Gender as a grammaticalized classifier system: the case of the Serbo-Croatian neuter

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Departing from an analysis of collective nouns under which they are nouns with a cumulative reference and a count semantic base, but without a uniform atomic level, and hence without a stabile unit of counting, the paper argues that gender, as a near counterpart of classifiers, has a role in specifying the unit of counting. Taking neuter gender in Serbo-Croatian as the absence of gender (Kramer 2009), it is analyzed as a class of nouns which do not morpho-syntactically express the restriction over the unit of counting. In the domain of count nouns, the combination with count semantics yields nouns with non-uniform atomicity. Neuter count nouns are thus argued to be nouns which fail to formally express uniform atomicity, which makes them quantized counterparts of collective nouns (i.e. quantized, non-uniformly atomic). While the non-uniform atomicity does not affect their singular forms, it is argued that neuter nouns in SC are unable to derive proper plural forms, and that productively derived collective forms are used instead. In other words, all neuter nouns in SC effectively have the status of singulatives – in the sense that they are expressions which refer to singularities and establish contrast in grammatical number with collective rather than with plural forms. A range of puzzling empirical phenomena related to neuter nouns is shown to be straightforwardly resolved by this view of the semantic effects of the absence of gender. The paper also includes a discussion of Serbo-Croatian collective nouns, showing that their behavior in respect of number agreement triggered on the finite verb and licensing of reciprocal interpretations are determined by whether they are derived from an existing singular base, and whether they remain within its paradigms. Traditional neuter plurals, argued in this paper to be collectives, are shown to pattern in this respect with the collectives braća *'brother.Coll' and* deca *'child.Coll', as they all belong to the paradigm of their singular bases, and as expected they all require plural agreement on the verb and license reciprocal predicates.*

Keywords: classifiers, gender, neuter, plural, uniform atomicity, Serbo-Croatian

1. Introduction

The degree to which gender and classifier systems are counterparts of each other, has been subject to a substantial typological work in linguistics and while of course many questions remain to be answered, significant insights have been presented to the linguistic audience (Dixon 1982, Corbett 1991, Aikhenvald 2000 among many others). Most clearly, the two systems are related in their role in the classification of the nominal lexicon, and in mediating the grammatical reflexes of this classification. No parallelism has been observed, however, regarding the role classifiers play in the grammatical expression of the specification of the unit of counting. No counterpart of this property has been attested with regard to gender.

In this paper I try to fill this gap in the parallel between the gender and the classifier systems, arguing that in SC gender plays a role similar to the role of classifiers in respect of the expression of count nominal semantics: that it syntactically expresses, and hence activates, a property of the count semantics: the uniformity of the units of counting. My arguments are based on the properties of the neuter gender, under the assumption that neuter gender stands for the absence of gender (Kramer 2009). I first give a general overview of the SC (declension, number and) gender system, then I present in more detail the proposed analysis in which neuter nouns are argued to fail to derive proper plural forms and to use collective forms instead, and finally I overview a set of puzzling phenomena illustrating the awkward behavior of the SC neuter gender, and show how they are easily explained and sometimes even predicted under the proposed analysis.

Any research on gender within a single language is at risk to fail to provide general conclusions, being preoccupied and carried away by the idiosyncrasies of the particular language and so is the

research reported in this present paper. The insights and models offered in this paper are thus primarily meant to apply to the Serbo-Croatian (SC) data, and clearly a more general application needs first to be checked against substantial empirical data from other languages. At the same time, the notions the paper focuses on: count vs. mass semantics, presence vs. absence of gender(-equivalent) features, relations with the derivational base, atomicity and its property of uniformity are all general enough that a certain cross-linguistic generality of the relations argued for is expected to obtain. Testing whether it does and to what extent is left for future research.

The paper is organized as follows. In section 2, I present the basic properties of the SC gender system and its relation with declension classes. Section 3 presents the proposed analysis of the traditional neuter plural forms in structural case forms as collective forms, giving also a deeper insight into the common properties and mutual differences between the different collective forms in SC. Section 4 presents seven puzzling phenomena related to the SC neuter nouns, and manifests how the proposed analysis explains these data. Section 5 concludes.

2. SC declension classes and gender system

In this section, I present the traditional, broadly accepted view of the system of gender in SC and its mapping with declension classes. While this view suffers from many issues (see Arsenijević 2015a), it serves well the purpose of a general background for the questions which are in the focus of this paper. Where the shortcomings of the traditional view have consequences for the discussion of the SC neuter, this is explicitly pointed out.

Under traditional descriptions, Serbo-Croatian (SC) has three values of gender: masculine, feminine and neuter, and two values of number: singular and plural, with paucal forms in a limited set of contexts (e.g. Despić 2010). It involves three declension classes (Mrazović and Vukadinović 1990), which I henceforth refer to as first, second and third declension class, i.e. declension I, II and III, as given in (1).

(1) SC declensions

	Declension I, Sg	Decl I, Pl	Decl II, Sg	Decl II, Pl	Decl III, Sg	Decl III, Pl
Nom	jelen-Ø 'deer' prozor-Ø 'window' slov-o 'letter'	prozor-i slov-a	vaz-a 'vase'	vaz-e	ljubav-Ø	ljubav-i
Gen	jelen-a prozor-a slov-a	prozor-a: slov-a:	vaz-e:	vaz-a:	ljubav-i	ljubav-i:
Dat	jelen-u prozor-u slov-u	prozor-ima slov-ima	vaz-i	vaz-ama	ljubav-i	ljubav-ima
Acc	jelen-a prozor-Ø slov-o	prozor-e slov-a	vaz-u	vaz-e	ljubav-Ø	ljubav-i

Inst	jelen-em prozor-om slov-om	prozor-ima slov-ima	vaz-om	vaz-ama	ljubav-ju/-i	ljubav-ima
Loc	jelen-u prozor-u slov-u	prozor-ima slov-ima	vaz-i	vaz-ama	ljubav-i	ljubav-ima

SC data clearly confirm the view of theoretical morphology presented in Aronoff (1994), Wechsler and Zlatić (2000, 2003), Alexiadou (2004) a.o., that gender and declension classes are two distinct categories. The mapping between SC gender and declension classes based on traditional descriptions holds as in (2), where the masculine nouns in declension II are usually taken to be exceptions, with the class itself considered to be feminine. Still in a principled view, the second declension class has to be taken as one which includes both feminine and masculine nouns.

