suffix *-o* moves to an empty Num and moves further to D so it can attach to some phonologically realized element, in this case *un-*. One of the problems with her approach is the very dubious nature of the WM syntactic category, which

---

[17] Conversely, C-final adjectives like *seductor-a* 'captivating', *previsor-a* 'provident', *burlón-a* 'mocking', *parlanchín-a* 'talkative' that can appear in prenominal position do not add *-o* in the masculine in postnominal position (e.g., *seductor varón, varón seductor, varón *seductoro* 'captivating male', etc.).

moreover is proposed only to account for the *-o* in nouns and in bare *uno* but not for other instances of *-o* (as the one in adjectives like *rojo*; cf. *un libro rojo* 'a red book'). Another even more serious problem is that this type of approach does not enlighten us at all as to the causes of the asymmetries illustrated in (32) and (33). In her analysis she implicitly assumes that in *un libro* the determiner surfaces without a final *-o* because that is the form a determiner is supposed to have. But this type of approach does not say anything as to why an adjective like *buen(o)* 'good' surfaces without an *-o* in prenominal position (exactly like *un* does) and with *-o* in postnominal position (like many other elements).

4.3. Analysis under split concord

Since the V~Ø alternation is not predictable (see section 4.1), it has to be specified somehow in the lexical entry of exceptional items (like *primer(o)* 'first'), while regular items (like *noveno* 'ninth') have the minimal lexical specifications. We assume that, since inflection is a regular property of nominal elements in languages like Catalan and Spanish, the fact that they are inflected is not part of their lexical entry. Being a regular property, this information is not supplied in the lexicon, but is expressed in the grammar. The fact that a particular category (D, A, N) is subject to inflection can be expressed in different places depending on the model of grammar assumed (In Distributed Morphology, for instance, this information could be contained in the list of presyntactic morphosyntactic features.) Only in the case of idiosyncratic, exceptional elements that lack inflection will a lexical mark become necessary. This is the case of the so-called invariable adjectives which are not marked for gender (Spanish *amigo fiel* 'friend-MSg faithful-Sg', *amiga fiel* 'friend-FSg faithful-Sg', *amigos fieles* 'friend-MPl faithful-Pl', *amigas fieles* 'friend-FPl faithful-Pl',) or in cases of total lack of inflection (Catalan *cap desig* 'no desire-MSg', *cap desitjos* 'no desire-MPl', *cap gana* 'no desire-FSg', *cap ganes* 'no desire-FPl'). Thus for *noveno,* a regular adjective, the relevant morphosyntactic operations will add inflectional features from the lexicon and will yield a structure with a FLEC constituent which includes both gender and number. However, adjectives like *primer(o)* are exceptional in that their lexical entries include two stem allomorphs, one that is regular, like the adjective *noveno*, and one that is idiosyncratic, like the adjective *fiel*. Thus the lexical entry of the adjective *primer(o)* will contain the regular stem allomorph *primer* and the irregular bare stem allomorph *primer¬*, where the symbol '¬' indicates that the stem is marked for not undergoing inflection.

As claimed in section 2, syntatic movement by the Noun triggers agreement on the postnominal elements within the DP. In postnominal position, then, there is no difference between numerals like *primer(o)* and *noveno*. They will surface with the expected, unmarked, inflectional morphs for Spanish (*-o* for the masculine, *-a* for the feminine; Ø for the singular, *-s* for the plural): *primero* (MSg), *primera* (FSg), *primeros* (MPl), *primeras* (FPl); *noveno* (MSg), *novena* (FSg), *novenos* (MPl), *novenas* (FPl). (38) illustrates the presence of postnominal inflection with respect to gender.

(38) a. piso   primer**o**
      floor-M first-M
      planta   primer**a**
      floor-F first-F

b. piso   noven**o**
   floor-M ninth-M
   planta   noven**a**
   floor-F ninth-F

As shown in section 4.1, since the V~Ø alternation is not predictable, it has to be specified somehow in the lexical entry of each item. On the one hand, regular items like *noveno* have the minimal lexical specifications (among others, the stem *noven*); being a regular adjective, the relevant morphosyntactic operations will pick up inflectional features from the lexicon and will yield a structure with a FLEC constituent which includes both gender and number. On the other hand, the lexical entry of exceptional items like *primer(o)* will include, along with the regular stem *primer* (as for *noven*), the idiosyncratic, bare stem allomorph *primer¬*, where the symbol '¬' indicates that the stem is marked for not undergoing inflection.

At PF there is an asymmetry between prenominal elements and postnominal ones because the former, contrary to the latter, have not been assigned any inflection. In a parallel way to what we saw for NEC Catalan, nouns and postnominal elements, as in *piso noveno* or *piso primero*, enter constraint evaluation with an ending in the input: *pis-*[$_{\text{O}_M}$ Ø$_{\text{SG}}$] *noven-*[$_{\text{O}_M}$ Ø$_{\text{SG}}$], *pis-*[$_{\text{O}_M}$ Ø$_{\text{SG}}$] *primer-*[$_{\text{O}_M}$ Ø$_{\text{SG}}$]. Prenominal elements, however, yield a contrasting result. In the regular cases, like *noveno piso*, the input to PF contains the stem *noven* and all the possible inflectional endings, as shown in (39).

