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GENDER CONFUSION

1. INTRODUCTION

The phenomenon of mixed agreement where one and the same NP may trigger morphological agreement for different feature values (Corbett 1979 and later work) provides an interesting insight into the nature and basic properties of φ-features and φ-agreement. In particular it forms a basis for a proposal where syntactic (clause-internal) agreement is based on simple MERGE rather than c-command, a view deriving from the observation that mixed agreement patterns are easy to deal with if some non-inherent features are interpreted at LF. As a result, a theoretical differentiation between the property of being interpretable and the property of being inherent becomes necessary (cf. Pesetsky and Torrego 2007). This hypothesis is in conflict with the standard view assuming that φ-features are interpretable at most in one position, where they are inherent.

Gender is particularly useful for discussing mixed agreement: as is easy to demonstrate, it clearly distinguishes formal and semantic feature values on the one hand and inherent and non-inherent features on the other. In particular, gender can be inherent without at the same time being semantically interpretable (as the feminine gender on inanimate nouns). It is also a distinctive property of gender that its interpretable feature values do not necessarily enter into a subset relation (e.g., in French, see section 5.3).

I will begin (section 2) with discussing the semantic and formal bases of gender, both cross-linguistically and within one language, and introducing the issue of mixed agreement, arising in systems where semantic and formal criteria for determining the gender of a noun may conflict. Then I will show (section 3) that the standard agreement mechanisms (Spec-head or probe-goal) not only fail to deal with mixed agreement, but also run into problems on more general grounds with non-canonical instances of agreement.

In section 4 I will propose a simple checking mechanism that takes into consideration the fact that inherent gender features need not be interpretable and presupposes that all φ-features, be they inherent or not, are introduced into the derivation valued. Non-inherent φ-features must be licensed by either being matched to inherent φ-features on their sister or by being semantically interpreted, i.e., by corresponding to the relevant presupposition.

Mixed agreement has been investigated by Sauerland 2004, Steriopolo and Wiltschko 2008 and Neeleman 2008. While Sauerland and Neeleman share the semantic background in presupposing that mixed agreement is subject to the subset constraint, crucially incorporated into their proposal, Steriopolo and Wiltschko, like Sauerland, place interpretable φ-features (in particular, gender) on top of the DP. In section 5 I will discuss these three proposals and demonstrate that they yield incorrect predictions precisely due to these two assumptions.

2. GENDER AND ITS AGREEMENT PATTERNS

It is well-known that in many languages nouns fall into different categories, some of which (e.g., mass/count, abstract/concrete) are semantically based, while others (declension classes) are purely formal. On the border between the two is gender, or noun class, commonly defined as an inherent property of a noun affecting its agreement patterns, as exemplified below. In addition gender of a noun also determines the form of a pronoun used to refer back to the referent of the NP whose head it is.

(1) a. Eta   strannaja   kniga   porazila   nas.   Russian
         this-F   strange-F   book.F   impressed-F us-ACC
         This strange book impressed us.

b. Etot strannyj roman porazil nas.
this-M strange-M novel.M impressed-M us-ACC
This strange novel impressed us.

c. Eto strannoe proizvedenie porazilo nas.
this-N strange-N oeuvre.N impressed-N us-ACC
This strange oeuvre impressed us.

The choice of the head noun in (1) determines the inflection on the attributive adjective, determiner and predicate. The same effect can be demonstrated for pronouns and the relative operator *kotoryj* 'which':

(2)
Gde { kniga, kotoruju / roman, kotoryj / proizvedenie, kotoroe } ja čital? – { Ona / On / Ono } na stole.
Where is the book/novel/oeuvre that I was reading? – It is on the table.

Features that co-vary with the NP include gender, number and person, and it is assumed in the standard generativist literature that with attributive APs, determiners and predicates a syntactic process of agreement is involved. No such process is usually presumed to take place for pronouns, since it has no effect on grammaticality and is not constrained by any locality considerations. I adopt this division without discussion, setting aside for now the question of whether φ-feature covariance of relative operators should also be treated as agreement. Since gender is more formal and less rooted in semantics than number and person, it allows us to probe deeper into the nature of the syntactic mechanism of agreement.[1]

2.1. Gender typology

A φ-feature of a noun is semantic if it is determined by the properties of entities belonging to its extension (e.g., sex, animacy, etc. – see Corbett 1991). On the other hand, the φ-feature of a noun is formal if it is random or determined by some morphological properties of the noun (e.g., its declension class). Unlike nominal number or person, which are purely semantic (though some exceptions, such as pluralia tantum, might be envisaged), nominal gender may be purely semantic or mostly formal, depending on a language.

Some languages have a purely semantic gender system, like the Omotic language Dizi, a.k.a. Maji (Allan 1976 via Corbett 1991), and the Salish language Halkomelem (Steriopolo and Wiltschko 2008). In both these languages nouns denoting distinctly female animates and all diminutives are feminine, while the masculine gender contains the residue.[2]

A typical example of a mixed gender system is Russian. Like all mixed gender systems, Russian gender has a semantic core in that all nouns denoting males are masculine and all nouns denoting females are feminine (excepting some hypocoristics, see Doleschal and Schmid 2001). Apart from this, the gender of a Russian noun (masculine, feminine or neuter) is determined by its declension class (see Corbett 1991 for the algorithm). Another example

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[1] Pronoun covariance appears to argue that gender and number features always have a semantic base, since they can and in fact must be reused on the anaphoric pronoun across the sentence boundary:

(i) Comment est le livre? – **Il** est ennuyeux. French
how is the-M book.M 3MSG is boring-M
How is the book? – It is boring.

Since no real-world property corresponds to the [masculine] feature of the pronoun (though see Wechsler and Zlatic 1999), it is difficult to argue that its gender is in fact interpretable. A simple resolution of this apparent contradiction comes from the hypothesis that pronouns are determiners (Postal 1969) whose NPs are elided (Elbourne 2002). Support for this idea comes from the fact that NP-ellipsis can take place in the absence of a linguistic antecedent, and pronouns can in fact be used deictically for inanimate entities as well.

[2] Note that sex is not the only real-life property determining semantic gender; animacy, rationality, size or more exotic divisions (non-flesh food forms a separate gender in Dyirbal (Dixon 1982:178)) also exist.

of a mixed gender system is French, where all nouns denoting males are masculine, all nouns denoting females are feminine and the rest receive their gender on a totally random basis.[3] There are no languages with purely formal gender systems.

2.2. Mixed agreement

Languages with mixed gender systems may give rise to "mixed agreement" patterns for NPs, whose formal features assign them to one gender, while their denotation places them in another:

(3) Sa   Majesté   est inquiet/inquiète.   French, Corbett 2006
     3FSG-POSS majesty.F is   worried-M/F
     His Majesty is worried.

    If the referent of the subject DP *sa majesté* is male, it may (though it doesn't have to) trigger the appearance of masculine agreement morphology on the predicate. That the noun *majesté* 'majesty' is inherently feminine is shown by the obligatory feminine agreement on the possessive (*sa/*son majesté*) as well as by its obligatory feminine predicate agreement in contexts where it does not contribute to the denotation of a male human.

    Exactly the same effect can be observed in Russian (Corbett 1983, 1991, 2006): when the sex of the referent of a DP is known, agreement can be determined by the gender defined on semantic grounds:

(4) a.   Vrač   prišla.   Russian
          doctor.MSG   arrived-**FSG**
          The doctor (female) has arrived.

    b.   Naša   vrač –   umnica.
          our-**FSG** doctor.M   clever.person
          Our doctor (female) is very clever.

    Although the noun *vrač* 'doctor' is inherently masculine, feminine marking is possible on the determiner, attributive APs and the predicate. If agreement is a syntactic phenomenon, it should provide for both so-called 'syntactic agreement' (with the formal gender of the noun) and 'semantic agreement' (with its semantic gender). It is furthermore established (see Corbett 1979 and later work) that not all patterns of mixed agreement are possible within a clause, as shown by the following Russian examples:

(5) presupposition: our doctor is a woman

    a.   Naš   vrač   prišël   vovremja.
          our-MSG   doctor.M   arrived-MSG on.time
          Our doctor arrived on time.

    b.   %Naš   vrač   prišla   vovremja.
          our-MSG   doctor.M   arrived-FSG on.time

    c.   *Naša   vrač   prišël   vovremja.
          our-FSG   doctor.M   arrived-MSG on.time

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[3] Mel'čuk 1958 and Tucker, Lambert and Rigault 1977 show that the gender of a French noun is statistically predictable from the phonology form of the end of a noun. As French derivational morphology is suffixal, this is unsurprising and brings us no closer to determining why particular derivational affixes should receive masculine or feminine gender.

In addition, in French a noun may change its gender in the plural: thus *amour* 'love' *délice* 'delight' and *orgue* 'organ' are masculine in the singular and feminine in the plural (Grevisse 2006:715-717, §461). Instances of the same phenomenon in other languages are discussed in Corbett 1991:170-175.

d. Naša vrač prišla vovremja.
   our-FSG doctor.M arrived-FSG on.time

Whereas the mixed agreement pattern in (5b) is not equally accepted in all idiolects, the one in (5c) is completely ungrammatical. Cross-linguistically a pattern known as *Agreement Hierarchy* (Corbett 1979) emerges:

(6) **Agreement Hierarchy**
    DP-internal < predicate < relative pronoun < personal/possessive pronoun

The likelihood of semantic agreement increases rightwards in (6), both within the same language and cross-linguistically. Thus if the predicate agrees with the formal features of the subject (as in (5c)), DP-internal agreement must also be syntactic, and a language allowing semantic agreement on the determiner should also allow it on the predicate.