(2)   The mapping between nominal declension classes and gender values

Declension class	Gender
I	M, N
II	F(, M)
III	F

Assuming that neuter is semantically the weakest, least marked gender value, and that feminine is the strongest marked one (see e.g. Kramer 2009), declension I (Decl_I) maps to the two less marked values of gender, neuter and masculine, declension II (Decl_II) to masculine and feminine, and declension III (Decl_III) only to the most marked value of feminine.

3 Neuter gender and its collective plural
This paper is most directly concerned with the traditional grammatical neuter gender. While the grammatical masculine gender has a semantic anchor in the nouns denoting biologically masculine animate individuals, and grammatical feminine analogously in the biologically feminine ones, neuter is traditionally taken to correspond to the unspecified, undeterminable or for other reasons unavailable biological gender.

As made clear in section 2, I follow Kramer (2009) in taking neuter to stand for the absence of gender. Gender is often connected with classifier systems in the typological literature. These two systems are argued to not be identical, but to be playing very similar roles in grammar (Dixon 1982, Corbett 1991, Aikhenvald 2000). Both these systems are argued to reflect the classification of nouns in the lexicon. It is pointed out that languages typically have only one of the two systems, and that the few languages that have both have them realized in different domains of the lexicon and/or of the grammar. This distribution suggests that they target the same niche in the system of grammatical categories and that they specify the same type of information. Typically, languages with inflective morphology are observed to have gender, and languages with little or no morphology tend to have classifiers, with a mixed picture respecting this global tendency in the continuum between.

One apparent difference between gender and classifier systems relates to the role classifiers take in languages like Mandarin or Cantonese, where in addition to the lexical classification, they are involved in the grammatical marking and expression of the count nature of the noun. Hence, in syntactic models like Borer (2005) classifiers are generated and interpreted in a syntactic projection often dubbed ClP or DivP, involved in the specification of the unit of counting. No similar role is typically observed to be played by gender, and consequently gender has not been related to the respective projection. When it comes to this role, it is rather grammatical number that is typically

identified as the counterpart of the classifier system in inflective morphology languages (see Borer 2005 for a detailed elaboration).

I argue here that while number indeed takes the central place in deriving the properties of quantity in the nominal domain, gender also plays a major role in it: a role very similar to the role of classifiers. More precisely, in this paper I provide evidence for the claim that the absence of gender, i.e. neuter gender, fails to grammatically mark and express a restriction on the atomic level of the denotation provided by the lexical semantics of the noun, thus failing to provide the uniformity of the units of counting, which is a precondition for deriving plural forms.

I argue that plural involves the following three semantic components: cumulativity, atomicity, and uniformity of the atomic level.[1] Both classifiers and gender play a crucial role in marking the uniform atomicity semantic component. Classifiers do it in a way which involves also some lexical semantics, i.e. in addition to the formal effect of marking the uniform atomicity, they also express some of the properties which restrict the unit of counting to a uniform one. Gender, on the other hand, only realizes the formal component of imposing uniformity on the unit of counting, i.e. on the atomic level of the denotation of the noun. Without a classifier or gender, the denotation of a noun cannot be uniformly atomic.[2] Since uniform atomicity is a condition for the derivation of the plural forms, such expressions cannot derive plurals. Instead, I argue that in SC they derive collective forms, which also refer to pluralities, but without the uniform atomicity semantic component.

It follows that gender only shows this type of effect in count nouns, i.e. nouns whose lexical semantics provides a specification of the unit of counting. With such nouns, gender mediates the grammatical expression of this specification, i.e. its syntactic effects and its semantic effects which are established through structural relations (such as the measuring-out effect in respect of eventualities or distribution effects in respect of quantified expressions).

Before going into more details about the proposed view of neuter nouns, let me briefly clarify the notion of uniform atomicity and the semantics of collective nouns. I adopt the view from Arsenijević (2007), where collective nouns are discussed and analyzed as nouns with cumulative atomic reference with units of counting underspecified for their defining properties, which causes them to be non-uniform. For instance, in animate nouns like *stoka* 'cattle', or *živina* 'poultry', the units of counting are variable along their defining properties of biological gender (its presence and value), while in those like *dečurlija* 'children.Coll', *pešadija* 'infantry', the units of counting vary along different possible defining dimensions, including some prototypical classifier properties like size, but also ad hoc properties potentially implied by the context. Inanimate collective nouns like *nameštaj* 'furniture', *oprema* 'equipment' involve a variation among the units of counting in the typical classifier properties such as size, shape and function.

The logic of the argument about the role of uniform atomicity in the formation of plurals is that if the atomic level is not uniform, then small pluralities in Link's (1983) join semi-lattice, consisting of two or three singularities (for instance, a table lamp and a large cupboard), will not make a sufficiently homogeneous object to satisfy the cumulative reference of the plural noun (in the given case the noun *furniture*). Consequently, the join semi-lattice cannot be formed, and the proper plural interpretation does not obtain. It is for this reason that pluralities with atomic units which extensively vary in the typical classifier properties such as shape (a glove and a belt, both being clothing), size (a lamp and a cupboard, both furniture) or function (a safety boot and a diabetic sock, both footwear) are denoted by collective nouns: the use for (larger) pluralities is their most frequent use and it has taken the shape of the default morpho-syntactically singular form, without any corresponding form that could refer to singularities within the domain (except for periphrastic expressions).

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[1] A uniform atomic level is in fact implied by theories in which plurals take part in introducing a scalar structure, such as Landman (2003, 2004), because in order to map onto the same scale, the units of counting must be uniform in the relevant way.