(39) Regular cases (*noveno-novena-novenos-novenas*)

   a. Lexical entry: *noven*

   b. Input to PF (prenominal):   noven,[$_{\text{FLEC}}$ o$_M$, a$_F$; Ø$_{\text{SG}}$, s$_{\text{PL}}$],

       Shorthand: noven,FLEC

In the exceptional cases, like *primer piso*, the input to PF contains the two allomorphs, which differ solely in the possibility of lacking inflection, as shown in (40).

(40) 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$_{\text{SG}}$, s$_{\text{PL}}$] ⎦

       Shorthand: primer¬
                    primer,FLEC

The constraints that are relevant in accounting for the V~Ø alternation include some of the ones that were already introduced for NEC Catalan, namely MAX(SEGMENT), MAX(MPH), CONCORD, and *FEAT. In a parallel way to what we saw for NEC Catalan, for inputs like *noveno*, MAX(MPH) is violated by candidates lacking inflectional morphemes present in the input. Crucially, however, for inputs like

ningun(o), MAX(MPH) is not violated by candidates without inflection, because this item can exist as a bare stem (a word without inflection, *ningun¬*). In the case of CONCORD, this general constraint has to be split into more specific constraints for marked choices in nominal inflection, feminine being more marked than masculine, and plural being more marked than singular. The more specific constraints do not have to be ranked with respect to each other and will appear as CONC(F,PL) in the tableaux. The ranking of the relevant constraints is given in (41). Justification for the splitting of CONC and some aspects of the constraint ranking can be found below. The constraint MATCH is not mentioned in the rest of this section because it is not crucial for any of the cases to be discussed here.

(41) Ranking: MAX(MPH), CONC(F,PL) >> *FEAT >> CONC, MAX(SEGMENT)

The tableau below illustrates, with the sequence *algún piso primero* 'some first floor', the prenominal / postnominal asymmetry with two masculine elements that are subject to the V~Ø alternation, *algun(o)* and *primer(o)*. The inflectional feature complex of the input elements *piso* and *primero*, [o_M $Ø_{SG}$], is shortened to [o_{MSG}]. Similar abbreviations will be used in the rest of this section.

(42) *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*	**	

In (42) the constraint CONC(F,PL) is irrelevant because the N is masculine singular. The constraint *FEAT favors candidates with no inflection, but the ranking of MAX(MPH) above it rules out the candidate with fewer inflectional endings, (42b). In this candidate, MAX(MPH) is violated only by postnominal *primer* because the input contains specific inflectional morphemes that are not present in the output; prenominal *algún* satisfies MAX(MPH) because it is faithful to the bare stem *algun¬*, present in the input. *FEAT, ranked above CONC, still forces the candidate with *algún* to win over a candidate with *alguno*. In the tableaux that appear in the rest of this section, for clarity we do not show candidates with an N or postnominal elements without the desired inflection.

The lexical entry of a numeral like *noveno* 'ninth', unlike *algun(o)* or *primer(o)*, does not have an uninflected form, **novén*. The tableau in (43) shows how this ungrammatical form is ruled out in the sequence *noveno piso* 'ninth floor'. A crucial difference between items like *tercer(o)* and *noveno* is that *noveno* does not have an inflectionless bare allomorph *noven¬*; therefore, a candidate without inflection, like *novén* pis-o$_{MSG}$ in, (43b) violates MAX(MPH).

(43) *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$_{MSG}$	**!		**	**	

As mentioned above, feminine and plural are marked morphemes, compared to masculine and singular. As for the masculine, we know that when there are gender conflicts in coordinate elements, the masculine is chosen in concord, as illustrated below.

(44) a. El   sol   y   la   luna   son bonit**o**s
         the-M sun-M   and the-F   moon-F are pretty-MPl
      b. *El   sol   y   la   luna   son bonit**as**
         the-M sun-M   and the-F   moon-F are   pretty-FPl

With respect to number, it is also well established that singular is less marked than plural. For instance, in Spanish, when agreement is not possible, as in impersonal sentences with wheather verbs or *se* constructions, the verb appears in the singular (45a,c), while there is regular agreement when there is an explicit subject (45b,d).