Since we are concerned here with clause-internal agreement, the minimal goal that the theory of agreement should achieve would be accounting for the Agreement Hierarchy within a clause.

3. WHAT IS SYNTACTIC AGREEMENT?

In the generativist approach morphological agreement between two items is usually taken to indicate the presence of a structurally defined syntactic relation between these items, and thus morphological agreement can be used as a diagnostic for that relation. Since GB approaches to agreement were developed to handle agreement between the subject of a tensed clause and the matrix verb in T^0, it is unsurprising that they should fare rather poorly when confronted with other configurations where agreement might occur.

One of the first hypotheses to be advanced as to the structural conditions on φ-feature agreement was the Spec-head approach (Chomsky 1986, Koopman 1992, 1996): in order for an agreement relation to be established, one of the two items must be a head while the other should appear in its specifier. Canonical instances of Spec-head agreement were taken to be the agreement between the subject in [Spec, TP] and the verb in T in many languages and of the possessor with the possessee in Chamorro, Hungarian, Yupik, etc. (Chung 1982, Abney 1987), or with the possessive preposition *of* in some Bantu languages or in Moroccan Arabic:

(7) a Péter kalap-**ja**   Hungarian, Szabolcsi 1987
    the Peter-NOM hat-POSS-SG
    Peter's hat

(8) a. gidaa **na** Aisha   Hausa, Tuller 1986 via Carstens 2000
       house-M of-M Aisha-F
       Aisha's house

   b. mootaa **ta** Ali
      car-F of-F Ali-M
      Ali's car

(9) a. l-wld dyal Nadia   Moroccan Arabic, Ouhalla, this volume
      the-boy of-M Nadia

   b. l-bnt dyal-**t** Nadia
      the-girl of-F Nadia

   c. l-wlad dya**w**l Nadia
      the-children of-PL Nadia

As noted by Carstens 2000, among others, NP-internal agreement, a.k.a. *concord*, is problematic for the Spec-head approach, since both the determiner and attributive APs may show morphological agreement (in number, gender and case) with the head noun:

(10) a. la petite fille   French
        the-FSG little-FSG girl.FSG

     b. le petit garçon
        the-MSG little-MSG boy.MSG

One way to solve the problem with determiner concord in the Spec-head approach is to propose that some sub-constituent of the extended NP moves covertly to [Spec, DP], thus yielding the desired configuration (Carstens 2000). Likewise, to make adjuncts appear in this configuration it can be assumed that NP-internal APs are merged in specifiers of functional heads (Valois 1991, Cinque 1994, Crisma 1996, Carstens 2000). Since both proposals rely on questionable assumptions (no other evidence for the movement to [Spec, DP], no motivation for the multiple functional heads inside an extended NP), the Spec-head approach does not account satisfactorily for NP-internal agreement.

In a later, now widely adopted development, Chomsky 1995 argues that AGREE, the mechanism assumed to underlie case assignment, morphological agreement and movement, occurs under c-command: a head bearing uninterpretable and unvalued φ-features probes its sister for the nearest (fully specified) target:

(11)   (VP simiplied)

                   TP
         T^0 VP
         am   DP   V′
     [n#, nPrs]   *I.1SG*   V^0 DP
   *dancing*   *polka*

The c-command approach to agreement fails in two types of configurations: where the target of agreement is not a head, as is the case with attributive APs, or where the source of valued φ-features is underlyingly merged higher than the target of agreement, which does not seem to move from its base position (as in small clauses). Two recent attempts to deal with these issues come from Schoorlemmer 2009 and Carstens 2000.

The configuration where the source of valued φ-features is underlyingly merged higher than the agreement target is exemplified in (12), where the predicate of a small clause agrees with its subject in number and gender:

(12) a. Je trouve ce livre intéressant.   French
        I find this-M book.M interesting-M
        I find this book interesting.

     b. Je trouve cette nouvelle intéressante.
        I find this-F novella.F interesting-F
        I find this novella interesting.

Carstens 2000 deals with agreement in small clauses by assuming that, contrary to the usual assumptions, the subject is underlyingly merged lower than the predicate. The problem with this proposal is that adjectives, just like verbs, can be shown to be unaccusative or unergative (Cinque 1989, 1990 and Bennis 2000, 2004), which means that for some cases at least the target of agreement (the predicate) is merged lower than the source of valued φ-features. One alternative would be to stipulate covert head-movement of the adjective to a position higher than the subject, from where it would be able to agree; another, to make use of a higher functional head, which could agree first with the entire small clause (and thus with the adjective) and then, due to its obvious φ-deficiency, with the subject (similar to what is proposed for Icelandic case-agreement in Chomsky 2001). Neither of the two proposals is fully satisfactory: there is no motivation or independent evidence for such head-movement, and overt counterparts of the functional heads proposed for extended small clauses (see e.g., Sportiche 1995, Starke 1995) never show any sign of agreement morphology.

NP-internal agreement (concord) is another thorny issue for the c-command approach to agreement, as noted by Carstens 2000. Not being a head, an attributive AP cannot Agree with the head noun, while the adjective itself does not c-command the head noun. As a result, their uninterpretable φ-features cannot be valued in this framework. Carstens 2000 proposes to deal with this issue by modifying the definition of agreement to make it symmetrical: not only, as is standardly assumed, can a head bearing uninterpretable features attract an XP containing interpretable counterparts of these features to its Spec, but such a head can also trigger movement of its own maximal projection to the Spec of such an XP. An alternative approach is that by Schoorlemmer 2009, where DP-internal agreement is mediated by D:

(13)
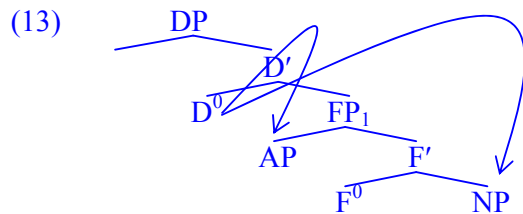
The advantage of Schoorlemmer's approach is that it provides for a natural explanation of the distinction between weak and strong adjectival inflection in Swedish, where the choice of the determiner affects the pattern of adjectival agreement. Its disadvantage, however, is that it predicts that all adjectives should agree following either the weak or the strong pattern. This is not correct for German, as described in Schlenker 1999: in the dative masculine forms the adjective may (and for some speakers, must) take the weak ending when preceded by an element bearing the strong ending:

(14) a.   mit   gutem   roten   Wein   Schlenker 1999
            with   good-DAT-MSG   red-OBL   wine

      b.   %mit   gutem   rotem   Wein
            with   good-DAT-MSG   red-DAT-MSG   wine
            with good red wine

An indeclinable adjective blocks weak declension on the AP that follows it:

(15) a.   *mit prima   rosa   Berliner   obergärig-en   Bier   Schlenker 1999
      b.   mit gut-**em** rosa   Berliner   obergärig-en   Bier
      c.   mit prima   rot-**em** Berliner   obergärig-en   Bier
      d.   mit prima   rosa   deutsch-**em** obergärig-en   Bier
      e.   mit prima   rosa   Berliner   obergärig-**em** Bier

However, even completely setting aside the issues raised by non-canonical agreement configurations, the standard generativist approaches to agreement, be they based on feature-checking (Chomsky 1995), feature-valuation (Chomsky 2000) or feature-unification (Brody 1997, Pesetsky and Torrego 2007, etc.), cannot account for mixed agreement.

4.   PROPOSAL

Since this paper is concerned with mixed agreement for gender, I will only discuss gender φ-features. Slightly modifying the presuppositional approach due to Sauerland 2004, I assume the following interpretation for them:[4]

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[4] There's some cross-linguistic variation as to the semantic content of gender features (see also fn. 2). More than two genders may be available, as in Lak or Archi (Corbett 1991:181), and although in Russian [feminine] is grammatically marked with respect to [masculine], in French this is not the case, as shown by the existence of feminine nouns with potentially male referents (e.g., *sentinelle* 'sentinel', *victime* 'victim'). We will set these complications aside.

(16) a.　　$\llbracket$FEMALE$\rrbracket = \lambda f \, . \, \lambda x : x$ is a human female $. \, f(x)$
　　 b.　　$\llbracket$MALE$\rrbracket = \lambda f \, . \, \lambda x : x$ is a human male $. \, f(x)$

In other words, interpretable φ-features are identity functions that are undefined if the sole argument of the one-place predicate they apply to does not satisfy the relevant semantic condition.

In addition to semantic φ-features I also postulate grammatical φ-features, which can be inherent ([iF], e.g., person features on pronouns) or not ([nF], e.g., person features on verbs). Formal gender features, which for Russian encode feminine, masculine and neuter, make no semantic contribution (though see Wechsler and Zlatic 1999).