[2] The data indicate that in classifier systems, without a classifier the nominal expression can also not be atomic, while in gender systems atomicity is possible without gender, but this is not central for the arguments of the paper, and hence I do not discuss it in more detail.

This view is supported by the fact that indeed collective nouns in SC are pragmatically strongly marked, giving the flavor of a wordplay, when used strictly referentially for small pluralities, consisting of two, three or four units – especially if these are also uniform at the atomic level.

(3) a. (CONTEXT: Two cows, or two cows and a bull ran out of the stable)
    #Stoka   je   izašla   iz   štale.
    cattle   Aux   gone_out   from   stable
    'The cattle got out of the stable.'

   b. (CONTEXT: four chairs, or three chairs and an arm-chair need to be placed in a room)
    #Rasporedi   nameštaj   po   uglovima.
    arrange   furniture   over   corners
    'Arrange the furniture in the corners.'

The main argument of the paper then can be summed up as follows. Gender shares with classifiers a role in marking uniform atomicity, and neuter (i.e. genderless), as well as collective nouns in SC share the property of having a non-uniform atomic level. Neuter nouns are those non-uniformly atomic nouns which in their default, morpho-syntactically singular forms refer to singularities (i.e. they behave as quantized predicates), and collective nouns are those whose default, morpho-syntactically singular form refers to pluralities (i.e. acts as a cumulative predicate). Due to their non-uniform atomicity, neuter nouns cannot derive plural forms, and resort to collectives instead. In other words, all neuter nouns in SC effectively have the status of singulatives – expressions which refer to singularities and establish contrast in grammatical number with collective rather than plural forms.

More precisely, I argue that what is traditionally considered the nominative/accusative neuter plural is actually a collective form, a suppletive strategy to establish plural reference in spite of the failure to support a morphological plural form.

(4)   Zvon-a   su   zvonila.
not: bells-NomNPl   AuxPl   rang.NomNPl
but: bells-NomNColl   AuxPl   rang.NomNColl
       'The bells were ringing.'

This form of suppletion only targets the structural case forms (nominative and accusative, which are systematically syncretic in SC for the neuter gender), while the oblique case forms are shared with, or borrowed from, the masculine nouns. Potential reasons for this split are briefly discussed in section 3.4.

3.1 Some general properties of Neuter nouns
Let me begin with a relatively vague observation about the neuter nouns in SC. A large number of traditional inanimate neuter nouns denote entities which seem ambiguous between a count and a mass/collective interpretation, such as *polje* 'field', *selo* 'village', *more* 'sea', *stado* 'herd', which is unusual for other genders, where count nouns are more strictly bounded. This is something one would expect for a class with a loosely specified unit of counting.

Moreover, the number of suffixes deriving neuter nouns is more than ten times smaller than the numbers of suffixes deriving masculine and second declension feminine nouns, and close to the number of suffixes deriving third declension feminine nouns, which are a small class with a low productivity. All these suffixes, which are nearly exhausted by the list in (5), derive either collective as in (5a) or mass nouns as in (5b), or diminutives, as in (5c-d), both of which are nouns with particular properties of quantity.

(5) a. -je: stan-je,   sa-zvezd-je,   pisan-je
               stand-je   with-star-je   write-je
               'state'   'constellation'   'writing'

b.	-stvo:	građan-stvo,	bogat-stvo,	poslan-stvo
		citizen-stvo	rich-stvo	sent-stvo
		'citizenship'	'richness, treasure'	'delegation, embassy'

b. -stvo: građan-stvo,   bogat-stvo,   poslan-stvo
citizen-stvo   rich-stvo   sent-stvo
'citizenship'   'richness, treasure'   'delegation, embassy'

c. -če: prozor-če,   služin-če,   mladen-če
window-Dim   servant.Poss-Dim   young-Dim
'little window'   'servant'   'little cookie'

d. -ce: sunaš-ce,   pilen-ce,   ramen-ce
sun-Dim   chicken-Dim   shoulder-Dim
'little sun'   'little chicken'   'little shoulder'

Many of the derived collective and mass nouns have subsequently shifted into count uses or derived them in parallel to the mass use (such is the case with *stanje* 'state', originally a gerund from the verb *stati* 'to stand', or *sazvežđe* 'constellation') While the collective and mass nouns are expected in a declension class which fails to mark uniform atomicity, it is unclear why it also attracts diminutives (especially since there are also masculine and second declension feminine diminutive suffixes). One speculative possibility is that it involves diminution on a varying or vague scale, resulting in units of various sizes.

Apart from suffixal derivation, neuter nouns are also derived by conversion from the neuter form of an adjective or a participle. The conversion is typically marked by a post-lexical stress pattern (Inkelas and Zec 1988, see also section 3.5).

(6) a. bledilo,   pojilo,   spadalo
get_pale.PcplNomNSg   bait.PcplNomNSg   fall_off.PcplNomNSg[3]
'paleness'   '(cattle-)pond'   'joker'

b. predivo,   gorivo,   sečivo
spin_able.PcplNomNSg   burnable   cut_able
'yarn'   'fuel'   'blade'

A considerable number of neuter nouns appear as simplex nouns, without internal structure.

I should make it clear that I am not saying that neuter nouns have lexical semantics which prevents them from realizing uniform atomicity. This holds only for a small number of members of this class, but there are also members which are not atomic in the first place (mass nouns), as well as those whose lexical semantics is perfectly compatible with uniform atomicity, but their accidental neuter gender blocks them from grammatically realizing uniform atomicity.

