AGREEMENT IN TWO STEPS (AT LEAST)

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1 Agreement asymmetries

In many languages the elements of a DP agree with a head noun (nominal concord). This is illustrated in (1) with an example from Spanish, where there is gender and number concord with the head noun, which appears in boldface.

(1) Estas pequeñas **casas** abandonadas

this-f.pl small-f.pl house-f.pl abandoned-f.pl

'These small abandoned houses'
However, concord seems to fail in many languages for some positions, a phenomenon that has been called "lazy concord" (see Haiman and Benincà, 1992, Rasom 2008). In most cases, lazy concord affects prenominal elements, not postnominal ones, as the example in (2) from Moroccan Arabic illustrates (data from Shlonsky 2004). As (2a) shows, demonstratives in postnominal position agree in gender and number with the noun, in boldface; in (2b) the demonstratives in prenominal positions are bare forms.

(2) a. l wəld had-a l bənt had-i lə wlad had-u
   the boy this-m.sg the girl this-f.sg the children this-m.pl
   'this boy'          'this girl'         'these boys'

   b. had l wəld had l bənt had lə wlad
   this the boy       this the girl       this the boys
   'this boy'          'this girl'         'these boys'

Some other languages that exhibit prenominal-postnominal asymmetries are Abkhaz (Hewitt 1979), with number concord postnominally but a bare form prenominally, Central Ladin (Rasom 2008), with feminine plural concord postnominally but only feminine concord prenominally, or Asturian (Fernández-Ordóñez 2007), with mass concord postnominally but gender concord prenominally.

Agreement asymmetries have also been observed at the clause level (clausal agreement). In these cases the order subject-verb often causes full agreement while with subject inversion lazy agreement is found. An example appears in (3), from Standard Arabic (Aoun, Benmamoun and
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Sportiche 1994). In (3a) the order S–V causes gender and number agreement on the verb, while in (3b) the order V–S causes only gender agreement on the verb; the subject appears in boldface.

(3) a. ʔalʔawlaad-u naam-uu

the-children-Nom slept-3m.pl

'the children slept'

b. Naam-a lʔawlaad-u (*naam-uu lʔawlaad-u)

slept-3msg the-children-Nom

'the children slept'

More examples and a typology of agreement asymmetries in subject inversion can be found in Samek-Lodovici (2002). Similar asymmetries have been observed in language acquisition (see, for instance, Franck et al 2006).

2 Previous analyses of the asymmetries

Several accounts exist of agreement asymmetries within the clause or within the DP, and in some cases the suggestion is made that the mechanism that causes DP and clausal asymmetries is the same (see, for instance, Shlonsky 2004). Franck et al (2006), following work in Guasti and Rizzi (2002), suggest that, at the clause level, full agreement between a preverbal subject and the verb is the result of features being checked twice, through Agree and Move (which gives rise to a
Spec-Head configuration); the weakness found with subject inversion is due to features being checked only once, through Agree. Shlonsky (2004) proposes that in Hebrew and Arabic full concord within the DP is achieved by NP-movement to a position that ultimately enters in a Spec-Head relation with an Agr-bearing head that forces agreement with postnominal elements; this relationship is not present with prenominal modifiers. Nevins (2011) similarly suggests obligatory concord with a Spec-Head configuration and optional concord through Agree, within the DP. In what follows I will concentrate on two very different proposals that, contrary to the ones summarized so far, not only suggest a reason for the presence and the direction of the asymmetries but also try to explain the crosslinguistic variation that is found, both with respect to the presence or absence of lazy agreement in a given language and with respect to the particular features that might participate in lazy agreement. These two proposals are Samek-Lodovici (2002) and Ackema and Neeleman (A&N) (2003). Both of them focus on clausal asymmetries, but can be extended to DP asymmetries.

Samek-Lodovici (2002) proposes to account for the asymmetries within Optimality Theory resorting to two universal constraints related to agreement. One of them, $\text{AGR}_l$, favors local agreement, Spec-Head agreement for the cases he considers. The other agreement-related constraint, $\text{EXTAGR}_l$, favors general agreement, both local and long distance. These two constraints compete with the constraint $\text{NoFEATS}$. The definition of these three constraints, all of them markedness constraints, appears reproduced in (4) (Samek-Lodovici 2002: (19) (21), (22)). The constraint $\text{NoFEATS}$, in spite of its name and its definition, has to be understood as a constraint that bans agreement. According to Samek-Lodovici it is violated when agreement occurs.
(4) a. NoFEATS: No agreement features.

b. AGR$_{f}$: An agreement head H and a DP must agree on feature $f$ within the local projection HP.

c. ExtAGR$_{f}$: An agreement head H and a DP must agree on feature $f$ within the extended projection of H.