The central hypothesis of my proposal is that agreement markers, which are normally specified only for non-inherent features, can also bear semantic features. For instance, the possessive *naša* 'ours' in Russian, normally corresponding to the feature bundle in (17a), can also be introduced as in (17b):[5]

(17) a.　　*naša* [NGENDER:F]
　　 b.　　*naša* [NGENDER:F][FEMALE]

Semantic features can be inserted only as a last resort operation, which is why mixed agreement is always a marked option. In languages where profession nouns productively form feminine variants, such as German or Serbo-Croat, mixed agreement is not attested for these nouns. Likewise, nouns like *čelovek* 'human' cannot appear in a mixed agreement pattern due to the availability of *ženščina* 'woman'.

To account for the fact that all languages have semantic gender, we will stipulate the following cross-linguistically valid implicature:

(18) a.　　[FEMALE] $\Rightarrow$ [IGENDER : F]
　　 b.　　[MALE] $\Rightarrow$ [IGENDER : M]

We will see shortly that this empirically motivated assumption correctly predicts that interpreted agreement features must override inherent grammatical features (cf. Corbett 1979 et seq.).

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(19) If X_1 and X_2 are sisters and X their mother, the featural specification of X is determined in the following way:

　　a.　　If X_1 bears the feature F (inherent or not) and X_2 bears the feature G (inherent or not), X_1 and X_2 can be merged only if the values of F and G are not contradictory
　　b.　　If X_1 bears the non- inherent feature [G] implying the value [iF$_1$] and X_2 bears the inherent feature value [iF$_2$], X bears [G][iF$_1$] (i.e., interpreted agreement overrides inherent grammatical features)
　　c.　　If X_1 bears the feature [nF] and X_2 bears the feature [iF], then X bears the feature [iF] (condition of licensing of non-inherent features)
　　d.　　A CP may not bear non-inherent features. Once merged with another head, a CP loses all its feature specifications.[6]

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[5] Since φ-features are identity functions on semantic predicates, the hypothesis that a possessive can bear them necessarily presupposes that Russian possessives have no existential import, which is introduced by a different mechanism. Independent reasons for separating existential force from other features introduced by determiners and possessives come from the fact that definite and possessed noun phrases can function as predicates.

[6] It must be noted that this algorithm can only handle a single agreement slot per CP – an obvious simplification. In order to extend the analysis towards multiple agreement (e.g., not only subject, but also object agreement), certain adjustments are required, for instance, a decomposition of transitive and ditransitive verbs should be assumed, proposition-denoting nodes (rather than CPs) should introduce barriers to feature percolation, etc. Due to space limitations I will not delve any further into this issue.
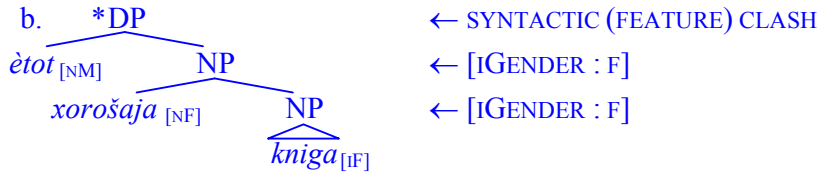
It is important to observe that the presuppositional approach to φ-features necessarily entails that the so-called "semantic agreement" is evaluated under sisterhood, and this does not depend on the formalism chosen here (interpretation of non-inherent features): the fact that APs and determiners can agree semantically or formally in accordance with Agreement Hierarchy can only be captured on the assumption that they agree with their sister.

In the rest of this section I will demonstrate how the proposed algorithm accounts for the observed and impossible mixed agreement patterns.

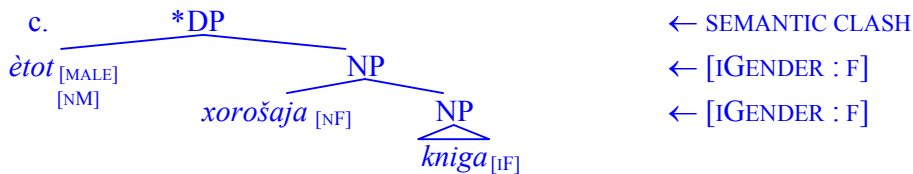### 4.1. [- human] and sexually differentiated nouns

The first case we will examine involves no semantically interpreted agreement features, since we will be dealing with an inanimate noun bearing only grammatical gender:[7]

(20) a. *ètot xorošaja kniga
        this-M good-F book.F

    b.   *DP   ← SYNTACTIC (FEATURE) CLASH
  ètot [NM]   NP   ← [IGENDER : F]
    xorošaja [NF]   NP   ← [IGENDER : F]
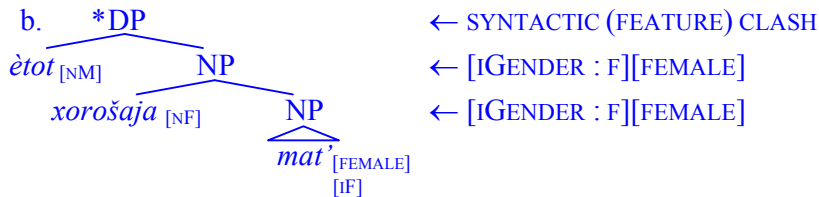   *kniga* [IF]

At the first merger no problems arise: the uninterpretable non-inherent gender feature of the attributive AP is matched with the inherent gender feature of the NP, which then percolates to the NP node. If the determiner had had the feminine gender feature as well, the process would have repeated itself at the second merger. However, the gender feature of the determiner clashes with the gender feature of the NP and the derivation crashes.

Suppose the gender feature of the determiner is semantic, adding to the denotation of the DP presuppositions that an inanimate noun is not compatible with. The result is semantic ill-formedness:

    c.   *DP   ← SEMANTIC CLASH
  ètot [MALE]   NP   ← [IGENDER : F]
     [NM]   *xorošaja* [NF]   NP   ← [IGENDER : F]
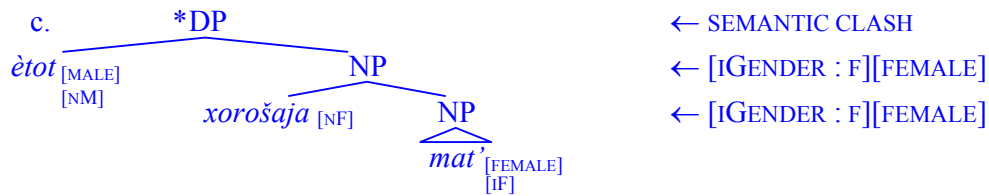   *kniga* [IF]

If we choose a noun denoting a sexed human being, a gender switch within the DP is no better, irrespective of whether the gender features on the determiner are interpreted or not:

(21) a. *ètot xorošaja mat'
        this-M good-F mother.F

    b.   *DP   ← SYNTACTIC (FEATURE) CLASH
  ètot [NM]   NP   ← [IGENDER : F][FEMALE]
    xorošaja [NF]   NP   ← [IGENDER : F][FEMALE]
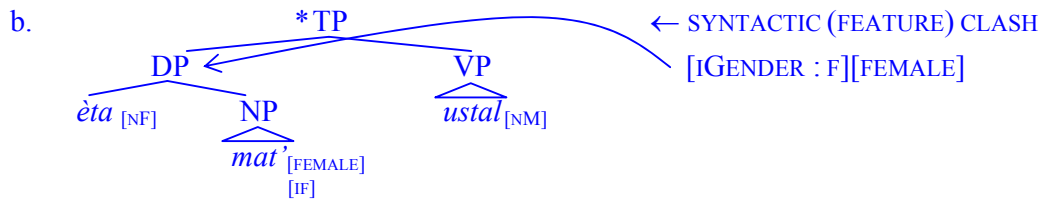   *mat'* [FEMALE]
             [IF]

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[7] In tree diagrams the feature specification [iF] corresponds to the [F] value of the gender feature (NGENDER : F), and likewise for uninterpretable features and other gender values.
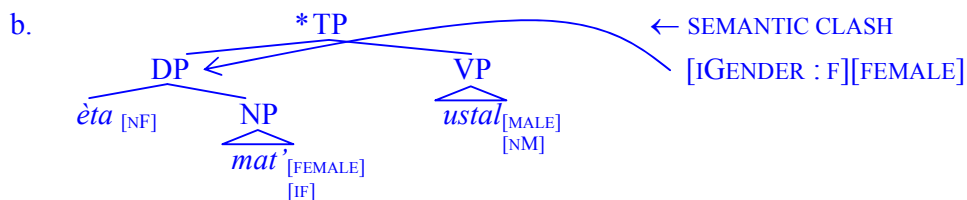
c.   *DP   ← SEMANTIC CLASH

ètot [MALE]   NP   ← [IGENDER : F][FEMALE]

     [NM]

            xorošaja [NF]   NP   ← [IGENDER : F][FEMALE]

                          mat' [FEMALE]
                              [IF]

A combination of a subject with a predicate works in the same way:

(22) a.   *Èta   kniga   krasiv.
          this-F   book.F   pretty-M

     b.   *TP   ← SYNTACTIC (FEATURE) CLASH

          DP   VP   [IGENDER : F][FEMALE]

    èta [NF]   NP   *ustal* [NM]

             mat' [FEMALE]
                 [IF]

(23) a.   *Èta   mat'   ustal.
          this-F   mother.F   is.tired-M

     b.   *TP   ← SEMANTIC CLASH

          DP   VP   [IGENDER : F][FEMALE]

    èta [NF]   NP   *ustal* [MALE]
                           [NM]

             mat' [FEMALE]
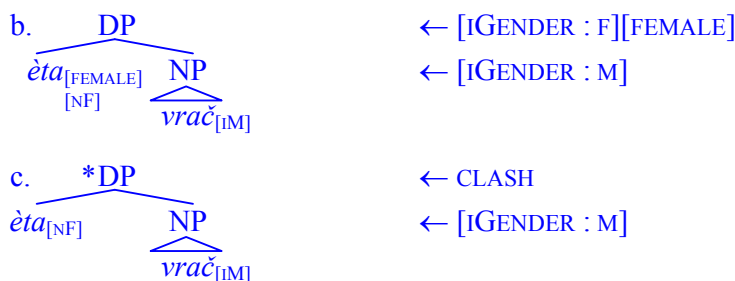   [IF]

The generalization that we can draw from this is that a semantically interpreted feature cannot be overridden by agreement marking, be it interpreted or not. However, an inherent feature that is not interpreted at LF can be so overridden, unless this leads to a semantic clash. We can see cases of such override with profession nouns, giving rise to mixed agreement.