3.2. SC collective nouns and neuter plurals

In this section, I present a sketch of an analysis of collective nouns in SC. Collective nouns show properties of both mass nouns, in being homogeneous, taking singular morphology and blocking the derivation of the plural, and of morphological plurals in involving atomicity, and for a subset of the collective nouns also in licensing plural agreement on the verb and reciprocal predicates. I argue that the latter property, the availability of plural agreement on the finite verb and the licensing of reciprocal predicates, depends on whether the collective form establishes contrast in grammatical number with a singular form, i.e. whether it is derived from a singular base and remains in its paradigm. If both conditions are fulfilled, collective nouns allow only for plural agreement, if they are derived from singular bases but leave their paradigm, they also allow for a singular agreement on the finite verb. In both cases they license reciprocal predicates. If they are not derived from a singular base, collective forms license only singular agreement. As already specified in section 3.1, I take

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[3] I mark the declension class in the glosses immediately before the specification of (case), number and gender with a Roman number I, II or III, with a gender and animacy superscript where relevant, i.e. for the sub-classes of Decl_I.

plurals to be characterized by cumulative uniformly atomic reference, and collective nouns as cumulative non-uniformly atomic. Proper mass nouns are cumulative non-atomic.

I propose that the collective semantics is shared by all SC collective endings, including the ending -*a*, for which I argue that it occurs both in SC collective nouns in -*a* and in forms traditionally analyzed as neuter plural in the nominative and accusative case. This is in a sense a generalized inversion of Wechsler and Zlatić's (2000) analysis. While they argue that the collective nouns in -*a* involve, among other combinations, the feature combination NPl, I argue here that all the inanimate neuter nouns in structural cases resort to collective forms in -*a* when they need to establish plural reference.

Collective nouns in SC make a productive category, and can be derived from phrases (NPs, PPs, VPs), from a large number of neuter nouns, and rather idiosyncratically from four masculine stems, while at the same time including a number of other idiosyncratic simplex nouns with genuinely collective semantics (typically in cases where the singular base has been lost in the process of language change), as those used in the examples in (7). All these nouns pass the same tests: they do not take plural inflection, they do not combine with (pseudo-)distributive quantifiers like *svaki* 'every' or *mnogi* 'many', they combine with the quantifier *sav* 'all/entire' in singular, and they yield distributive modification with modifiers like *sitan* 'little, fine-grained' or *ceo* 'whole/entire'.

(7) a. stok-a/živin-a/dečurlij-a/pešadij-a/oprem-a/nameštaj-Ø
cattle-Sg/poultry-Sg/children-Sg/infantry-Sg/equipment-Sg/furniture-Sg

*stok-e/*živin-e/*dečurlij-e/*pešadij-e/*oprem-e/*nameštaj-i
cattle-Pl/poultry-Pl/children-Pl/infantry-Pl/equipment-Pl/furniture-Pl

b.	*svaka every.FSg	stoka/živina/dečurlija/pešadija/oprema, cattle/poultry/children/infantry/equipment	*svaki every.MSg	nameštaj furniture
c.	sva all.FSg	stoka/živina/dečurlija/pešadija/oprema, cattle/poultry/children/infantry/equipment 'all (the) cattle/poultry/children/infantry/equipment/furniture'	sav all.MSg	nameštaj furniture
d.	sitna little.FSg	stoka/živina/dečurlija/pešadija/oprema cattle/poultry/children/infantry/equipment 'cattle/poultry/children/infantry/equipment/furniture with units small in size'	sitan little.MSg	nameštaj furniture

Most of the idiosyncratic collective nouns in SC, including all those in (7) with the exception of *nameštaj* 'furniture', are derived by the ending -*a* (*nameštaj* began its life as a deverbal factitive nominalization from *namestiti* 'to set'), at a stage in the history of SC when this ending was productive, and when the bases from which these nouns are derived were actively used. In addition to the idiosyncratic collective nouns as those in (7), there are three classes of collective nouns derived from actively used bases, preserving a semantic link with them, two of which establish an opposition in grammatical number with their respective count singular bases. These three classes are discussed in the following section.

3.3 The derived collective nouns
The three classes of SC nouns which maintain their relation with the base in the present day SC, all share two relevant properties: a) they are morpho-syntactically singular and semantically collective and b) they are derived from stems of count nouns. The three classes are: 1) the nouns *deca* 'child.Coll', *braća* 'brother.Coll', *vlastela* 'aristocrat.Coll' and *gospoda* 'gentleman.Coll', 2) third declension feminine nouns in -*ad* derived from neuter nouns, such as *telad* 'calf.Coll' from *tele* 'calf.Sg', *dugmad* 'button.Coll' from *dugme* 'button.Sg' and 3) nouns derived from phrasal level expressions by the suffix -*je*, such as *granje* 'branch.Coll', *rastinje* 'plant.Coll', literally 'grow-Poss-Coll' (Arsenijević 2007, Simonović and Arsenijević 2014).

(8) a. vlastel(-in)-Ø   vlastel-a   *vlastel-e
     aristocrat-Unit-NomMSg   aristocrat-CollNomFSg   aristocrat-CollNomFPl[4]
     'aristocrat'   'aristocrats.Coll'

     b. tel-e   tel-ad-Ø   *tel-ad-i
     calf-NomNSg   calf-Coll-NomFSg   calf-Coll-NomFPl
     'calf'   'calfs.Coll'

     c. gran-a   gran-j-e   *gran-j-a
     branch-NomFSg   branch-Coll-NomNSg   branch-Coll-NomNPl

In addition to the lack of plural forms, these nouns pass all the other tests given in (7). In contrast to regular count (morphological) singulars, and together with mass nouns, they are infelicitous with distributive quantifiers like *svaki* 'every'.

(9) a. svaka kuća   b. *svaka braća   c. *svaka telad   d. *svaki vazduh
     every house   every brother.Coll   every calf.Coll   every air
     'every house'

They are between the count singulars and mass nouns, and pattern with count plurals, in being restricted to the distributed interpretation with modifiers like *ceo* 'whole': the reading where the modificandum is the aggregate denotation of the collective noun does not obtain.