The ranking ExtAGR$_{f}$ >> NoFEATS causes full agreement. The ranking NoFEATS >> AGR$_{f}$, ExtAGR$_{f}$ has as a result a generalized lack of agreement. Agreement asymmetries are obtained when the Spec-Head agreement constraint AGR$_{f}$ dominates the constraint against the expression of agreement features, NoFEATS, and this one in turn dominates the constraint favoring general agreement, ExtAGR$_{f}$. The constraints AGR$_{f}$ and ExtAGR$_{f}$ can be relativized to specific agreement features (e.g. AGR$_{gender}$, AGR$_{number}$, AGR$_{person}$), so a much finer typology can be derived, as shown by Samek-Lodovici (2002): (2), (3).

If, following Shlonsky (2004) and Nevins (2011), we assume that, within the DP, postnominal modifiers enter a Spec-Head relation with the head Noun, while this is not the case with prenominal modifiers, we can adapt the agreement-related constraints proposed by Samek-Lodovici (2002) to DP-internal concord, so that AGR$_{f}$ has as its scope only postnominal modifiers and ExtAGR$_{f}$ has scope over the whole DP. The tableau in (5) shows with an abstract example the asymmetries that we saw illustrated in (2) with an example from Moroccan Arabic. The input contains a prenominal modifier X (a Determiner, an Adjective), the head N with a feature [PLURAL] and a postnominal modifier Y. Four candidates are considered: the winning candidate (5a), with only postnominal concord, a candidate with no concord (5b), a candidate with full concord (5c), and a candidate with only prenominal concord. The ranking AGR$_{num}$ >>
**NoFEATS >> ExtAGR\textsubscript{num}** forces postnominal concord. Note that, under this model, prenominal-only concord cannot be obtained under any ranking because that candidate will always be harmonically bound by the candidate with postnominal-only concord. Candidates with this type of asymmetric concord are ignored in other tableaux.

\[\text{(5)}\]

<table>
<thead>
<tr>
<th>Input: (\begin{array}{ccc} X &amp; N &amp; Y \ &amp; \text{[PL]} &amp; \end{array}) \text{[PL]}</th>
<th>AGR\textsubscript{num}</th>
<th>NoFEATS</th>
<th>ExtAGR\textsubscript{num}</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (\begin{array}{ccc} X &amp; N &amp; Y \ &amp; \text{[PL]} &amp; \text{[PL]} \end{array})</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. (\begin{array}{ccc} X &amp; N &amp; Y \ &amp; \text{[PL]} \end{array})</td>
<td>*!</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>c. (\begin{array}{ccc} X &amp; N &amp; Y \ &amp; \text{[PL]} &amp; \text{[PL]} &amp; \text{[PL]} \end{array})</td>
<td>**!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. (\begin{array}{ccc} X &amp; N &amp; Y \ &amp; \text{[PL]} &amp; \text{[PL]} \end{array})</td>
<td>*!</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

In Samek-Lodovici’s proposal, both agreement and the agreement asymmetries are obtained in a single step. In section 3 it will be shown that a single-step approach is not adequate for dialects of Spanish where concord asymmetries affect only a restricted set of nouns.

A&N (2003) (and also A&N 2004, 2012) argue for a very different model to account for agreement asymmetries (agreement weakening, in their own terms) within the clause, and also other phenomena. In their proposal, there is full agreement in the overt syntax, the weakening arising at PF within prosodic domains. At PF, before the insertion of phonological material, there is an initial prosodic phrasing which, following work by Selkirk and other authors, is determined by alignment conditions that insert a prosodic phrase boundary \(\phi\) at the right (or left) edge of
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each XP. For head-initial languages the relevant constraint is as formulated in (6) (see, for details, A&N 2012: (3), and also A&N 2003: (4), 2004: 186 (4)).

(6) Align the right edge of an XP with the right edge of a φ.

In (7) (corresponding to A&N 2003: (40)) it is shown how the initial prosodic phrasing between subject and verb differs in V-S (7a, a') and S-V (7b, b') sequences. The syntactic structures in (7a,b) map onto the initial prosodic phrases in (7a',b'), respectively. The boundaries of prosodic phrases appear indicated by curly brackets.