(45) a. Llovió
         rained.3Sg
         'It rained'
      b. Llovieron   preguntas
         rained.3Pl questions
         'Questions poured'
      c. Se sospecha lo   peor
         se fear.3Sg the worst
         'The worst is feared'
      d. Todos   sospechan lo   peor
         all.3Pl   fear.3Pl   the worst
         'All of them fear the worst'

In the V~Ø alternation the marked character of feminine and plural over masculine and singular also shows up: as we saw (see (34b)), the alternation never affects feminines or plurals; it only affects a form which is masculine singular (or invariable). The examples *alguna planta* 'some floor' and *algunos pisos* 'some floors' illustrate how candidates with *algún* or other not fully inflected forms are ruled out.

(46) *alguna planta* 'some floor'

algun¬ plant-a$_{FSG}$ algun,FLEC	MAX (MPH)	CONC (F,PL)	*FEAT	CONC	MAX (SEG)
a. ☞ algun-a$_{FSG}$ plant-a$_{FSG}$			4*		
b. algún plant-a$_{FSG}$		*!	**	**	

In (46), candidate (46b) violates CONC(F,PL) (and is ruled out by it) because the N is feminine and *algún* is not. This type of examples justify the ranking CONC(F,PL) >> *FEAT.

(47) *algunos pisos* 'some floors'

algun¬ pis-o$_M$-s$_{PL}$	MAX (MPH)	CONC (F,PL)	*FEAT	CONC	MAX (SEG)

algun (FLEC)				
a. ☞ algun-o$_M$-s$_{PL}$ pis-o$_M$-s$_{PL}$			4*	
b. algún-o$_M$ pis-o$_M$-s$_{PL}$	*!	*!	***	*
c. algún-s$_{PL}$ pis-o$_M$-s$_{PL}$	*!		***	*
d. algún pis-o$_M$-s$_{PL}$		*!	**	**

The non-plural modifiers in (47b,d) are ruled out by CONC(F,PL). Candidate (47c) has an inflected modifier, not a bare stem, and violates MAX(MPH) because it lacks a gender morpheme. Tableau (47) justifies the ranking MAX(MPH) >> *FEAT.

We saw in (33) that the invariable items *gran(de)* 'big, great' and *cualquier(a)* 'any' are also subject to the V~Ø alternation, and, in this case, the vowelless form (*gran* and *cualquier*) can cooccur in prenominal position with a feminine singular N, contrary to the cases with regular morphology we have seen so far (cf. *gran persona* 'great person-FSg' in (35a)). In what follows we concentrate only on the *gran-grande* alternation, which constitutes a clearer case than *cualquier(a)*, which nevertheless can be analyzed along the same lines.[18] A first peculiar feature that *gran(de)* has is that it is invariable: it surfaces with the same form, with final *-e*, in postnominal position regardless of the gender of the N (cf. *pueblo grande* 'big town-M', *ciudad grande* 'big city-F'). Moreover, this final *-e* does not correspond to any of the expected vowel endings in nominals, *-o* for masculine and *-a* for feminine (a final *-e* can also be found in both masculine and feminine nouns, like *pase* 'pass-M' and *mole* 'bulk-F'). These two unpredictable characteristics, invariability and exceptional final vowel, must appear in the lexical entry of the adjective. Similarly to items like *algun(o)*, this lexical entry includes a bare, inflectionless, form *grand¬*, which surfaces without the final /d/, *gran*, due to cluster simplification (common in current Spanish). For the *grande* allomorph, we assume that the input to constraint evaluation does not have full inflection as the one which was illustrated in (39) for *noven(o)*, but has a nonspecified GEN(DER) feature with the (also lexically specified) ending *-e*. With respect to number, *grande*, having (unspecified) gender, is like any other adjective and thus can be either singular or plural.

(48) Input to constraint evaluation for prenominal *gran-grande-grandes*
    a. $\left\{ \begin{array}{l} \text{grand}\neg \\ \text{grand,}[_{FLEC}\text{GEN=e; }\varnothing_{SG}\text{, s}_{PL}] \end{array} \right\}$

    b. Shorthand: grand¬
                grand,FLEC(GEN=e)

The syntax imposes inflection on the adjective when it appears in postnominal position and thus it will surface as *grande(s)* (this is as much of an inflection as it can

---

[18] *Cualquiera* was formed from two independent words, *cual* 'which' and the verbal form *quiera* (3rd person singular present subjunctive of the verb 'to want'). The final vowel *-a* was then a verbal ending. We can assume that the final *-a* was reanalyzed as a gender-related vowel, a word marker in the sense of Harris (1991). Some evidence for this reanalysis is that, even though in the normative plural form of *cualquiera* the plural appears after the first element, *cualesquiera*, it is becoming more and more common to hear a plural *cualquieras*, with the plural morph at the end of the whole item.

get). In prenomimal position inflection will not have been imposed and (48) will enter constraint evaluation. We illustrate the unusual appearance of the vowelless form with a feminine noun with the sequence *gran persona* 'great person-F', and the full form with the plural *grandes personas* 'great-Pl persons-FPl'.