(10) a. cela kuća   b. cela braća   c. cela telad   d. *ceo vazduh
     whole house   whole brother.Coll   whole calf.Coll   whole air
     'whole house'   'whole brothers'   'whole calves'

     e. cele kuće
     whole houses
     'whole houses'

In addition to speaking to the debate about the availability of distributive reference in mass terms (Cheng 1973, ter Meulen 1981, Gillon 1992, Nicolas 2008 a.o.), this confirms that in many ways, collective nouns behave as mass terms, but as opposed to them, they still have an atomic level of reference available for modification (similar to *large furniture* vs. **large air* in English).

Finally, that cumulative atomic reference is to be attributed to collective nouns, contrasting them with mass nouns, is inferred also from their agreement with the finite verb. While mass nouns can only trigger Sg agreement on the verb, certain classes of collective nouns either allow only for plural agreement, or have both options available, Sg and Pl.[5]

(11) a. Voda izvire/*izviru.
     water well.Sg/Pl
     'The water wells.'

     b. Deca se jure/*juri.
     child.Coll Refl chase.Pl/Sg
     '(The) children are chasing each other.'

     c. Gospod-a dolazi/dolaze.
     gentleman.Coll come.Sg/Pl
     '(The) gentlemen.Coll are coming.'

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[4] Here Coll stands for the semantic effect of the ending, and the remaining part of the gloss gives the formal features of the form. These forms are not entirely ungrammatical, but their use has the same effect as with mass nouns: coercion from homogeneous semantics into count semantics, thus setting them beyond the domain of interest of this paper.

[5] Plural agreement is not available to the collective nouns derived by the suffix *-je*, as discussed in section 3.5.

d. Tel-ad-Ø   se   igra/igraju
    calf-Coll-NomFSg   Refl   play.Sg/Pl
    '(The) calves.Coll are playing'

It appears that the semantic contribution of the collective suffixes *-a* and *-ad* is in suppressing, but not entirely removing the atomic level, i.e. in suspending the count nature of the noun while keeping available for reference its counting units, and shifting the expression towards, but not all the way to the mass type of reference. Arsenijević (2007) captures this in terms of the uniformity of the atomic level, arguing that collective endings in SC (in particular the suffix *-je*) cancel the presupposition of uniformity of the atomic level: a presupposition which is part of the meaning of every count noun, and which holds that the units of counting are approximately identical in the relevant properties (the relevant properties most prominently including degrees of animacy, biological gender, shape, size and function). In this view, collective nouns are similar to count plurals in cumulatively referring in the domain of atomic units, but differ from them in lacking the presupposition of uniformity. This brings them close to mass nouns, which completely lack any presupposition of atomicity.

(12) Hierarchy of atomicity in cumulative reference:

plurals	>	collectives	>	mass terms
cumulative		*cumulative*		*cumulative*
atomic		*atomic*		*non-atomic*
uniform		*non-uniform*		*non-uniform*

Now we can also specify the semantic content of the collective suffixes, including the ending *-a*. They impose the type of reference which is cumulative and atomic, but lacks the uniformity component.

(13)   *-ad.Coll*, *-je.Coll*, *-a*.Coll: [+cumulative], [+atomic], [-uniform]

In the next section, I formulate my proposal to analyze the traditional Nom/Acc NPl ending *-a* as the same ending *-a* specified in (13) for the collective nouns in *-a* and discuss the question why neuter takes a collective rather than plural ending and why exactly in the two structural cases. Then I briefly come back to some asymmetries between the different collective suffixes to show that they confirm rather than bringing to question the proposed analysis.

3.4 Neuter, animacy, individuation

Neuter is traditionally seen as the weakest, i.e. semantically the least marked gender. In recent literature, Kramer (2009) represents three gender systems in terms of the absence of gender (the traditional neuter), unmarked gender feature (masculine) and marked gender feature (feminine). Neuter also shows special properties regarding the relation between the base and the derived word in derived neuters, as presented in more detail in section 4.6: neuter nouns derived from bases of other genders cannot take the traditional NPl ending *-a*. Moreover, neuter does not seem to go well with animate semantics: the aggregate number of animate neuter nouns (excluding those which bear semantic masculine gender, and which are also limited in number) reaches a few dozens, and they are all diminutives.

Recall that neuter shares its entire declension with masculine, the only differences being in the structural cases, where it bears the ending *–e/o* instead of the masculine *-Ø* for nominative, i.e. *-Ø/-a* for accusative (for inanimate and animate nouns, respectively) in singular, and the ending *-a* instead of the masculine *-i* and *-e* for nominative and accusative, respectively, in plural. The thematic vowel of these endings in all the oblique cases in Pl, which also occurs in the NomPl of masculine, but not of neuter forms, indicates that the neuter declension borrows these endings from the masculine declension.

(14) Oblique case forms in plural (except for the genitive), shared between masculine and neuter nouns all involve the thematic vowel instantiated also in the masculine nominative form

	Declension I, MPl	Declension I, NPl
Nom	prozor-**i**	slov-a
Gen	prozor-a:	slov-a:
Dat	prozor-**i**-ma	slov-**i**-ma
Acc	prozor-e	slov-a
Inst	prozor-**i**-ma	slov-**i**-ma
Loc	prozor-**i**-ma	slov-**i**-ma

The discussion of the neuter gender in the beginning of section 3, and that in section 3.3 bring count neuters into a close connection with the collective nouns, as they are both specified as non-uniformly atomic. Adding cumulativity to the denotation of count neuter nouns, which by default have quantized semantics in their singular forms, gives them exactly the specification of collective nouns, including those derived by the suffix -*a*. Hence, I propose that the traditional NPl ending -*a* is in fact the collective suffix -*a*, which derives neuter nouns referring to pluralities. The collective form is derived because the defective, non-uniform atomicity of the neuter cannot support the plural ending, which requires strong, uniform atomicity. Count neuter nouns cannot inflect for plural, but take the collective suffix -*a* instead, deriving thus collectives in place of plurals.