(7) a. \[
[FP [F V] [IP \text{subject} t_V [VP t_V \text{object}]oon]]
\]

a'. \{\text{V subject} \} \{\text{object} \}

b. \[
[FP \text{subject} [F V] [IP \text{subject} t_V [VP t_V \text{object}]oon]]
\]

b'. \{\text{subject} \} \{\text{V object} \}

With V-S order the subject and the verb end up in the same prosodic phrase (see (7a')), while with S-V order the subject and the verb end up in different prosodic phrases (see (7b')). To account for the fact that in Standard Arabic, as shown in (3), there is a loss of number agreement between the subject and the verb in V-S order (not in S-V order), A&N (2003) propose the weakening rule in (8) (see A&N 2003: (41)).

(8) Arabic Agreement Weakening

\{[V PL . . . ] [D PL . . . ]\} → \{[V . . ] [D PL . . ]\}
This weakening rule, a rule of allomorphy which is subject to a recoverability condition, can apply to V-S sequences because the verb and the subject belong to the same prosodic domain, and therefore the plural feature of the first terminal can be deleted without plurality being lost in that domain. In S-V sequences the rule cannot apply because the prosodic domain of the subject does not contain another terminal, so the context of the rule is not met. A&N (2003) propose very similar rules for other agreement asymmetries within the clause. Phonological material (the Vocabulary in Distributed Morphology terms, Halle and Marantz 1993) is inserted after rules of allomorphy have applied, and prosodic phrases can be modified to satisfy weight considerations, for instance.

But if agreement weakening phenomena within the clause are to be attributed to PF rules that operate within prosodic constituents in the context of another terminal, one would expect agreement weakening phenomena within the DP to be accounted for in the same fashion. Although the internal structure of DPs is a matter of much debate, for the sake of the argument we can make a set of simple assumptions. One of these is the basic structure in (9), following Cinque (1996) and other work, where N is the most embedded constituent of the DP.

(9) [ ... [XP Dem ... [YP Num ... [ZP A [NP N]]]]]

We can further assume that when, for instance, the order N-A is found it is because the NP (crucially not N) has moved above A. The resulting structure would be as depicted in (10a). We could then expect the mapping to the prosodic structure in (10b).1

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1 As mentioned in the text this very simplified structure is assumed for the sake of the argument. The prosodic structure in (10b) could not be that one if one assumed the existence of DemP or NumP, an option found in much work (see, e.g. Cinque 2005 or the discussion in Svenonius 2008, for instance). With these additional XPs, a
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(10) a. \([ \ldots \{XP \text{Dem} \ldots \{YP \text{Num} \ldots \{NP \{ZP A_{NP} \}\}\}\}\]\]

b. \(\{\text{Dem Num N} \} \{\text{A}\}\)

The prediction would then be that allomorphy rules would be able to weaken \text{Dem} and \text{Num} in (10b) but not a postnominal \text{A}. Such an approach could account for gender and number loss in the example from Moroccan Arabic in (2). A simplified weakening rule deleting the two features could have the form in (11).

(11) \(\{[X \text{FEM PL} \ldots] [\text{N FEM PL} \ldots]\} \rightarrow \{[X \ldots] [\text{N FEM PL} \ldots]\}\}

This rule would delete gender and number features in prenominal modifiers, because they would belong to the same prosodic phrase as \text{N}, but it would not affect postnominal modifiers, which would constitute separate prosodic phrases.


gender concord in dialects of Spanish

The Spanish feminine definite article \text{la} surfaces as \text{el} before certain feminine nouns that start with a stressed \text{a}. So, feminine nouns like \text{agua} [\text{áywa}] 'water' (cf. \text{agua fría} 'water-fEM cold-