(49) *gran persona* 'great person'

grand¬ person-a$_{FSG}$ grand (GEN=e)	MAX (MPH)	CONC (F,PL)	*FEAT	CONC	MAX (SEG)
a. grand-e$_{GSG}$ person-a$_{FSG}$		*	****!	*	
b. ☞ gran person-a$_{FSG}$		*	**	*	*

Both (49a) and (49b) violate CONC(F,Pl) (and consequently also CONC) because the N requires all the other elements to be feminine, which is not the case here. The constraint *FEAT breaks the tie in favor of *gran persona*, with less inflection than its competitor **grande persona*.

Similarly to what we saw in (47), in (50), which contains a plural N, a fully inflected candidate (50a), is the optimal candidate. Even though this candidate fares worse than its immediate competitors with respect to *FEAT, it succeeds in expressing concord with a marked feature, Plural (partial satidfaction of CONC (F,PL)), and in having both a gender and a number morpheme (satisfaction of MAX(MPH)). In (49) and (50) we have ignored a candidate with the feminine morph *-a* (**granda persona* 'big-FSg person-FSg', **grandas personas* 'big-FPl person-FPl'). Following Bonet *et al.* (2007), we assume that unmarked endings of this type are ruled out by the constraint RESPECT, which demands lexical specifications (here, GEN=e) to be preserved in the output.

(50) *grandes personas* 'great persons'

grand¬ person-a$_{F}$-s$_{PL}$ grand,FLEC(GEN=e)	MAX (MPH)	CONC (F,PL)	*FEAT	CONC	MAX (SEG)
a. ☞ grand-e$_{G}$-s$_{PL}$ person-a$_{F}$- s$_{PL}$		*	4*	*	
b. gran-s$_{PL}$ person-a$_{F}$- s$_{PL}$	*!	*!	***	*	*
c. gran person-a$_{F}$- s$_{PL}$		**!	**	**	*

5. Spanish *el~la* alternation

5.1. The data

A well-known exception to the generalization that, in Spanish, nominals in the DP agree with the NP head in gender and number is, in Standard Spanish, the appearance of the masculine singular definite article *el* disagreeing with singular feminine nouns beginning with stressed /á/ (Harris 1987, 1989, 1991, Álvarez de Miranda 1993). (51a) illustrates cases of article disagreement, and includes a postnominal agreeing adjective which shows the feminine character of the noun. (51b-e) show that disagreement does not take place when one or more of the necessary conditions is not met: the initial /a/ must be stressed, must be adjacent to the definite

article, must belong to the category noun, and must be singular. (51f) shows some exceptions. Nonorthographic stress is supplied.

(51) a. *Article disagreement*

el	árma	nueva		el	hámbre	aquella
the-M	weapon-F	new-F		the-M	hunger-F	that-F

el	águila	pequeña			el	área	fija
the-M	eagle-F	small-F			the-M	area-F	fixed-F

b. *Only stressed initial á*

la	alméndra		la	actríz
the-F	almond-F		the-F	actress-F

la	astúcia		la	hablánte
the-F	astuteness-F		the-F	speaker-F

c. *Only if adjacent*

la	nueva	árma
the-F	new-F	weapon-F

la	única	águila
the-F	only-F	eagle-F

d. *Only nouns*

la	hábil	maniobra		la$_{Pr}$	árma$_V$	
the-F	skillful-F	move-F		her-F	arms	's/he arms her'

la	ántes$_{Adv}$	mencionada
the-F	before	mentioned-F

e. *Only in the singular*

las	ármas
the-FPl	weapon-FPl

las	águilas
the-FPl	eagle-FPl

f. *Exceptions*

la	Ágata		la	árabe$_N$
the-F	'proper name-F'		the-F	arab-F (woman)

la	háche		la	ástro
the-F	letter h-F		the-F	(movie-)star-F

In colloquial usage that follows prescriptive norms (Real Academia Española 1931), disagreement affects the definite article and also *un* 'a', *algún* 'some', *ningún* 'no': *un*-M *arma*-F 'a weapon', *algún*-M *águila*-F 'some eagle', *ningún*-M *área*-F 'no area'. We will refer to this system in which some determiners ending in –*a* in the feminine singular take the masculine form when immediately preceding a noun beginning with /á/, as System I. But in colloquial speech, disagreement can extend to other lexical elements and to other contexts. In a common extension that we will call System II, all prenominal elements, no matter whether adjacent or not, appear in the masculine singular, instead of the expected feminine singular, before a feminine singular noun beginning with /á/. System II is illustrated in (52a). The example in (52b) shows that the same lexical element, *nuevo/a* that disagrees in prenominal position (first example in (52a)) agrees regularly in postnominal position. (52c), which corresponds to the first example in (52a), presents agreement because the DP is plural.