4.2. Mixed agreement of hybrid nouns

A hybrid noun is inherently specified for grammatical gender, but not for the sex of entities in its extension. As discussed above, such nouns may show mixed agreement.
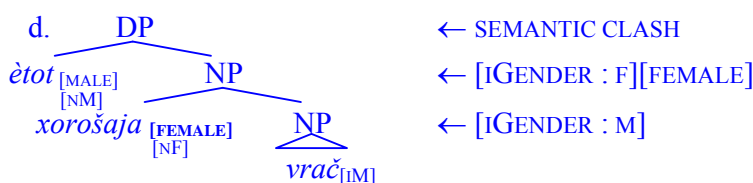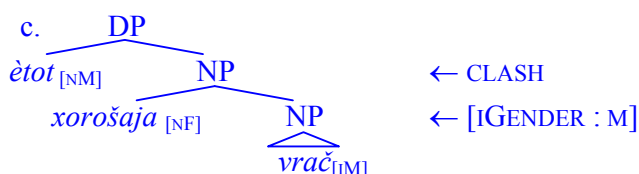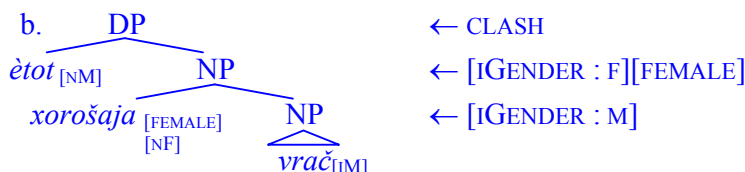
(24) a.   èta   vrač
           this-F   doctor.M
           this (female) doctor

The semantic feature [FEMALE] appears on the demonstrative, overriding the inherent feature of the NP and yielding feminine agreement. If no semantic feature is introduced (i.e., if the agreement marking is not interpreted), a gender clash arises:

     b.   DP   ← [IGENDER : F][FEMALE]

   èta [FEMALE]   NP   ← [IGENDER : M]

     [NF]   *vrač* [IM]

     c.   *DP   ← CLASH

   èta [NF]   NP   ← [IGENDER : M]

            vrač [IM]

Return to syntactic agreement is impossible: two contradicting syntactic features can't be combined unless one of them is interpreted, and two contradictory semantic features can't be combined at all, yielding Corbett's Agreement Hierarchy within the DP:
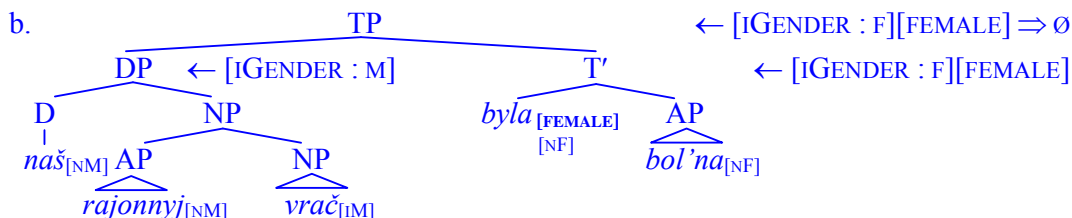
(25) a. *ètot   xorošaja   vrač
         this-M good-F   doctor.M

b.
$$
\begin{array}{ll}
\text{DP} & \leftarrow \text{CLASH} \\
\text{ètot}_{[NM]}\quad \text{NP} & \leftarrow [\text{IGENDER}:\text{F}][\text{FEMALE}] \\
\quad\text{xorošaja}_{[FEMALE]}\;\text{NP} & \leftarrow [\text{IGENDER}:\text{M}] \\
\qquad\qquad\;[NF]\qquad\; \text{vrač}_{[IM]}
\end{array}
$$

c.
$$
\begin{array}{ll}
\text{DP} & \\
\text{ètot}_{[NM]}\quad \text{NP} & \leftarrow \text{CLASH} \\
\quad\text{xorošaja}_{[NF]}\;\text{NP} & \leftarrow [\text{IGENDER}:\text{M}] \\
\qquad\qquad\qquad \text{vrač}_{[IM]}
\end{array}
$$

d.
$$
\begin{array}{ll}
\text{DP} & \leftarrow \text{SEMANTIC CLASH} \\
\text{ètot}_{[MALE]}\quad \text{NP} & \leftarrow [\text{IGENDER}:\text{F}][\text{FEMALE}] \\
\quad\;\;[NM] & \\
\text{xorošaja}_{[FEMALE]}\;\text{NP} & \leftarrow [\text{IGENDER}:\text{M}] \\
\qquad\;\;[NF]\qquad \text{vrač}_{[IM]}
\end{array}
$$

No derivation of the ungrammatical (25a) is possible, correctly predicting the behavior of mixed agreement inside a noun phrase. The same system also accounts for mixed predicate agreement:

(26) a. Naš   rajonnyj   vrač   byla   bol'na.
         our-M district-M doctor.M was-F sick-F
         Our district doctor was sick.

The feature [FEMALE] is introduced where gender switch occurs:

b.
$$
\begin{array}{ll}
\text{TP} & \leftarrow [\text{IGENDER}:\text{F}][\text{FEMALE}] \Rightarrow \emptyset \\
\text{DP}\;\leftarrow[\text{IGENDER}:\text{M}]\qquad\quad \text{T}' & \leftarrow [\text{IGENDER}:\text{F}][\text{FEMALE}] \\
\text{D}\qquad\text{NP}\qquad\quad \text{byla}_{[FEMALE]}\;\text{AP} & \\
\text{naš}_{[NM]}\,\text{AP}\qquad\text{NP}\qquad\;[NF]\qquad \text{bol'na}_{[NF]} & \\
\quad \text{rajonnyj}_{[NM]}\quad \text{vrač}_{[IM]} &
\end{array}
$$

No gender switch within the predicate is possible, because if two non-inherent features ([nF]) are merged, they must have the same value, and a semantic feature cannot override a non-inherent feature.[8] Thus Corbett's (1979) Agreement Hierarchy for mixed agreement is fully predicted.

---

[8] The picture becomes more complex once movement is taken into consideration: in fact, the subject originates within the small clause. In the example above mixed agreement within the predicate is impossible, however, it is not excluded in principle, as suggested by the Serbo-Croatian mixed number agreement discussed by Hahm and Wechsler 2007.

4.3. Common nouns

The so-called *common gender* nouns (all [+ human] nouns in the first (*-a*) declension that are not semantically [male]) give rise to a different set of problems:

(27) a. Ja   znaju ètogo   nesčastnogo   sirotu.   Iomdin 1980:456
         I   know   this-M-ACC   unhappy-M-ACC   orphan-ACC
         I know this unhappy (male) orphan.

    b.   Ja   znaju ètu   nesčastnuju   sirotu.
         I   know   this-F-ACC   unhappy-F-ACC   orphan-ACC
         I know this unhappy (female) orphan.

The grammatical gender specification of common nouns is a thorny issue. Nesset 2001 claims that common nouns are marked as [+ feminine], a formal specification that does not correspond to the [female] presupposition. If this is correct, then common gender nouns should behave like hybrid nouns, which, as we have assumed, are marked [+ masculine]. Such is, however, not the case, since in many dialects and idiolects common gender nouns trigger masculine or feminine agreement in function of the referent, but totally prohibit the mixed agreement pattern characterizing hybrid nouns, as in (28). In addition, common nouns trigger semantically determined concord also in oblique cases, which is impossible for hybrid nouns (Volynec 2005).