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prosodic boundary would appear after each one and the prosodic domains would be quite different. Then the existing asymmetries would not be predicted.
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FEM') surface with the definite article el, el agua 'the water', in spite of the fact that the regular feminine definite article is la (cf. la nieve 'the snow', la imagen 'the image', la almohada [almoáða] 'the pillow'). The change in the article does not affect categories other than nouns (not adjectives or adverbs: la antes mencionada 'the-FEM before mentioned-FEM'; proper names: la Ágata 'the Agatha'), it applies only under adjacency between the definite article and the noun (la plácida agua 'the-FEM quiet-FEM water-FEM'), and it applies only with singular, not plural, nouns (las aguas 'the-FEM.PL waters-FEM.PL'). Some studies, like Halle, Harris and Vergnaud (1991), have focused on the fact that in some dialects the replacement also takes place when the initial a is not stressed on the surface, as in el agüita [ayvíta] 'the water (dim.)' or el aguanieve [aywanjéše] 'the sleet'. Others have tried to establish whether the article el used with feminine nouns is a surface allomorph of the feminine article (with deletion of the final vowel and insertion of an initial epenthetic vowel) or the masculine definite article, and some have concentrated on the segments that trigger the change, a contact between two low vowels, which would occur if the feminine article surfaced (cf. *la agua). For different views on these issues see, among many others, Zwicky (1985), Harris (1987), Kikuchi (2001), and Cutillas (2003).

In other varieties of Spanish the change in the definite article has extended to the indefinite article, some quantifiers and demonstratives. But here I want to concentrate on some varieties of Spanish in which the use of the masculine this class of nouns trigger has generalized to all elements that precede feminine nouns like agua in the DP. Some examples appear in (12) (for more examples see Eddington and Hualde 2008 and Bonet, Lloret and Mascaró to appear). All prenominal modifiers are masculine while postnominal ones are feminine. The noun appears in boldface.
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(12) a. el nuevo arma secreta

   the-MASC new-MASC weapon-FEM secret-FEM

b. todo su área delantera

   all-MASC poss. area-FEM front-FEM

c. el mismo agua parecerá fría

   the-MASC same-MASC water-FEM will-seem cold-FEM

The three examples in (12) show that the masculine surfaces even if no vowel contact would occur. In (12a), for instance, the feminine article *la would be next to a consonant: *la nuevo. (12b) shows, in addition, that adjacency between the prenominal element and the noun is not a requirement: todo surfaces as masculine even though the adjacency with the noun is broken by an invariable possessive su. A valid conclusion for this variety is that the class of feminine nouns that trigger the concord asymmetry is now an idiosyncratic class of nouns that only historically triggered a phonological dissimilation process.

Assuming that masculine is a default gender, and ignoring for the time being the fact that the asymmetries in gender concord arise only in the singular (not in the plural), a general asymmetry between prenominal and postnominal elements could easily be accounted for in Samek-Lodovici's model, as illustrated in (13) with the example in (12a). This tableau is a concrete example of the schematic tableau in (5), and the same type of candidates are considered. Only the N arma is inherently specified as feminine in the input; the constraint hierarchy favors the candidate with postnominal, but not prenominal, concord.²

² For concreteness and clarity, in (13) I assume that the input contains phonologically realized roots plus a noun with realized inflection. It is not clear whether Samek-Lodovici would endorse late insertion.
(13) Tableau corresponding to *el nuevo arma secreta* 'the new secret weapon'

<table>
<thead>
<tr>
<th>Input: l nuevo arma secreta [FEM]</th>
<th>AGR&lt;sub&gt;gen&lt;/sub&gt;</th>
<th>NOFEATS</th>
<th>EXTAGR&lt;sub&gt;gen&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. el nuevo arma secreta [FEM]</td>
<td>*</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>b. el nuevo arma secreto [FEM]</td>
<td>*!</td>
<td></td>
<td>***</td>
</tr>
<tr>
<td>c. la nueva arma secreta [FEM]</td>
<td>***!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One first question to address is how to restrict this asymmetry in concord to specific lexical items, because it is not the case that any feminine noun of the language can trigger the asymmetry. A paradox arises because for the quite restricted set of nouns that trigger this phenomenon we need the ranking shown in (13), AGR<sub>gen</sub> >> NOFEATS >> EXTAGR<sub>gen</sub>, while for the vast majority of nouns, which show full concord, we need the opposite ranking EXTAGR<sub>gen</sub> >> NOFEATS (the ranking of AGR<sub>gen</sub> being irrelevant). In Optimality Theory two main proposals have been made to account for lexically-restricted processes: cophonologies (proposed in Orgun 1996 and Anttila 1997) and lexically indexed constraints (developed by Itô and Mester 1999 and Pater 2000). Under the first of these two approaches, as instantiated in Inkelas and Zoll (2007), specific lexical items are subject to specific constraint rankings; they have different subgrammars. In the case at hand, the language would have a general ranking AGR<sub>gen</sub> >> \{EXTAGR<sub>gen</sub>, NOFEATS\}. The set of items that include *agua* would be lexically specified for the ranking NOFEATS >> EXTAGR<sub>gen</sub>, while the complementary set of items would be specified for the opposite ranking: EXTAGR<sub>gen</sub> >> NOFEATS. Although this approach would work
mechanically, it faces a problem pointed out in Pater (2009), namely that it cannot differentiate variation from exceptionality. Here it is clear that items like *agua* are exceptional; all other nouns are subject to the default ranking $\text{ExtAGr}_{\text{gen}} \gg \text{NoFeats}$. This ranking should not have to be specified for each lexical item, including new coinages. Under the lexically indexed constraints approach, certain constraints have a general version, $C_1$, and a version that is restricted to affect only a class of lexical items $L$ indexed for that constraint, $C_{1L}$. The application of a process to a restricted set of items is obtained through the ranking $C_{1L} \gg C_2 \gg C_1$. All the facts from Spanish can be accounted for if the lexically indexed constraint is $\text{NoFeats}$. The ranking of all the constraints will then be: $\text{AGr}_{\text{gen}} \gg \text{NoFeats}_{L} \gg \text{ExtAGr}_{\text{gen}} \gg \text{NoFeats}$.\(^3\) With this ranking, postnominal concord is systematic. $\text{NoFeats}_{L}$ is relevant only for nouns like *agua* or *arma*, for which it will prevent any prenominal concord features from being realized, as shown in (14). For the rest of the nouns of the language, $\text{ExtAGr}_{\text{gen}}$ will favor across-the-board concord, as shown in (15).