(52) a. el   nuevo   arma   secreta
         the-M new-M weapon-F   secret-F

      todo   el   agua   perdida
      all-M   the-M   water-F   lost-F

      este   ave   migratoria
      this-M bird-M   migratory-F

      un   amplio   área   abierta   al   público
      a-M   wide-M   area-F   open-F   to-the   public

      aquel   área   geográfica
      that-M   area-F   geographic-F

      el   mismo   agua   parecerá   fría
      the-M   same-M   water-F   will-seem   cold-F

      todo   su   área   delantera
      all-M   her-M/F   area-F   front-F

   b. el   arma   nueva
      the-M weapon-F   new-F

   c. las   nuevas   armas   secretas
      the-FPl   new-FPl weapon-FPl   secret-FPl

5.2. *Previous analyses*

For System I, a variety of analyses have been proposed. Harris (1987) derives cases like *el água* from /ella á.../ via *a* deletion before *á* (ell) and depalatalization (el). Harris (1989) does not decide between two alternative options: lexical choice of the allomorphs *el/la* or a late *la --> el* phonological rule. Halle *et al.* (1991) conclude that it should be a phonological rule, namely *la --> l* /$_N$[___$_N$[*á*..., the vowel *e* being supplied by epenthesis. Cutillas (2003: 175-184) proposes an OT analysis that avoids the ad hoc character of previous work. His solution is based on the fact that, in Spanish, sequences of identical vowels tend to be avoided (independently of the *el~la* alternation), and that identical vowels do not fuse when the second one is stressed. He

proposes two allomorphs for the feminine singular definite article, {el, la}. Given allomorphic choice through Evaluation (see Mascaró 2007, and references), the most harmonic allomorph is selected. The candidate *la água* is disfavored by a constraint *V_iV_i banning identical vowel sequences, and fusion of both a's (l[á]gua) is ruled out by UNIFORMITY-σ, which prohibits fusion if the resulting vowel is stressed. The result is that the allomorph *el* is chosen in *el água*, but fusion is preferred in *la amiga* --> *l[a]miga* because *el amiga* violates ONSET. In our view, all these accounts are problematic, but what is important for our present purposes is that they cannot be extended to the variety under examination here, System II, which is the one showing prenominal / postnominal asymmetries. For System II, it is impossible to sustain an analysis based either on a specific *la --> el* or *la --> l* rule, or on avoidance of *aá, given that adjacency of the disagreeing prenominal element and the noun is not necessary. In (53a) the ill-formedness of *la* in **toda la água* might be interpreted as phonological because of *aá, but this cannot be extended to *toda*, whose final *a* does not immediately precede *á*. In (53b,c), moreover, *todo* and *el* are separated from the *á*-initial potential trigger by an invariable prenominal element.

(53) a. todo   el   água   *toda   la   água
          all-M   the-M   water-F   all-F   the-F   water-F

      b. todo   su   água   *toda   su   água
          all-M   the-M/F water-F   all-F   the-M/F water-F

      c. el   gran   árma   *la   gran   árma
          the-M   big-M/F weapon-F   the-F   big-M/F weapon-F

     Spanish split concord (System II) is thus a case of regular postnominal agreement and prenominal non-agreement (with default masculine gender assignment) that is triggered by a small class of singular nouns. The fact that all these nouns begin with stressed *á* is a residue of an older stage (System I or, perhaps, an even older stage) in which the phenomenon had a true phonological conditioning.

5.3. Analysis under split concord

     Since no regular phonological analysis is possible, we must assume that the class of around 25 nouns that trigger split agreement are lexically marked. The lexical mark will trigger deletion of the feminine feature [F] for this class of items in the singular only at the input to PF.[19] In Distributed Morphology terms, this would be an impoverishment operation that can be expressed as in (54).

(54) [F] → Ø / __[Sg] for *agua, arma, ave, …*

     As illustrated in (55), where the FLEC constituent is shown below each stem, a noun like *agua* is lexically feminine, [F], (55a). Movement in syntax will determine

---

[19] The fact that deletion of the [F] feature has to be restricted to the singular must be a residue from a previous stage at which there was a clear phonological effect: only the singular *la*, and not the plural *las*, met the environment for the *aá sequence that triggered the process.

any surface postnominal element to acquire the feature [F] as in (55b). At the input to PF the [F] feature will be deleted, (55c), and the unmarked, default gender, [M], will be chosen for prenominal elements, (55d).

(55) *Este agua fría* 'this cold water'

a. Input to Syntax	b. Syntax	c. Input to PF	d. Output
est- fri- agu-	*est- agua fría*	*est- agua fría*	*este agua fría*
[ ] [ ] [F Sg]	[ ] [F Sg] [**F Sg**]	[ ] [_ Sg] [F Sg]	[**M Sg**] [_ Sg] [F Sg]

In the previous section we have seen cases in which a bare inflectionless form surfaces in prenominal position. Here this possibility is still available for items like *algún* (cf. *algún agua fría* 'some cold water'), but an additional constraint *FEM (feminine is prohibited) forces the unmarked masculine gender to surface for items that require inflection. In the tableaux of this section we omit the constraints MAX(SEGMENT) and CONC, because they are not relevant to the issues being discussed (their inclusion would not alter the results).