(28) a. *ètot   kruglaja   sirota
         this-M   total-F   orphan

Assuming that nouns like *sirota* 'orphan' are unmarked for gender, we correctly predict that mixed agreement is impossible with them: since the noun has no gender specification, the non-inherent gender feature on the AP should be valued by a semantic gender feature on the AP itself or on a higher modifier or determiner. The appearance of a conflicting gender feature, whether interpretable or not, leads to problems, since a non-inherent semantic feature cannot override a non-inherent uninterpretable feature:

(28) b. *DP   ← SYNTACTIC (FEATURE) CLASH
     ètot [NM]   NP   ← [IGENDER : F][FEMALE]
        kruglaja[FEMALE]   NP   ← [IGENDER : Ø]
                [NF]
                   sirota[IGENDER : Ø]

    c.   *DP   ← CLASH
     ètot [NM]   NP   ← UNLICENSED NON-INHERENT FEATURE
        kruglaja[NF]   NP   ← [IGENDER : Ø]
                  sirota[IGENDER : Ø]

In the absence of non-inherent gender features in the derivation (i.e., in the absence of modifiers or determiners), the sex of the referent remains undetermined. It should be noted, however, that in some idiolects and dialects common gender nouns with feminine agreement, especially in predicate position, can nonetheless describe males (Volynec 2005). For such dialects it seems reasonable to assume that there common nouns are inherently specified as [+ feminine] (Nesset 2001), and we then expect that in these dialects mixed agreement should become possible.

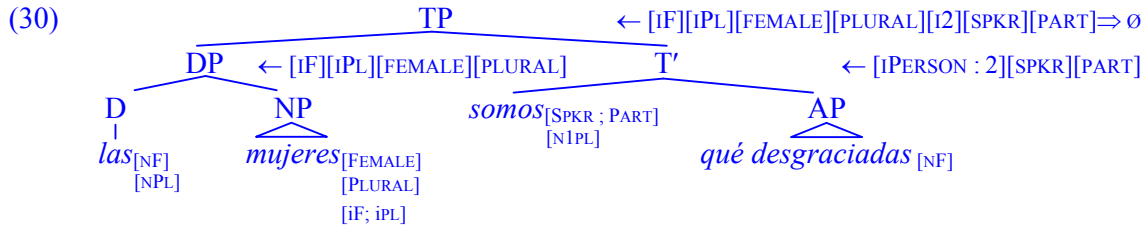## 4.4. Mixed person agreement

For the sake of completeness we now turn to mixed agreement involving person or number:

(45) ¡Qué   desgraciad-as   somos   las   mujer-es!   Spanish; Corbett 2006:132
     how   unfortunate-F.PL   be.1PL   DEF.F.PL   women.F-PL
     How unfortunate we women are!

We will assume the standard semantics for person and number:

(29) a.   ⟦SPEAKER⟧ = λf . λx : x contains the speaker . f (x)
     b.   ⟦PARTICIPANT⟧ = λf . λx : x contains a participant . f (x)
     c.   ⟦PLURAL⟧ = λf . λx : x is non-atomic . f (x)

Ignoring the focalization of the predicate AP and the concomitant inversion of the main verb, we obtain the following:

(30)

TP   ← [IF][IPL][FEMALE][PLURAL][I2][SPKR][PART] ⇒ Ø

DP   ← [IF][IPL][FEMALE][PLURAL]   T′   ← [IPERSON : 2][SPKR][PART]

D   NP   *somos*$_{[SPKR\ ;\ PART]}$ AP
| $_{[N1PL]}$
las$_{[NF]}$ *mujeres*$_{[FEMALE]}$ *qué desgraciadas* $_{[NF]}$
$_{[NPL]}$ $_{[PLURAL]}$
                        $_{[iF;\ iPL]}$

As the simplified representation in (30) shows, mixed person agreement can be treated along the same lines as mixed gender agreement; the same is true for number.

4.5. Summary

We have proposed an approach to clause-internal mixed agreement consisting of two parts: a mechanism, by which agreement is achieved (roughly, matching of valued features at MERGE) and a hypothesis as to how mixed agreement arises (as a result of interpreting non-inherent gender features). The two parts of the proposal are independent of each other: it is possible to envisage an alternative system, where regular agreement is handled as in the standard view, by the probe-goal system, whereas mixed agreement arises as a result of encoding interpreted gender presuppositions as non-inherent gender marking, which, being interpretable, does not act as a probe.
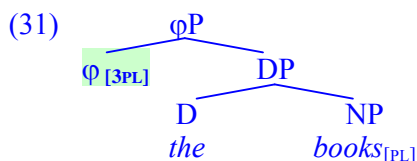
There are two reasons against such a mixed approach: the first one is the inadequacy of the standard agreement mechanism where it comes to non-canonical instances of agreement (see section 3). As these facts suggest that the probe-goal mechanism should be revised, we appeal here to an agreement mechanism based on sisterhood in order to unify the syntactic and semantic sides of agreement and thus simplify the discussion. The question remains, however, why mixed agreement for gender is a lot more common. Also, while the mechanism proposed here correctly predicts the impossibility of reverting to strict syntactic agreement, it does not explain why DP-internal mixed agreement is a prerequisite for DP-external mixed agreement, i.e., Corbett's (1979) Agreement Hierarchy across languages.

5. ALTERNATIVE PROPOSALS

Unsurprisingly, mixed agreement phenomena have already been studied in the generativist literature. In this section I will present the three previous attempts to formally account for it: the introduction of functional φ-heads, hosting interpretable φ-features (Sauerland 2004), the distributed gender hypothesis (Steriopolo and Wiltschko 2008) and the interface-based view where uninterpretable φ-features may fission off the predicate and become interpretable at LF (Neeleman 2008).

5.1. φ-heads as the locus of semantic interpretability

Sauerland 2004 proposes that φ-features can be interpreted only on φ, the head of a new functional projection φP topping the extended NP. Everywhere else they appear as a result of syntactic agreement. Thus in (31), [PL] is interpretable on φP but not on the NP, and [3], also interpretable, triggers no agreement inside the extended NP.
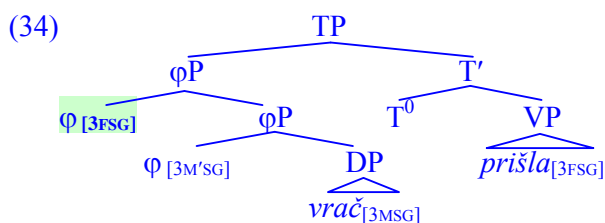
(31)

$$
\begin{array}{c}
\varphi P \\
\swarrow \quad \diagdown \\
\varphi\,\text{[3PL]} \qquad DP \\
\qquad \swarrow \quad \diagdown \\
\qquad D \qquad\quad NP \\
\qquad \textit{the} \qquad \textit{books}_{[PL]}
\end{array}
$$

Elsewhere φ-features can be either inherent and uninterpretable (e.g., gender on nouns) or inserted wherever required by the morphosyntax of a particular language (e.g., gender on adjectives) and also uninterpretable. Importantly, φ-features on φP should match φ-features elsewhere in a way to be made precise below. Tied in with this hypothesis is Sauerland's proposal on how φ-features are interpreted, namely the idea that interpreted features receive a presuppositional interpretation (cf. Cooper 1979 on pronouns, Heim and Kratzer 1998):

(32) $[\![F]\!](x)$ is only defined, if all atomic parts of x are female.
$[\![F]\!](x) = x$, where defined.

The presuppositional interpretation of φ-features makes it possible for Sauerland to make a clear distinction between marked and unmarked features values. Thus, while [SG] introduces a presupposition on its sister (its denotation must be an atom), [PL] is semantically neutral and thus compatible with both an atomic and a non-atomic entity; it is a pragmatic principle that is responsible for the impossibility of using plural marking with semantically singular NPs. Likewise, feminine is marked (referring to females only), while masculine is not (the default case), and the third person is unmarked (no presupposition), while the second person (contains a discourse participant) is weaker than the presupposition of the first person (contains the speaker).[9]

As a result, Sauerland's system allows him to handle a variety of phenomena, of which mixed agreement is only one. To deal with hybrid nouns such as *vrač* 'doctor' in Russian (or *sentinelle* 'sentinel' in French), Sauerland 2004 makes use of the iteration of φPs:

(33) Vrač   prišla.   Corbett 1983, 1991, 2006
       doctor.MSG   arrived-FSG
       The doctor has arrived.

(34)

$$
\begin{array}{c}
TP \\
\swarrow \qquad\qquad\qquad \diagdown \\
\varphi P \qquad\qquad\qquad\qquad T' \\
\swarrow \quad\quad \diagdown \qquad\qquad\qquad \swarrow \quad \diagdown \\
\varphi\,\text{[3FSG]} \quad\quad \varphi P \qquad\quad T^{0} \qquad\quad VP \\
\qquad\qquad \swarrow \quad \diagdown \qquad\qquad\qquad \textit{prišla}_{[3FSG]} \\
\qquad \varphi\,\text{[3M'SG]} \quad\quad DP \\
\qquad\qquad\qquad\qquad \textit{vrač}_{[3MSG]}
\end{array}
$$

Since in Russian, as in many other languages, feminine is more marked than masculine, no semantic conflict arises between the [F] feature on the higher φP and the [M′] feature on the lower φP.[10] The feature [M′] in the lower instance of φ introduces no presuppositions and

---

[9] Obviously, since pronouns can also be animate or inanimate, as well as obviative and reflexive, this list does not exhaust the range of presuppositional features available for NPs, be they considered to be φ-features or not.