(14) Tableau corresponding to *el nuevo arma secreta* 'the new secret weapon', with lexically indexed constraints

<table>
<thead>
<tr>
<th>Input</th>
<th>nuevo arma(_L) secreta</th>
<th>AGr(_{\text{gen}})</th>
<th>NoFeats(_L)</th>
<th>ExtAGr(_{\text{gen}})</th>
<th>NoFeats</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>el nuevo arma(_L) secreta</td>
<td>*</td>
<td>**</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[FEM] [FEM]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>el nuevo arma(_L) secreto</td>
<td>*!</td>
<td>***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[FEM]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>la nueva arma(_L) secreta</td>
<td>***!</td>
<td>***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^3\) Most proponents of lexically indexed constraints defend the view that these should be restricted to faithfulness constraints. This is an unavailable option here because all the constraints under consideration are markedness constraints.
The second question to address is how the two approaches to exceptionality can account for the fact that, as mentioned earlier, the concord asymmetry in Spanish affects only singular nouns, not plural nouns, as illustrated in (16).  

(16) a. el nuevo arma secreta
    the-MASC.SG new-MASC.SG weapon-FEM.SG secret-FEM.SG

b. las nuevas armas secretas
    the- FEM.PL new- FEM.PL weapon-FEM.PL secret-FEM.PL

One difficulty stems from the fact that both cophonologies and lexically indexed constraints always target specific lexical items, not lexical items under certain conditions (here being exceptional only when singular). But here for both models some reference to the context would

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Footnote: The presence of full concord with plural nouns is a historical residue of the older restriction against a contact between low vowels. In the plural the presence of the plural morph -s broke the adjacency between the two vowels.
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have to be introduced. Within cophonologies nouns like arma would need to have two different constraint rankings contextually determined in their lexical entry. For instance, arma would have, in its lexical entry, the specifications ExtAgr\text{gen} >> \text{NoFeats}/\_\_\_\text{PL} and \text{NoFeats} >> ExtAgr\text{gen}/\_\_\_\text{SG}; this specification would not capture the observation that, when plural, nouns like arma behave like any normal noun in the language. In the lexically indexed constraints approach the constraint \text{NoFeats}_L would have to be restricted to apply when the noun is singular; the constraint would be something like \text{NoFeats}_L / \_\_\_\text{SG}. A second difficulty comes from the vagueness of the definition of the constraint \text{NoFeats}. Samek-Lodovici relates it to a more general constraint against structure (*\text{Struc}, Prince & Smolensky 2004 [1993]), but \text{NoFeats} is not just a constraint against features (otherwise the noun would violate it too), but is a constraint against features that stand in a certain type of correspondence (agreement). The locus of potential violations (the modifiers) is different from the locus of exceptionality (the noun). So, it would be tricky to rule out candidates with features that are not the result of agreement.