In a DP like *toda la sopa fría* 'all the cold soup', the non-exceptional feminine noun *sopa* 'soup' triggers syntactic postnominal agreement; at the output of syntax the representation of the DP is *tod*,FLEC *l*,FLEC *sopa*-FSg *fría*-FSg.[20] Postsyntactic feminine concord is enforced by CONC(F,PL) and affects nonvacuously all prenominal elements. The tableau in (56) also provides evidence for the ranking CONC(F,PL) >> *FEM.

(56) *toda la sopa fría* 'all the cold soup'

tod,FLEC l,FLEC sop-a$_{FSG}$ frí-a$_{FSG}$	MAX (MPH)	CONC (F,PL)	*FEM	*FEAT
a. ☞ tod-a$_{FSG}$ l-a$_{FSG}$ sop-a$_{FSG}$ frí-a$_{FSG}$			4*	8*
b. tod-a$_{FSG}$ el$_{MSG}$ sop-a$_{FSG}$ frí-a$_{FSG}$		*!	***	8*
c. tod-o$_{MSG}$ el$_{MSG}$ sop-a$_{FSG}$ frí-a$_{FSG}$		**!	**	8*

The DP *todo el agua fría* 'all the cold water', (57), contains the exceptional feminine noun *agua*. In the syntax, it is feminine and triggers feminine postnominal agreement, yielding *tod*,FLEC *l*,FLEC *agua*-FSg *fría*-FSg, but in the input to PF the singular noun *agua* loses its [F] feature (agu-a$_{SG}$). Postsyntactic feminine concord (CONC(F,PL)) requires any feminine noun to trigger gender agreement with other nominals in the DP. Since *agua* has lost its F feature, CONC(F,PL) is not active. The masculine forms are favored by the constraint *FEM that penalizes the more marked member of the M, F gender pair. A form without inflection (see (57d)) is ruled out by MAX(MPH). A form like **todo el agua frío* with general disagreement (not shown in the tableaux) would imply a change of the already inflected input *fría* to *frío*, hence a faithfulness violation.

(57) *Todo el agua fría* 'all the cold water'

---

[20] Our analysis does not hinge on a particular lexical representation of the definite article, which has the paradigm *el, la, los, las*. A reasonable assumption, though, is that there is an allomorph *el* for the masculine singular, and that an allomorph *l* appears elsewhere, with the regular inflectional markers. As a convenient shorthand we use 'l,FLEC'.

tod,FLEC l,FLEC agu-a$_{-SG}$ frí-a$_{FSG}$	MAX (MPH)	CONC (F,PL)	*FEM	*FEAT
a. tod-a$_{FSG}$ l-a$_{FSG}$ agu-a$_{-SG}$ frí-a$_{FSG}$			***!	7*
b. tod-a$_{FSG}$ el$_{MSG}$ agu-a$_{-SG}$ frí-a$_{FSG}$			**!	7*
c. ☞ tod-o$_{MSG}$ el$_{MSG}$ agu-a$_{-SG}$ frí-a$_{FSG}$			*	7*
d. tod l agu-a$_{-SG}$ frí-a$_{FSG}$	4*!		*	***

Since deletion only affects the singular form, plurals will show regular prenominal agreement, as shown in (58):

(58) *Todas las aguas frías* 'all the cold waters'

tod,FLEC l,FLEC agu-a$_F$-s$_{PL}$ frí-a$_F$-s$_{PL}$	MAX (MPH)	CONC (F,PL)	*FEM	*FEAT
a. ☞ tod-a$_F$-s$_{PL}$ l-a$_F$-s$_{PL}$ agu-a$_F$-s$_{PL}$ frí-a$_F$-s$_{PL}$			****!	8*
b. tod-a$_F$-s$_{PL}$ l-o$_M$-s$_{PL}$ agu-a$_F$-s$_{PL}$ frí-a$_F$-s$_{PL}$		*!	***!	8*
c. tod-o$_M$-s$_{PL}$ l-o$_M$-s$_{PL}$ agu-a$_F$-s$_{PL}$ frí-a$_F$-s$_{PL}$		**!	**	8*