[10] Sauerland's own view is slightly more complicated, as he stipulates that the [M] feature on the lower φ remains uninterpreted. There is, however, no reason to introduce this stipulation, since interpretable φ-features need no licensing and, masculine being unmarked, [M'] introduces no presuppositions.

only serves to license the noun *vrač* 'doctor', which is listed in the lexicon as bearing the uninterpretable feature [M]. On the other hand, the feature [F] on the higher instance of φ does introduce the presupposition that the referent of the DP is a female and serves to license the feature [F] on the predicate. To ensure that the predicate can agree only with the higher set of φ-features, Sauerland uses the Minimal Link Condition (Chomsky 1995):

(35) **Minimal Link Condition**

Agreement is always with the closest phrase that has a feature of the right category.

As a result, the Agreement Hierarchy (Corbett 1983, 1991, 2006) is partially dealt with: the presence of semantic agreement inside the subject rules out syntactic agreement on the predicate. On the other hand, since the relation between the higher and the lower φ is not that of syntactic agreement, the Minimal Link Condition is irrelevant there, and unmatched φ-feature values are possible.

Since in Sauerland's proposal only interpretable φ-features on φ may not match fully, it correctly predicts that predicate agreement can be with the semantic gender. However, mixed agreement inside the subject is not predicted, contrary to fact:

(4) b. Naša vrač – umnica.
our-**FSG** doctor.M clever.person
Our doctor (female) is very clever.

One uninterpretable φ-feature is not licensed in (4b). If the structure is as in (36a), the uninterpretable [M] feature on the noun *vrač* 'doctor' cannot be licensed, because there is no interpretable instance of [M] in the structure. If the structure is as in (36b), the uninterpretable [F] feature on the determiner is not licensed, since the intervening lower φP blocks licensing by the higher φP. Finally, if the featural specification of the single φP is as in (36c), the uninterpretable [F] feature on the determiner is still not licensed and the presupposition that the entire DP denotes a female is not reflected in the structure.

(36) a.
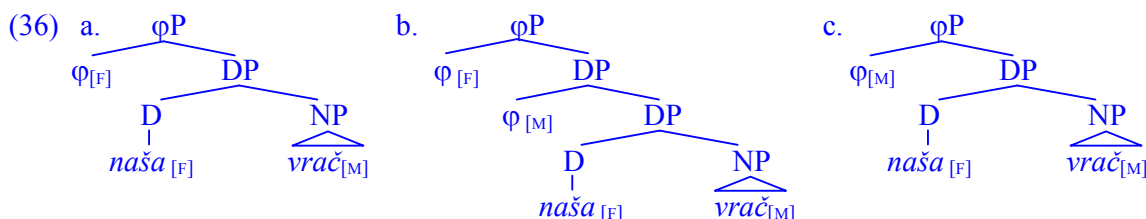
Another problem with Sauerland's theory is that the agreement mechanism, dependent as it is on φPs, is restricted to referring (or quantified) DPs. DP-internal agreement, however, may also occur in predicate positions (although mixed agreement is impossible there):

(37) Ivanova byla xorošim vračom.   Russian
Ivanova was good-MSG-INSTR doctor.M-INSTR
Ivanova was a good doctor.

Predicates, being of the semantic type ⟨e, t⟩, do not refer and thus cannot combine with a φ-head. As a result, the feature [M] on the noun *vrač* 'doctor' (or anywhere inside its NP) cannot be licensed.

The fact that Sauerland's proposal cannot account for mixed agreement inside NPs or for concord within NP predicates is not in itself a reason to reject it, since both problems are due to the particular semantic type (⟨e, e⟩) chosen by Sauerland for his φ-features and vanish if φ-features are treated as identity functions not on entities but on predicates.[11] However, if

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[11]This is the proposal implicit in Pesetsky 2010, postulating a dedicated functional head to host such features.

φ-features are merged as functional heads rather then inserted as a last resort operation, an NP containing no agreement markers whatsoever is predicted to permit the presupposition of a particular gender, contrary to fact: no accommodation effects arise in such circumstances.
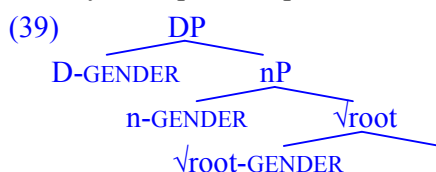
Before passing to other proposals, it is necessary to remark that Sauerland's approach is intended to deal with several other phenomena, where agreement does not correspond to the surface featural specification of a given NP. The relevant phenomena include, among others, split agreement of *committee*-nouns in British English (Sauerland and Elbourne 2002), the English singular *they*, obligatory singular agreement with quantifiers such as *every*, the use of 3SG or 2PL for polite second person singular, and plural pronouns in the Russian comitative construction (Vassilieva and Larson 2001). However, gender crucially differs from number and person in that gender feature values do not have to stand in the subset relation, which is abundantly demonstrated by the availability of mixed agreement with both masculine and feminine nouns in French (see also fn. 4):

(38) Sa   Majesté/   mon   médecin   est   inquiet/inquiète.   French
     3FSG-POSS majesty.F my-M doctor.M is   worried-M/F
     His Majesty/my doctor is worried.

A grammatically feminine NP (*sa majesté*) can appear with masculine marking on the predicate if pragmatically the referent is male, and vice versa, a grammatically masculine NP (*mon médecin*) can appear with feminine marking. Since two sets of gender features cannot be simultaneously subsets of each other, Sauerland's analysis does not deal with all cases of mixed gender agreement.

5.2.   Distributed gender hypothesis

One approach specifically designed to deal with mixed agreement is the distributed gender hypothesis by Steriopolo and Wiltschko 2008. In order to explain why the same noun phrase may trigger masculine or feminine marking on the predicate while denoting the same entity, they propose that gender may be projected more than once inside the NP. In particular, they identify three possible positions in the extended NP where gender might be introduced:

(39)
```
            DP
       ╱         ╲
  D-GENDER       nP
           ╱          ╲
      n-GENDER        √root
               ╱         ╲
          √root-GENDER
```

Although agreement can be triggered by all these types of gender, from the semantic standpoint they are different. Thus √root-GENDER, according to Steriopolo and Wiltschko 2008, is a fully interpretable property of animate nouns like *father* or *cow*, whose referent is necessarily male or necessarily female. Inanimate nouns obviously lack √root-GENDER.[12]

Languages with strictly semantic gender systems, such as Tamil, Dizi and Halkomelem Salish, result from only √root gender being projected. In languages like Latin, Russian or French, on the other hand, where gender specification is semantic for humans (or animates) and grammatical elsewhere, nominal roots denoting males are specified [M], those denoting females are specified [F] and the remainder, including common gender nouns have no √root gender, which incorrectly predicts that they should behave the same with respect to mixed agreement (cf. section 4.3).

However, in mixed gender languages both inanimate nouns and nouns denoting human individuals without specifying their sex necessarily belong to some gender, which is not the

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[12] It is self-evident that the formal gender of a given simplex (without an overt n) noun is not arbitrary within a given language (e.g. *house* is masculine in Russian, but neuter in Dutch). Therefore, some information about gender (or the choice of the relevant covert n⁰) must be encoded on the root even in inanimate nouns.

"residue" gender (e.g., neuter). Thus, for instance, in French *personne* 'person' and *sentinelle* 'sentinel' are feminine even though not necessarily denoting women, while *médecin* 'doctor' and *clavier* 'keyboard' are grammatically masculine, even though doctors can be female and keyboards have no sex at all.

It is to formalize this arbitrary grammatical gender that n-GENDER is introduced. It is also there to account for the arbitrary gender of some animates, like diminutives in German or in Dutch, which are necessarily neuter:

(40) a.   DP
     D   nP$_{[M]}$
        n   √Mann 'man'
        [M]   [M]

    b.   DP
     D   nP$_{[N]}$
        n$_{[N]}$ √Mann 'man'
        -chen-   [M]

Since the nominalizing suffix *n* can introduce a particular gender, which must override the underlying semantic gender of an animate noun (thus the German *Mannchen* 'little man' is grammatically neuter despite being male), it is completely logical to assume that *n* can be specified for gender. It is likewise obvious that more than one *n* can be present in the NP structure, since diminutive suffixes can stack on top of other nominalizing suffixes. In such circumstances the topmost n-gender necessarily wins.

Finally, D-GENDER is also semantic and corresponds to the sex of the referent of the DP as determined by the discourse. When √root gender is specified, D-gender must presumably be identical to it in order to avoid semantic conflict. However, D-gender can also be present when the semantics of the noun itself is compatible with either. This happens in Russian with hybrid nouns like *vrač* 'doctor' and with common gender nouns, like *sirota* 'orphan', neither of which have √root gender in this approach:

(41) a.   DP
    D$_{(female)}$ nP
      N   √sirot- 'orphan'

    b.   DP
    D$_{(female)}$ nP$_{[masc]}$
      N$_{[masc]}$ √vrač 'doctor'

From the theoretical standpoint it is not altogether clear under which circumstances D-gender is projected, since it is argued to be available with hybrid nouns, but not with regular nouns (like *čelovek* 'person'), though no explanation for such selectiveness is provided. From the empirical point of view this approach also runs into problems with DP-internal mixed agreement: since gender selection is only available at n and D, agreement options available to an attributive AP are not predicted:[13]

(42) Umelyj/umelaja vrač   bystro   postavila plombu.   Asarina 2008
     skillful-M/F   doctor.M quickly stood.up   filling
     The skillful doctor quickly put in the filling.