In A&N's model the loss of feminine in prenominal position would be the result of a weakening rule applying within a prosodic phrase in the context of a feminine noun within the same prosodic domain. Leaving aside for a moment the restriction to specific lexical items, the weakening rule could have the form in (17), where X stands for any prenominal categories that can coappear with a feminine noun.

(17) \{[X \text{FEM SG...}] [N \text{FEM SG...}]\} \rightarrow \{[X \text{ SG...}] [N \text{ FEM SG...}] \}
This rule would cause the loss of feminine in singular elements in prenominal position but it would not affect modifiers in postnominal position. Plural nouns would not be affected by (17). In this case, again, the trickiest part would be how to restrict the rule to apply only to specific lexical items, especially given that A&N assume late insertion, and that the spell-out of terminal applies after the application of context-sensitive allomorphy rules. One possibility is to assume, with Embick and Halle (2005) and other work, that roots are phonologically present already in the syntax or, alternatively, that they can ultimately be identified through abstract indices. Then the rule in (17) could be slightly modified as in (18) to affect only specified nouns. (18a) and (18b) constitute the two possibilities mentioned with respect to the reference to specific lexical items.

\[
(18) \quad \{[X \text{ FEM SG...}] [N^* \text{ FEM SG...}]\} \rightarrow \{[X \text{ SG...}] [N^* \text{ FEM SG...}]\}
\]

a. \(N^*: \text{arma, agua, área, ...}\)

b. \(N^*: N^{22}, N^{317}, N^{683}, \ldots\) (where \(N^{22} = \text{arma}, N^{317} = \text{agua}, N^{683} = \text{área}, \ldots\))


Asturian nominals have, in addition to gender and number, a distinction between mass and count. For instance, the masculine noun for 'thread' is realized as \(\text{filu}\), with the ending \(-u\), when
it is interpreted as a count noun and as *filo*, with the ending -*o*, when it is interpreted as a mass noun. Postnominal adjectives show the same -*u/-o* distinction, as illustrated in (19). Feminine nouns, like *cebolla* 'onion', have the ending -*a* under the two interpretations, but the count-mass distinction does show up in postnominal adjectives, where the ending for mass interpretation is -*o*, the same one that is found with masculine nouns. This appears illustrated in (20).

(19) a. filu blancu  MASC, COUNT
    b. filo blanco  MASC, MASS

    'white thread'

(20) a. cebolla blanca  FEM, COUNT
    b. cebolla blanco  FEM, MASS

    'white onion'

However, prenominal elements agree with the noun only with respect to gender, not with respect to mass. The examples in (21) and (22) show the asymmetries in concord when the noun receives a mass interpretation.

(21) a. duru fierru ferruñosu  MASC, COUNT
    b. duru fierro ferruñoso  MASC, MASS

    'hard rusty iron'

(22) a. guapa manzana madura  FEM, COUNT
    b. guapa manzana maduro  FEM, MASS
'good ripe apple'

In (21b) and (22b) the noun has gender and mass features; gender spreads to prenominal elements while mass spreads to postnominal elements. (23) shows schematically how gender and mass concord work in Asturian. The asymmetries arise only when the noun has a mass interpretation, as (23a) illustrates. When the noun has a default count interpretation, gender spreads to prenominal and postnominal elements, as shown in (23b).

(23)  

<table>
<thead>
<tr>
<th>Mass interpretation</th>
<th>Count interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="Diagram" /></td>
<td><img src="image.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Asturian concord asymmetries cannot be accounted for in a straightforward fashion through weakening rules of the type proposed by A&N (2003). Given that the structure of the DP looks, in all relevant respects, identical to the one for Spanish, the initial prosodic structure that creates the domains for the weakening rules would be the same: \{X N\} \{Y\}. Syntactically full concord for gender and mass would affect the whole DP, which at that point contains only abstract terminals. A weakening rule deleting all mass features but the last within the first prosodic phrase \{X N\} would account for the fact that only gender concord surfaces prenominally. But the preference for the exponence of mass over the exponence of gender for all postnominal elements cannot be accounted for by a weakening rule; in that domain, \{Y\}, mass and gender are wrongly predicted to survive, because there is no other terminal with those features within the domain. A similar problem would arise with a different prosodic phrasing. If the phrasing were
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{X} \{N Y\} (with left-alignment in (6), instead of right-alignment) the problems would be transferred to prenominal elements. The only phrasing that would allow for an account within this model would be to posit a single prosodic phrase for the whole DP: {X N Y}. One weakening rule, (24a), would delete the mass feature from prenominal elements and another weakening rule, (24b), would delete the gender feature from postnominal elements.