Let me briefly digress here to the diachronic grammar. A very prominent line of researchers in the Indo-Europeanist tradition observes a range of typological facts in contemporary Indo-European (IE) languages and in some of the dead ones, pointing towards a collective nature of the apparent NPl forms (Schmidt 1889, Sturtevant 1948, Lehmann 1958). Lehman (1958: 190) argues that the contemporary NPl forms in -*a* all originate from the IE collective neuter form, which is reconstructed as one of two productive forms for reference to pluralities, and that the entire IE feminine class in -*a* has originally formed from two derivational patterns, one deriving agentive nominalizations and another deriving collective forms.

It is thus not surprising that in SC the traditional neuter plural declension still includes a productive collective form in -*a* in the structural case slots, while borrowing masculine endings to fill the oblique case slots. I speculate that the reason is that structural cases are, and oblique cases are not specified for the uniformity of the atomic level.

(15)   Cumulative atomic declension of the neuter noun *pismo* 'letter'

Nominative	pism-a	[cumulative] [atomic] [non-uniform]
Genitive	pism-aa	[cumulative] [atomic]
Dative	pism-ima	[cumulative] [atomic]
Accusative	pism-a	[cumulative] [atomic] [non-uniform]
Instrumental	pism-ima	[cumulative] [atomic]
Locative	pism-ima	[cumulative] [atomic]

A final question to address in this section is why only structural cases, nominative and accusative, show sensitivity to the (non-)uniformity of the counting units, i.e. why oblique cases would be underspecified in respect of uniformity, as represented in (15). Both nominative and accusative case are linked with structural positions and thematic roles which prototypically interact with the properties of quantity of predicates which assign these case forms to their arguments. The accusative case is prototypically the case of the direct object, which has been observed to 'measure out' the eventuality (Verkuyl 1972, Tenny 1989, Dowty 1991, among many others), and with the goal phrase,

which displays a similar type of behavior (see especially Arsenijević and Gehrke 2009 on Slavic goal phrases and the accusative case). The nominative case is the prototypical case of the subject, and the subject has also been argued to interact with the eventuality at the level of the properties of quantity (Verkuyl 1993, Arsenijević 2006), as well as at the level of control, agentivity and causation (e.g. Folli and Harley 2005). These dimensions of interaction are strongly sensitive to properties of quantity such as cumulativity and atomicity (a rich body of literature, ever since Vendler 1957, Verkuyl 1972, Dowty 1991), and also to animacy, which is linked with gender, as well as more directly with individuation (Grimm 2012). The strong interaction between the properties of the arguments assigned a structural case and the eventuality described by the selecting predicate may plausibly be why in the two structural case forms properties of quantity like uniform atomicity tend to be marked. The oblique cases are only sensitive to the combination of cumulative reference and atomicity. In result, neuter nouns resort to collective forms in the structural cases, while spelling out the default plural forms of the masculine gender in the oblique case forms.

Another possible explanation comes from the considerations of markedness. The structural cases are less marked (Bittner and Hale 1990, Caha 2009), and hence can afford the additional cognitive load of expressing the uniformity of the atomic level, while oblique cases are more marked, exceeding a certain threshold of expressable features, and being forced to leave the features at the end of a hierarchy such as the uniformity of the atomic level unexpressed (see e.g. Despić 2010, Stanković 2015 for a formal elaboration). This is in line with the fact that plural oblique case endings are syncretic for all three values of gender (see the table in (1)).

3.5 Collectives, plural finite verbs and reciprocal predicates

There is an intriguing variation among the SC collective nouns in respect of the agreement in number that they trigger on the finite verb (Corbett 1991, Wechsler and Zlatić 2000, 2003, Alsina and Arsenijević 2012 a, b) and of the licensing of reciprocal predicates (contra Rothstein 2010: 381, who generalizes that collective nouns in principle cannot be reciprocal antecedents). Collective nouns *braća* 'brother.Coll' and *deca* 'child.Coll', as well as the traditional NPl, may only trigger plural agreement on the finite verb, as in (16a-b). Collectives derived by the suffix *-ad* and two of the four idiosyncratic collective nouns derived by the suffix *-a* –*gospoda* 'gentry' and *vlastela* 'nobility' – may trigger either plural or singular agreement on the finite verb, as in (16c-d). Collectives derived by the suffix *-je* and those in *-a* without a singular base are limited to singular agreement, as in (16e-f).

(16) a. Dec-a   *je/su   ustala.
child-CollNomNPl   Aux.Sg/Pl   got_up.FSg/NPl
'(The) children got up.'

    b. Pism-a   *je/su   stigla.
letter-NomNPl   Aux.Sg/Pl   arrived.FSg/NPl
'(The) letters have arrived.'

    c. Tel-ad-Ø   je/su   trčala.
calf-Coll-IIIFSg   Aux.Sg/Pl   run.FSg/NPl
'(The) calves were running.'

    d. Gospod-a   je/su   otišla/otišli.
gentleman-CollIISg   Aux.Sg/Pl   left.[FSg/NPl]/MPl
'(The) gentlemen have left.'

    e. Kamen-j-e   je/*su   padalo/*padala.
stone-Coll-NomNSg   Aux.Sg/Pl   fell.NSg/NPl
'(The) stones were falling.'

    f. Stoka   je/*su   preživala.
cattle   Aux.Sg/Pl   ruminated
'(The) cattle was ruminating.'

Whenever plural agreement is licensed, it also enables the use of reciprocal predicates with collective antecedents, which target atomic members of the respective groups. While the singular version of (17c) as well as (17e, f) are not totally out, the reciprocal interpretation necessarily targets subgroups, and not atomic units (especially clear when the optional reciprocal marker is overtly present).