As (42) shows, agreement on the adjective *umel-* 'skillful' can be determined by either n-gender (which is projected below the adjective) or D-gender (which is projected above the adjective), and from the feminine agreement of the predicate it can be inferred that D-gender is projected in both cases (n-gender is, obviously, always there, since the root √*vrač* has be nominalized, and the selection of a particular (masculine) covert n⁰ is uniquely determined by the root). In other words, just as in Sauerland's proposal, only subject-predicate agreement is

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[13] As noted by Rothstein 1980, Nikunlassi 2000 and Asarina 2008, whether APs agree with the grammatical or discourse gender of the noun depends on their semantics. Some observations by David Pesetsky, p.c., lead in the same direction. Some of these facts can be accounted for by the presuppositional approach to gender features and more specifically, by the proposal that interpretable gender features are identity functions over predicates: mixed agreement is correctly predicted to be impossible with syncategorematic adjectives, on the assumption (McNally and Boleda 2004) that such adjectives apply not to entities but to kinds: their meaning and their semantic type make them therefore incompatible with interpretable gender features.

considered here, which is a natural consequence of placing discourse gender on top of the DP.

5.3. LF feature fission

The same problem arises within the approach proposed by Neeleman 2008 and based on the hypothesis that feature values are assigned to various nodes independently and then mutually identified according to the following principles:

(43) a. **Radical Interpretability** (Brody 1997):
Each feature must receive a semantic interpretation in some syntactic location.

b. **Elsewhere Condition** (applied to agreement)
If φ1 and φ2 can both be licensed in V and φ1 is more highly specified than φ2, then φ1 blocks φ2.

As a result of these principles, non-inherent feature values (on the verb, or presumably, elsewhere in the predicate) override inherent feature specification (of the subject DP) if the former feature bundle is less highly specified than the latter, giving rise to mixed agreement. To account for the interpretative results of mixed agreement, the mechanism of LF-fission is introduced: under certain language-specific conditions the φ-features of the verb may fission off and be interpreted on the subject.[14]

Neeleman 2008 discusses only number and person. Following standard assumptions (, dual is viewed as more highly specified than plural, which yields a straightforward account of the number agreement in Inari Sami (Corbett 2006:146) and Jingulu (Pensalfini 2003:173-174, Neeleman 2008), where the dual is marked on the verbs, while non-pronominal subjects allow only the singular/plural distinction:

(44) a. Alma-h   kuáláást-ava onne.   Inari Sami; Corbett 2006:146
man-PL.NOM fish-3DU   today
The two men are fishing today.

b. Alma-h   kuáláást-eh onne.
man-PL.NOM fish-3PL   today
The men are fishing today.

The same phenomenon can arise with person, where the 3rd person is standardly viewed as simple absence of person features (Benveniste 1966):

(45) a. ¡ Qué desgraciad-as   somos las   mujer-es!   Spanish; Corbett 2006:132
how unfortunate-F.PL be.1PL DEF.F.PL women.F-PL
How unfortunate we women are!

b. Nadie lo   vimos.   Spanish; Moravcsik 1978:351
no.one 3MSG.ACC saw-1PL
None of us saw him.

c. Deca-ta   otid-oxme   v gradina-ta.   Bulgarian; Corbett 2006:172
children-DEF go-AOR-1PL to garden-DEF
We children go to the garden.

In both sets of cases the "additional" features on the predicate are fissioned off and then interpreted on the subject. Similar cases from Tamil and Yawuru, collective NP agreement in British English (Sauerland and Elbourne 2002), as well as the associative plural of the Talitsk dialect of Russian (Bogdanov 1968 via Corbett 2006:155), are treated along the same lines.

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[14] The fact that LF-fission is particularly specified to occur only with verbs makes Neeleman's approach unable to account for mixed agreement elsewhere than between the subject and the predicate (more specifically, the VP). Obviously, this problem is easy to fix.

In essence, Neeleman's account is very similar to mine and covers (with the exception of DP-internal mixed agreement) the same set of data: while in my approach non-inherent φ-features can be interpreted in-situ, in his proposal they are relocated to where they become interpretable. However, the mechanism of LF-fission, unmotivated except for cases of mixed agreement, appears theoretically indistinguishable from movement, but does not obey c-command. In addition to this theoretical shortcoming, Neeleman makes crucial use of the subset relation between feature values, which, as we have shown in section 5.1, may not hold for gender.

5.4. Summary

The three alternative proposals dealing with mixed agreement share the intuition that mixed agreement between the subject and the predicate is caused by the presence of an additional set of φ-features, which in one way or another end up on the edge of the DP. The particular location of interpretable φ-features in these accounts (on top of the DP) leads to their inability to deal with mixed agreement DP-internally. The crucial use of the presumed subset relation between sets of presuppositional features also makes two of the three unable to deal with mixed gender agreement.

6. CONCLUSION

In this paper I have examined the phenomenon of morphological agreement as a possible diagnostic for the postulated syntactic operation with the same name. I have shown that the various formulations of this operation do not account for all the configurations in which morphological agreement takes place, nor is it capable of dealing with the phenomenon of mixed agreement. I proposed an algorithm for deriving mixed agreement on the assumption that it is amounts to assigning a semantic interpretation to non-inherent features. Formally, φ-features are introduced into the derivation valued; non-inherent φ-features must be checked (on MERGE) by inherent φ-features or to be interpreted semantically.

An additional feature of the analysis proposed here is that unlike the standard probe-goal or Spec-head mechanisms it is applicable to mixed agreement triggered by binominal NPs, a.k.a. the *N of an N* construction (Milner 1978, Ruwet 1982, Abney 1987, Napoli 1989, Aarts 1994, 1998, Bennis, Corver and den Dikken 1998, etc.), exemplified below:

(46) Mon/ma vache de frère s' est arrangé pour être pris.
my-M/F cow of brother REFL-be-PRES-3SG arranged-M for be-INF taken-M
My bastard of a brother arranged it for himself to be busy.

Since mixed agreement is linked to interpreted non-inherent φ-features, agreement with the discourse gender of the subject in (46) is not a problem, despite the fact that the formal bearer of this gender value (*frère* 'brother') is embedded within the subject with the first noun (*vache* 'cow') potentially acting as an intervener. Non-canonical agreement targets, such as adverbs (Corbett 2006:44-45), can also be treated, suggesting that an agreement mechanism based on sisterhood rather than c-command is on the right track.

The hypothesis that mixed agreement is caused by exceptional interpretation of formal features also suggests a way of unifying syntactic agreement with other instances of feature covariance on the assumption (cf. Postal 1969) that pronouns are actually full-fledged DPs, whose overt determiner may bear an interpretable non-inherent feature.

7. BIBLIOGRAPHY

Aarts, Bas. 1994. The syntax of binominal noun phrases in English. *Dutch Working Papers in English Language and Linguistics* 30, 1-28.
Aarts, Bas. 1998. Binominal noun phrases in English. *Transactions of the Philological Society* 96, 117-158.

Abney, Steven. 1987. The English Noun Phrase in its Sentential Aspect, Doctoral dissertation, MIT. Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL.

Allan, Edward. 1976. Dizi. In *The Non-Semitic Languages of Ethiopia*, ed. by Lionel Bender, 377-392. East Lansing, Michigan: African Studies Center, Michigan State University.

Asarina, Alya. 2008. Gender and adjectives in numeral constructions in Russian. Ms., MIT.

Bennis, Hans. 2000. Adjectives and argument structure. In *Lexical Specification and Insertion*, ed. by Peter Coopmans, Martin Everaert and Jane Grimshaw. *Current Issues in Linguistic Theory*, 27-69. Amsterdam: John Benjamins.

Bennis, Hans. 2004. Adjectives and psych verbs. In *The Unaccusativity Puzzle: Explorations of the Syntax-Lexicon Interface*, ed. by Artemis Alexiadou, Elena Anagnostopoulou and Martin Everaert. *Oxford Studies in Theoretical Linguistics*, 84-114. Oxford: Oxford University Press.

Bennis, Hans, Norbert Corver, and Marcel den Dikken. 1998. Predication in nominal phrases. *The Journal of Comparative Germanic Linguistics* 1, 85-117.

Benveniste, Emile. 1966. Structure de relations de personne dans les verbes. In *Problèmes de linguistique générale*, ed. by Emile Benveniste, 225-236. Paris: Gallimard.

Bogdanov, V.N. 1968. Osobyj slučaj dialektnogo soglasovanija skazuemogo s podležaščim po smyslu i kategorija predstavitel'nosti. *Naučnye doklady vysšej školy: filologičeskie nauki* 4, 68-75.

Brody, Michael. 1997. Perfect chains. In *Elements of Grammar*, ed. by Liliane Haegeman, 139-167. Dordrecht: Kluwer.

Carstens, Vicki. 2000. Concord in Minimalist Theory. *Linguistic Inquiry* 31, 319–355.