(24) a. \{[X ± FEM MASS...] [N ± FEM MASS...]\} \rightarrow \{[X ± FEM ...] [N ± FEM MASS...]\}
b. \{[N ± FEM MASS...] [X ± FEM MASS...]\} \rightarrow \{[N ± FEM MASS...] [X MASS...]\}

The relevant question is, though, how this initial prosodic phrasing could be obtained. It would have to be assumed that syntactically only the head N, instead of the NP, raises when N is not final, contrary to what one would have to assume for Spanish, a very closely related language. This relates to a more general problem, mentioned in footnote 1: in order to prevent more than one prosodic phrase to be created within the DP, no right (or left) XP boundaries should exist internally to the DP, which is a very strong claim, difficult to maintain.\footnote{An additional problem for A&N's model is related to the idea that asymmetries in agreement are obtained before Vocabulary insertion. Evidence that this cannot be true comes from North-Eastern Central Catalan (NEC Catalan), where plural concord fails to surface only prenominally, and crucially only when the plural morph -s would be surrounded by consonants, as the following examples shows (see Bonet, Lloret and Mascaró, to appear, for more examples and argumentation: see also Nevins 2011). The agreement asymmetries must arise at least at the same time Vocabulary insertion takes place.}

For Samek-Lodovici's model, which does not resort to prosodic phrasing, the data from Asturian can be accounted for with no modification of the model. A top-ranked AGR_{mass}
constraint would favor postnominal mass concord, and the lower ranking \( \text{EXTAGR}_{\text{gen}} >> \text{EXTAGR}_{\text{mass}} \) would force gender concord prenominally.

5 Concord in two steps

The model to be sketched in this section shares with A&N the idea that agreement asymmetries are obtained in two steps, a syntactic one and a postsyntactic one. With Samek-Lodovici it shares the optimality-theoretic orientation, with some very similar constraints. A more detailed description of this model, with examples from several languages, can be found in Bonet, Lloret and Mascaró (BL&M) (to appear) and in Bonet and Mascaró (B&M) (2011).

In the BL&M model, contrary to A&N, the syntax is responsible only for postnominal concord, most likely through Spec-Head agreement. This assumption is compatible with claims by Shlonsky (2004) or Nevins (2011), mentioned in section 1, and would cover a similar agreement domain as the markedness constraint \( \text{AGR}_f \) in Samek-Lodovici (2002) as applied to the DP in sections 2 and 3. Postsyntactically, faithfulness constraints of the MAX family (25a), which protect postnominal concord, and general CONC(ORD) markedness constraints, (25b), compete with each other and are the source of the existing asymmetries. CONC(ORD) is equivalent to Samek-Lodovici’s \( \text{EXTAGR}_f \). The scope of the two types of postsyntactic constraints appears represented in (26).

(25) a. MAX: Every inflectional feature of the input has a correspondent in the output.
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b. CONC(ORD): If a N has an inflectional feature F, all other modifiers within the DP must have the inflectional feature F.

(26) \[ \begin{array}{ccc} X & N & Y \\ \hline \text{MAX} \\ \text{CONC} \end{array} \]

This model, like Samek-Lodovici's, can account in a straightforward fashion for the concord asymmetries found in Asturian. The tableau in (27) shows schematically how the asymmetric concord in a sequence like guapa manzana maduro 'good ripe apple', (21b), would be obtained.

(27)

<table>
<thead>
<tr>
<th>Input: X N Y</th>
<th>MAX (mss)</th>
<th>CONC (gen)</th>
<th>CONC (mss)</th>
<th>MAX (gen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. X N Y F F.MSS F.MSS MSS</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. X N Y F F.MSS F F</td>
<td>*!</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. X N Y MSS MSS F.MSS F.MSS MSS</td>
<td>**!</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>d. X N Y MSS MSS F.MSS F F</td>
<td>*!</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

This analysis overcomes the problems mentioned in section 4 for the approach by A&N, which relies crucially on initial prosodic phrases. The BL&M framework also avoids some of the difficulties the one-step approach by Samek-Lodovici runs into for the concord asymmetry found in dialects of Spanish with lexical items like agua or arma. Recall that only certain feminine nouns cause the asymmetry, and that the asymmetry arises only in the singular; when the noun is
plural concord applies in a totally regular fashion. Postnominal gender and number concord takes place in the syntax. Postsyntactically an impoverishment rule deletes the feature [feminine] in a specified set of nouns, as shown in (27).