(17) a. Dec-a   *je/su   se   gledala (jedno s drugim / jedna s drugim).
     child-CollNomNPl   Aux.Sg/Pl   Refl   look.FSg/NPl   with each other.Sg/Pl
     '(The) children looked at each other.'

   b. Pism-a   *je/su   se   međusobno   krzala.
     letter-NomNPl   Aux.Sg/Pl   Refl   mutually   wear_out.FSg/NPl
   (jedno s drugim / jedna s drugim)
   with each other.Sg/Pl
     '(The) letters were causing each other to wear out (by friction).'

   c. Tel-ad-Ø   ??je/su   se   sudarala   (jedno s drugim / jedna s drugim).
     calf-Coll-IIIFSg   Aux.Sg/Pl   Refl   collided.FSg/NPl   with each other.Sg/Pl[6]
     '(The) calves were colliding with each other.'

   d. Gospod-a   je/su   se   zagrlila/zagrlili.
     gentleman-CollIISg   Aux.Sg/Pl   Refl   hugged.[FSg/NPl]/MPl
   (jedan s drugim / jedni s drugim)
   with each other.Sg/Pl
     '(The) gentlemen have left.'

   e. Kamen-j-e   se   sudaralo   ??(??jedno s drugim / *jedni s drugim).
     stone-Coll-NomNSg   Refl_Aux.Sg   collided.NSg   with each other.Sg/Pl
     int. '(The) stones were colliding with each other.'

   f. Stoka   se   gledala   ??(??jedna s drugom / *jedni s drugim).
     cattle   Refl_Aux.Sg   watch.FSg/NPl   with each other.Sg/Pl
     int. '(The) heads of cattle were looking at each other.'

I argue in this section that the variable behavior of the collective endings directly derives from the relation between the derived and the base form in respect of the organization of the lexicon, more precisely, of morphological paradigms. When the collective form derives from a singular base and remains in its paradigm, hence establishing a contrast in grammatical number (in particular in cumulative vs. non-cumulative reference) with the base form, as in the case of the traditional NPl and the collective nouns *braća* 'brother.Coll' and *deca* 'child.Col', it triggers only plural agreement on the finite verb. When the derived collective form leaves the paradigm of the base form and establishes a paradigm of its own, as in the case of the suffix *-ad* and the nouns *gospoda* 'gentleman.Coll' and *vlastela* 'atistocrat.Coll', it will allow for both types of agreement: plural (due to cumulativity and a contrast with the singular base) and singular (due to being the default, hence singular form of the newly established paradigm). Finally, if it does not have a singular base, whether because the base has disappeared, or because it derives from a phrase rather than a singular noun, it only triggers singular agreement on the finite verb. Fortunately for this generalization's falsifiability, SC is a language in which the paradigmatic relations are typically reflected in the prosody (Simonović and Arsenijević 2013, 2014), and the collectives are among the forms that display this marking.

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[6] In this example, if the auxiliary is singular, the reciprocal marking has to be plural, *jedna s drugim* 'with each other.Pl', while the singular form *jedno s drugim* 'with each other.Sg' is out. This additionally illustrates the reported restriction that singular verb allows only a reciprocal interpretation among sub-groups, not among atomic units.
The gender of the reciprocal marker is also a very complex issue, which reveals a lot about the mechanisms of agreement, but due to space limitations we do not discuss it in this paper, leaving it rather for future research.

Let me first introduce the relevant background about paradigms and the issue of leaving the paradigm of the base. I follow the approach of Simonović and Arsenijević (2013, 2014), where paradigms are taken to be independent of the traditional notions of inflection and derivation, and to rather correspond to lexical domains of regular productivity and semantic transparency. All the forms/words derived from the same base which are derived in a productive way (without idiosyncratic selectiveness in respect of which bases may undergo a particular pattern of derivation) and whose semantics compositionally obtains from the morphemes entering the derivation and their structural relations, are by definition members of the paradigm of the base. It is argued that idiosyncrasies with respect to productivity and interpretation, characteristic of the derived forms which establish own paradigms, are a consequence of structural flattening of the base, which triggers the deletion of the lexically encoded prosodic specification, and the postlexical assignment of tone and stress. This results in a systematic phonological marking of the opposition between derived words which are members of the paradigm of the base and those which are not.

Let me illustrate this marking with the prosodic patterns of SC deadjectival and deverbal nominalizations, before showing the facts about the collective nouns. Consider the adjective *književno* 'literary' and the verb *posta(ja)ti* 'become' (suffix *-ja* specifies imperfectivity, where imperfective variants productively derive nominalizations, and perfective variants are highly idiosyncratic). Each of the bases derives two different nominalizations with one and the same suffix, one which fully copies the prosody of the base, and systematically receives a compositional interpretation, and another which has a postlexical penultimate rising accent as a marking of having left the paradigm of the base, by flattening the structure of the stem and establishing an own paradigm.

(18) a. knjìže:vno   >   knjìže:vno:st   /   književévno:st
         literary   literariness   literature

    b. pòsta(ja)ti   >   pòstajanje   /   postánje
         become   becoming   creation of the world by God

Simonović and Arsenijević (2013, 2014) observe that there are suffixes which systematically lead to the establishment of new paradigms, others which may have both types of results, and suffixes which tend to remain within the paradigm of the base (even among suffixes with equivalent semantic contributions).

The four collective nouns in *-a* split in two two-membered subclasses in respect of the prosodic faithfulness to the base, exactly along the lines of their split in agreement and in their ability to be reciprocal antecedents. As illustrated in (20a), the forms *gospoda* and *vlastela* are collective nouns derived from the singular count bases *gospod* 'gentleman, lord' and *vlastel* 'aristocrat'. However, in the forms preserved today, they do not belong to the respective paradigms of their bases, but behave as independent lexical items which establish own paradigms. This is marked by their different prosodic shapes from those of their bases, and even more symptomatically: by the postlexical penultimate rising accent (see (19a)). As in the other cases, here SC marks the paradigmatic relations by replacing the prosodic pattern lexically specified for the bases *gospod* and *vlastel* with a penultimate stress pattern on the derived forms *gospoda* and *vlastela*, as a marking that they have left the paradigms of their bases and established ones of their own (for a detailed elaboration of the prosodic marking of paradigmatic relations, see Simonović and Arsenijević 2013, 2014). The nouns *braća* 'brother.Coll' and *deca* 'child.Coll', on the other hand, preserve the prosodic patterns of their respective bases as given in (19b).