Chomsky, Noam. 1986. *Barriers*. Cambridge, Massachusetts: MIT Press.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, Massachusetts: MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: the framework. In *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, ed. by Roger Martin, David Michaels and Juan Uriagereka. Cambridge, Mass.: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: a Life in Language*, ed. by Michael Kenstowicz, 1-52. Cambridge, Mass.: MIT Press.

Chung, Sandra. 1982. On extending the null subject parameter to NPs. In *Proceedings of WCCFL 1*, ed. by Daniel P. Flickinger, Marlys Macken and Nancy Wiegand, 125-136. Stanford, California: Linguistics Department, Stanford University.

Cinque, Guglielmo. 1989. On embedded verb second clauses and ergativity in German. In *Sentential Complementation and the Lexicon: Studies in Honour of Wim de Geest*, ed. by Dany Jaspers, Yvan Putseys, Wim G. Klooster and Pieter A. M. Seuren, 77-96. Dordrecht: Foris.

Cinque, Guglielmo. 1990. Ergative adjectives and the lexicalist hypothesis. *Natural Language & Linguistic Theory* 8, 1-39.

Cinque, Guglielmo. 1994. On the evidence for partial N movement in the Romance DP. In *Paths Towards Universal Grammar*, ed. by Guglielmo Cinque, Jan Koster, Jean-Yves Pollock, Luigi Rizzi and Raffaella Zanuttini, 85-110. Georgetown: Georgetown University Press.

Cooper, Robin. 1979. The interpretation of pronouns. In *Selections from the Third Groningen Round Table*, ed. by Frank N. Heny and Helmut S. Schnelle. *Syntax and Semantics 10*, 61-92. New York: Academic Press.

Corbett, Greville G. 1979. The agreement hierarchy. *Journal of Linguistics* 15, 203-224.

Corbett, Greville G. 1983. *Hierarchies, targets and controllers: agreement patterns in Slavic*. University Park, Pennsylvania: Pennsylvania State University Press.

Corbett, Greville G. 1991. *Gender*. Cambridge Textbooks in Linguistics. Cambridge: Cambridge University Press.

Corbett, Greville G. 2006. *Agreement*. Cambridge: Cambridge University Press.

Crisma, Paula. 1996. On the configurational nature of adjectival modification. In *Grammatical Theory and Romance Languages*, ed. by Karen Zagona. *Current Issues in Linguistic Theory*, 59-71. Amsterdam: John Benjamins.

Dixon, R. M. W. 1982. *The Dyirbal Language of North Queensland*. Cambridge: Cambridge University Press.

Doleschal, Ursula, and Sonja Schmid. 2001. Doing gender in Russian: Structure and perspective. In *Gender Across Languages. The linguistic representation of women and men*, vol. 1, ed. by Marlis Hellinger and Hadumod Bußmann, 253-282. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Elbourne, Paul. 2002. Situations and Individuals, Doctoral dissertation, MIT.

Grevisse, Maurice. 2006. *Le bon usage. XIII édition*. Paris-Gembloux: Duculot.

Hahm, Hyun-Jong, and Stephen Wechsler. 2007. Untangling the Russian predicate agreement knot. In *Proceedings of the LFG07 Conference*, ed. by Miriam Butt and Tracy Holloway King. Stanford, California: CSLI.

Heim, Irene, and Angelika Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.

Iomdin, L.L. 1980. O russkix suščestvitel'nyx tak nazyvaemogo obščego roda. *Izvestija Akademii Nauk SSSR. Serija literatury i jazyka* 39, 456-461.

Koopman, Hilda. 1992. On the absence of Case-chains in Bambara. *Natural Language & Linguistic Theory* 10, 555-594.

Koopman, Hilda. 1996. The Spec-head relation. In *Syntax at Sunset. UCLA Working Papers in Syntax and Semantics 1*, 37-65. Los Angeles, California: Department of Linguistics, UCLA.

McNally, Louise, and Gemma Boleda. 2004. Relational adjectives as properties of kinds. In *Empirical Issues in Formal Syntax and Semantics 5*, ed. by Patricia Cabredo Hofherr and Olivier Bonami.

Mel'čuk, Igor. 1958. Statistika i zavisimost' roda francuzskix suščestvitelnyx ot ix okončanija. *Bjulleten' ob"edinenija po problemam mašinnogo perevoda* 7, 13-40.

Milner, Jean-Claude. 1978. *De la syntaxe à l'interprétation*. Paris: Seuil.

Moravcsik, Edith. 1978. Agreement. In *Universals of Human Language*, vol. 4, ed. by Joseph H. Greenberg, 331-374. Stanford: Stanford University Press.

Napoli, Donna Jo. 1989. *Predication Theory: A Case Study for Indexing Theory*. Cambridge: Cambridge University Press.

Neeleman, Ad. 2008. Subset controllers. Paper presented at *Words don't come easy*, University of Verona, November 17-18, 2008.

Nesset, Tore. 2001. How pervasive are sexist ideologies in grammar? In *Language & Ideology: Cognitive Theoretical Approaches*, ed. by René Dirven, Bruce Hawkins and Esra Sandikcioglu, 197-227. Amsterdam/Philadelphia: John Benjamins.

Nikunlassi, Ahti. 2000. *Gender in Grammar and Cognition, chapter On gender assignment in Russian*. Berlin: Mouton de Gruyter.

Pensalfini, Robert. 2003. *A Grammar of Jingulu: An Aboriginal Language of the Northern Territory*. Pacific Linguistics 536. Canberra: Pacific Linguistics.

Pesetsky, David. 2010. Russian case morphology and the syntactic categories. Ms., MIT.

Pesetsky, David, and Esther Torrego. 2007. The syntax of valuation and the interpretability of features. In *Phrasal and Clausal Architecture: Syntactic derivation and interpretation*, ed. by Simin Karimi, Vida Samiian and Wendy K. Wilkins. *Linguistik Aktuell/Linguistics Today 101*, 262-294. Amsterdam: John Benjamins.

Postal, Paul. 1969. On so-called "pronouns" in English. In *Modern Studies in English. Readings in Transformational Grammar*, ed. by David A. Reibel and Sanford A. Schane, 201-224. Englewood Cliffs, New Jersey: Prentice-Hall Inc.

Rothstein, Robert A. 1980. Gender and reference in Polish and Russian. In *Morphosyntax in Slavic*, ed. by Catherine V. Chvany and Richard D. Brecht, 79-97. Columbus, Ohio: Slavica.

Ruwet, Nicolas. 1982. *La Grammaire des insultes et autres études*. Paris: Editions du Seuil.

Sauerland, Uli. 2004. A comprehensive semantics for agreement. Ms., ZAS, Berlin.

Sauerland, Uli, and Paul Elbourne. 2002. Total reconstruction, PF movement, and derivational order. *Linguistic Inquiry* 33, 283-319.

Schlenker, Philippe. 1999. La flexion de l'adjectif en allemand: la morphologie de haut en bas. *Recherches Linguistiques de Vincennes* 28.

Schoorlemmer, Erik. 2009. Agreement, dominance and doubling: the morphosyntax of DP, Doctoral dissertation, Leiden University. Utrecht: LOT Publications.

Sportiche, Dominique. 1995. French predicate clitics and clause structure. In *Small Clauses*, ed. by Anna Cardinaletti and Maria-Teresa Guasti. *Syntax and Semantics 28*, 287-324. New York: Academic Press.

Starke, Michal. 1995. On the format of small clauses. In *Small Clauses*, ed. by Anna Cardinaletti and Maria-Teresa Guasti. *Syntax and Semantics 28*, 237-269. New York: Academic Press.

Steriopolo, Olga, and Martina Wiltschko. 2008. Distributed GENDER hypothesis. Paper presented at *FDSL 7.5*, Independent University of Moscow, December 6-8, 2008.

Szabolcsi, Anna. 1987. Functional categories in the noun phrase. In *Approaches to Hungarian 2: Theories and Analyses*, ed. by István Kenesei, 167-191. Szeged: József Attila University.

Tucker, G. R., W. E. Lambert, and A. A. Rigault. 1977. *The French speaker's skill with grammatical gender: An example of rule-governed behavior*. The Hague: Mouton.

Tuller, Laurice. 1986. Bijective relations in Universal Grammar and the syntax of Hausa, Doctoral dissertation, UCLA.

Valois, Daniel. 1991. The Internal Syntax of DP, Doctoral dissertation, UCLA.

Vassilieva, Masha, and Richard K. Larson. 2001. The semantics of the plural pronoun construction. In *Proceedings of Semantics and Linguistic Theory (SALT) 11*, ed. by Rachel Hastings, Brendan Jackson and Zsofia Zvolenszky, 449-465. Ithaca, New York: Cornell University, CLC Publications.

Volynec, T. N. 2005. *Sovremennyj russkij jazyk. Kategorija roda imeni suščestvitel'nogo*. Minsk: Byelorussia State University, Philology, Russian Language Department.

Wechsler, Stephen, and Larisa Zlatic. 1999. Agreement in Discourse. In *Proceedings of the Conference on the Structure of Non-narrative Texts*, ed. by Carlota S. Smith. *Occasional Papers in Linguistics*. Austin, Texas: Department of Linguistics, University of Texas, Austin.