6. Concluding remarks

In this paper we have examined three cases drawn from Catalan and Spanish in which an asymmetry between prenominal and postnominal elements within the DP arises with respect to inflectional features. We have argued that the prenominal / postnominal asymmetry, present also in many other languages, arises due to postnominal concord taking place in the syntax systematically and prenominal concord being established through constraint evaluation at PF. In one of the cases, from NEC Catalan, the failure to agree prenominally is controlled by a phonological markedness constraint *CsC interspersed with morphological constraints. We have shown that this context is avoided neither through the use of the singular form nor by simple deletion of the offending sibilant, but through the use of a bare stem, without inflection. The constraint that penalizes nominal items that have lost elements in the FLEC constituent, MAX(MPH), is ranked fairly low in NEC Catalan, but it becomes crucial in accounting for the two cases from Spanish examined in this paper. The V~Ø alternation found in items like *ningun(o)* 'none' and *primer(o)* 'first', but not in items like *noveno* 'ninth', is both regulated by MAX(MPH) and by a lexical difference: *ningun(o)* and *primer(o)* have two allomorphs that differ solely in the possibility of existing as uninflected words, and thus can bypass the effects of MAX(MPH), while *noven(o)* does not have that possibility. In this case the irrelevance of the *CsC constraint and the presence of MAX(MPH) force the inflected form to surface in prenominal position. We have seen another case in which lexical specifications play a crucial role: in varieties of Spanish (System II) in which certain feminine singular lexical items trigger feminine agreement to their right and masculine agreement to their left, these feminine singular items lose their F feature in the input to PF. The combination of MAX(MPH) with the markedness constraint *FEM forces the masculine to surface prenominally with elements of the *noveno* type.

In this paper we have further shown that it is possible to account for morphophonological alternations in a model of OT in which all constraints are universal; it is not necessary to resort to parochial constraints to deal with the peculiar cases we have examined here. All idiosyncratic properties that affect individual

lexical items are part of the lexical entry of those items; they are not encoded in constraints.

References

Álvarez de Miranda, Pedro. 1993. El alomorfo de la y sus consecuencias. *Lengua española actual* 15/1: 5-43.

Bernstein, Judy B., 1993. *Topics in the Syntax of Nominal Structure across Romance.* PhD dissertation, The City University of New York.

Bonet, Eulàlia, Lloret, Maria-Rosa, 1998. *Fonologia catalana.* Barcelona: Ariel.

Bonet, Eulàlia, Lloret, Maria-Rosa, 2002. OCP effects in Catalan cliticization. *Catalan Journal of Linguistics* 1: 19-39.

Bonet, Eulàlia, Lloret, Maria-Rosa, Mascaró, Joan, 2004. Crazy rules and markedness in Optimality Theory. Paper presented at the Workshop on Markedness in Phonology, 27th Generative Linguistics in the Old World (GLOW-27), Thessaloniki, April 18-21, 2004.

Bonet, Eulàlia, Lloret, Maria-Rosa, Mascaró, Joan, 2005. How unnatural and exceptional can languages become? Paper presented at the Phonology Workshop: Crazy Rules and Lexical Exceptions, 3rd International Conference on Language Variation in Europe (ICLaVE-3). Amsterdam, June 23-25, 2005. [Handout available at http://www.uv.es/foncat/cat/Treballs/15.Bonet.et.al.pdf/.]

Bonet, Eulàlia, Lloret, Maria-Rosa, Mascaró, Joan, 2007. Allomorph selection and lexical preferences: Two case studies. *Lingua* 117: 903-927.

Burzio, Luigi, 1989. Prosodic reduction. In: Kirschner, C., De Cesaris, J. (Eds.), *Studies in Romance Linguistics. Selected Papers from the Seventeenth Linguistic Symposium on Romance Languages.* John Benjamins, Amsterdam, 51-68.

Cinque, Guglielmo, 1996. The antisymmetric programme: Theoretical and typological implications. *Journal of Linguistics* 32: 447-464.

Cinque, Guglielmo, 2005. Deriving Greenberg's Universal 20 and Its Exceptions. *Linguistic Inquiry* 36, 315-332.

Croft, William, and Deligia Deligianni. 2001. Asymmetries in NP word order. Paper presented at the International Symposium on Deictic Systems and Quantification in Languages Spoken in Europe and Northern and Central Asia, Udmurt State University, Izhevsk, Russia, May 2001. [Available at http://lings.ln.man.ac.uk/ Info/staff/WAC/Papers/NPorder.pdf.]

Cutillas, Juan Antonio, 2003. *Teoría lingüística de la optimidad. Fonología, morfología y aprendizaje.* Servicio de Publicaciones de la Universidad de Murcia, Murcia.

Fouché, Pierre, 1924. *Phonétique historique du roussillonnais.* Privat, Toulouse. Reimp. Genève: Slatkine Reprints, 1980.

Guasti, Maria Teresa, Rizzi, Luigi, 2002. Ageement and Tense as distinct syntactic positions: evidence from acquisition. In: Cinque, Guglielmo (Ed.), *Functional Stucture in DP and IP. The Cartography of Syntactic Structures, Volume 1.* Oxford, Oxford University Press, 167-194.

Halle, Morris, Harris, James W., Vergnaud, Jean-Roger, 1991. A reexamination of the Stress Erasure Convention and Spanish stress. *Linguistic Inquiry* 22: 141-158.