(27) \([f] \rightarrow \emptyset / \_\!\![sg]\) for \(agua, arma, ave, \ldots\)

The loss of the feature [feminine] prevents it from spreading to prenominal elements. The tableaux in (28) and (29) show very schematically how lazy concord is obtained in the singular but not in the plural, with full concord. The constraint \(\text{CONC}(f,\text{pl})\) is a shorthand for two constraints that favor concord for marked gender and number features; that is, feminine and plural. This constraint is not relevant in (28) because the N has neither feminine nor plural features, but it becomes crucial in (29), where it prevents the concord asymmetry. The constraint \(\text{*FEM(INE)}\) belongs to the family \(\text{*STRUC}\), against structure.

(28) Lazy concord with singular nouns like \(agua\) 'water'

<table>
<thead>
<tr>
<th>Input: (X\ N\ Y)</th>
<th>(_!![sg]\ f.!![sg])</th>
<th>MAX</th>
<th>(\text{CONC}(f,\text{pl}))</th>
<th>(\text{*FEM})</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (X\ N\ Y)</td>
<td>(_!![sg]\ f.!![sg])</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b. (X\ N\ Y)</td>
<td>(f.!![sg]\ _!![sg]\ f.!![sg])</td>
<td></td>
<td></td>
<td>**!</td>
</tr>
<tr>
<td>c. (X\ N\ Y)</td>
<td>(_!![sg]\ _!![sg]\ _!![sg])</td>
<td></td>
<td></td>
<td>*!</td>
</tr>
</tbody>
</table>

(30) Full concord with plural nouns like \(aguas\) 'waters'

<table>
<thead>
<tr>
<th>Input: (X\ N\ Y)</th>
<th>(f.!![pl]\ f.!![pl])</th>
<th>MAX</th>
<th>(\text{CONC}(f,\text{pl}))</th>
<th>(\text{*FEM})</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (X\ N\ Y)</td>
<td></td>
<td></td>
<td></td>
<td>**!</td>
</tr>
</tbody>
</table>

The loss of the feature [feminine] prevents it from spreading to prenominal elements. The tableaux in (28) and (29) show very schematically how lazy concord is obtained in the singular but not in the plural, with full concord. The constraint \(\text{CONC}(f,\text{pl})\) is a shorthand for two constraints that favor concord for marked gender and number features; that is, feminine and plural. This constraint is not relevant in (28) because the N has neither feminine nor plural features, but it becomes crucial in (29), where it prevents the concord asymmetry. The constraint \(\text{*FEM(INE)}\) belongs to the family \(\text{*STRUC}\), against structure.
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<table>
<thead>
<tr>
<th></th>
<th>pl</th>
<th>f.pl</th>
<th>f.pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>X</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>f.pl</td>
<td>f.pl</td>
<td>f.pl</td>
</tr>
<tr>
<td></td>
<td>***!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>X</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>pl</td>
<td>f.pl</td>
<td>pl</td>
</tr>
<tr>
<td></td>
<td>*!</td>
<td></td>
<td></td>
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<td></td>
<td>*</td>
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<td></td>
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</tbody>
</table>

In this very sketchy analysis of Spanish and Asturian there are issues that have not been addressed and that will be left open here due to space considerations. An important one has to do with the interaction between asymmetries and late insertion. This issue was briefly addressed in the last part of section 3 (and also in footnote 7), concerning the A&N model, which also assumes late insertion. To restrict the lazy concord in Spanish to specific nouns, it was suggested that, following Embick and Halle (2005), it could be assumed that roots or abstract indices identifying them could be present in the syntax. Another issue is the timing and manner of exponence of the impoverished noun in Spanish. An item like agua has the same class marker -a in the singular, where it has lost the feature [feminine], and in the plural (aguas), where it has kept it. This would not be a problem for proposals like A&N, where the feature make-up of the Noun doesn't change during the derivation. There are several ways to approach this issue within the present model. To mention one of them, the final -a could be considered a stem formative, following Bermúdez-Otero (2006), among others. Then the only exponent possible for 'water' would be agu-a, regardless of the presence or absence of the feature [feminine].

References


Ackema, Peter, and Ad Neeleman. 2004. Beyond Morphology. Interface Conditions on Word


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