Halle, Morris, Marantz, Alec, 1993. Distributed Morphology and the pieces of inflection. In: Hale, Kenneth, Keyser, Samuel J. (Eds.), *The View from Building 20. Essays in Linguistics in Honor of Sylvain Bromberger.* Cambridge, MA, MIT Press. 111-176.

Harris, James W., 1987. Disagreement rules, referral rules, and the Spanish feminine article *el. Journal of Linguistics* 23: 177-183.

Harris, James W., 1989. The Stress Erasure Convention and Cliticization in Spanish. *Linguistic Inquiry* 20: 339-364.

Harris, James W., 1991. The exponence of gender in Spanish. *Linguistic Inquiry* 22: 27-62.

Kikuchi, Seiichiro, 2002. Positional Markedness in Catalan Word-Final Deletion. Paper presented at the 125th Meeting of the Linguistics Society of Japan, Tohoku Gakuin University, November 3-4, 2002. [Handout available at http://www.sal.tohoku.ac.jp/~s_kiku/papers/catalan_deletion_LSJ125.pdf/.]

Kikuchi, Seiichiro, 2005. Relativised Contiguity and Word-Final Deletion in Catalan. *On'in Kenkyu [Phonological Studies]* 8: 25-32. [Available at http://www.sal.tohoku.ac.jp/~s_kiku/papers/kikuchi2005b_catalan_deletion. pdf/.]

Koopman, Hilda, 2003. Inside the "Noun" in Maasai. In: Anoop Mahajan (Ed.), *Syntax at Sunset 3: Head Movement and Syntactic Theory (UCLA Working Papers in Linguistics, no. 10)*, 77-115.

Lloret, Maria-Rosa, 1996. El tractament de les formes nominals 'invariables' quant a nombre. *Caplletra. Revista internacional de filologia* 19 (Tardor 1995): 215-227.

Mascaró, Joan, 2007. External allomorphy and lexical representation. *Linguistic Inquiry* 38.4.

McCarthy, John J., 2002. *A Thematic Guide to Optimality Theory*. Cambridge: Cambridge University Press.

McCarthy, John J., Prince, Alan, 1995. Faithfulness and Reduplicative Identity. In: Beckman, Jill, Walsh Dickey, Laura, Urbanczyk, Suzanne (Eds.), *University of Massachusetts Occasional Papers in Linguistics 18: Papers in Optimality Theory*. Amherst, MA: Graduate Linguistic Student Association. 249-384. [Available on Rutgers Optimality Archive #60, http://roa.rutgers.edu/.]

McCarthy, John J., Prince, Alan, 1999. Faithfulness and Identity in Prosodic Morphology. In: Kager, René, van der Hulst, Harry, Zonneveld, Wim (Eds.), *The Prosody-Morphology Interface*. Cambridge: Cambridge University Press. 218-309. [Available on Rutgers Optimality Archive #216, http://roa.rutgers.edu/.]

Picallo, M. Carme, 1991. Nominals and nominalizations in Catalan. *Probus* 3: 279-316.

Prince, Alan, Smolensky, Paul, 2004. *Optimality Theory: Constraint Interaction in Generative Grammar*. Blackwell, Malden & Oxford. [Revision of 1993 technical report no. RuCCS-TR-2, Rutgers University Center for Cognitive Science, New Brunswick, NJ. Available on Rutgers Optimality Archive #537, http://roa.rutgers.edu/.]

Rasom, Sabrina, 2006. Il plurale femminile nel ladino dolomitico tra morfologia e sintassi. In: Penello, Nicoletta, Pescarini, Diego (Eds.), *Quaderni di Lavoro dell'ASIS 5:20-35. Atti dell'XI Giornata di Dialettologia 2005*, 1-16. http://asis-cnr.unipd.it/.

Real Academia Española, 1931. *Esbozo de una nueva gramática de la lengua española*. Madrid, Espasa-Calpe.

Rizzi, Luigi, 1979. Teoria della traccia e processi fonosintattici. *Rivista di Grammatica Generativa* 4: 165-181.

Samek-Lodovici, Vieri, 2002. Agreement impoverishment under subject inversion: a crosslinguistic analysis. In: Fanselow, Gisbert, Féry, Caroline (Eds.), *Resolving Conflicts in Grammar: Optimality Theory in Syntax, Morphology, and Phonology*. Linguistische Berichte Sonderheft 11. Hamburg: Helmut Buske. 49-82. [Available on Rutgers Optimality Archive #431, http://roa.rutgers.edu/.]

Vanelli, Laura, 1979. Una forma suppletiva dell'articolo e la sua fonosintassi. *Rivista di Grammatica Generativa* 4: 183-206.

Vilkuna, Maria, 1998. Word Order in European Uralic. In: Anna Siewierska (Ed.), *Constituent Order in the Languages of Europe*. Mouton de Gruyter, Berlin New York, 105-149.

Wheeler, Max W., 2005. *The phonology of Catalan*. Oxford University Press, Oxford.