(19) a. vlàste:l   vs.   vlastèla,   gòspo:d   vs.   gospòda
         aristocrat   aristocrat.Coll   gentleman   gentleman.Coll

    b. bràt   vs.   bràća,   dètac   vs.   dèca
         brother   brother.Coll   child   child-NomNSg

Another piece of evidence for the different relations with the paradigms of their respective bases comes from the fact that the forms *gospoda* and *vlastela* do not establish a grammatical number

opposition with the nowadays archaic base forms *gospod* 'gentleman, lord' and *vlastel* 'aristocrat, owner, ruler', but with the nouns *gospodin* 'gentleman' and *vlastelin* 'aristocrat', respectively, which are derived by the suffix *-in* , which is primarily used as to derive Lohmann's (1932) singulatives, i.e. singular forms derived from collective nouns. Both these singular (i.e. singulative) forms have been subsequently derived, as secondary derivations from the collective forms, to denote a unit of the collective pluralities which they denote (see (20), where square brackets mark the boundaries of the paradigm, and the vertical line marks breaking up with the paradigm of the base). Having established an own paradigm, the nouns *gospoda* and *vlastela* lost their singular bases, and in the absence of the opposition they could take on the default, singular declension – due to their ending vowel *-a* fitting into the second declension. This gave the nouns *gospoda* and *vlastela* the option of triggering also Sg agreement on the verb.

(20) a. gòspod   >|>   [gospòd-a   >   gospòd-in]
       gentleman.INomSg   gentleman-CollNomFSg   gentleman-UnitINomSg
       'gentleman, lord'   'gentleman.Coll'   'gentleman'

    b. vlàstel   >|>   [vlastèl-a   >   vlastèl-in]
       aristocrat.INomSg   aristocrat-CollNomFSg   aristocrat-UnitINomSg
       'aristocrat, lord'   'aristocrat.Coll'   'aristocrat'

    c. dét-e   >|>   [dèt-(a)c   >   dèt-c-a]
       child-NomNNSg   child-UnitINomSg   child-Unit-CollNomFSg
       'child'   'child'   'child.Coll'

    d. [bràt   >   bràt-j-a = <braća>]
       brother. NomMNSg   brother-Ext-CollNomFSg
       'brother'   'brother.Coll'

Nouns *braća* 'brother.Coll' and *deca* 'child.Coll', as predicted, preserve the prosodic shape of the base, and establish contrast in grammatical number with their singular bases. This is exactly as expected if they remain in the paradigms of their respective singular bases, and therefore they may only trigger plural agreement.

The agreement patterns of the two subclasses are given in (16), and also below in (21).

(21) a. Braća/deca   dolaze/*dolazi.
       brother.Coll/child.Coll   come.Pl/Sg
       '(The) brothers/children are coming.'

    b. Vlastela/gospoda   dolaze/dolazi.
       aristocrat.Coll/gentleman.Coll   come.Pl/Sg
       '(The) nobility/gentry is arriving.'

Forms derived by the traditional NPl ending *-a*, in the present analysis productively derived collective forms, are expected to behave like the nouns *braća* 'brother.Coll' and *deca* 'child.Coll', which indeed they do: they only allow plural agreement on the finite verb, and they preserve the prosodic shape of the base.

(22) a. sèl-o,   sèl-a;   b. môr-e,   môr-a;
       village-NomNSg   village-NomNPl   sea-NomNSg   sea-NomNPl

    c. čèl-o,   čèl-a.
       chello-NomNSg   chello-NomNPl

Collective nouns in *-ad* pattern with the nouns *gospoda*, *vlastela*, *braća* and *deca* in establishing a full singular declension, unlike the traditional NPl forms which take slots in the plural declension. They pattern more closely with the nouns *gospoda* and *vlastela*, as they also trigger both singular and plural agreement on the finite verb. Prosodically, this class shows ambiguous behavior. These nouns typically allow both for a prosody faithful to the base, and for the default post-lexical pattern,

with a short falling accent on the first syllable, as illustrated in (23) (Inkelas and Zec 1988). The very option of deleting the prosody of the base and assigning a post-lexical pattern indicates that these nouns leave the paradigm of their base.

(23) a. golùb-če   >   gȍlub-č-a:d
        pigeon-DNomMSg   pigeon-Dim-CollNomFSg

    b. kljúse   >   kljȕs-a:d
       horse.NomNSg   horse-CollNomFSg⁷

It thus entirely as expected that since they form an own paradigm, but still stand in a grammatical number opposition with the singular base, *-ad* collectives behave like the nouns *gospoda* and *vlastela*, i.e. that they can trigger either singular or plural agreement on the finite verb, and that they may act as reciprocal antecedents.

Finally, suffix *-je* combines with traditional masculine and feminine inanimate bases, but can neither combine with traditional neuters, nor with any animate noun (unless its interpretation is coerced into inanimate).

(24) a. gran-a   >   gran-je   žen-a   >   *žen-je
       branch-NomFSg   branch-CollNSg   woman-NomFSg   woman-CollNSg

    b. snop-Ø   >   snop-je   lav   >   *lav-je
       beam-NomMSg   beam-CollNSg   lion-NomMSg   lion-CollNSg

    c. pism-o   >   *pism-je   jar-e   >   *jar-je
       letter-NomNSg   letter-CollNSg   baby_goat-NomNSg   baby_goat-CollNSg

Nouns derived by this suffix only trigger singular agreement.

(25) Gran-je   se   njiše/*njišu.
      branch-CollNomNSg   Refl   dangle.Sg/Pl
      '(The) branches (Coll) dangle.'

Nouns derived by the suffix *-je* differ from all other collective nouns in several important respects. While all other collective forms have an ending which also occurs as an FSg ending, and some even establish a feminine declension, nominalizations in *-je* are all of the neuter gender. Moreover, while the suffixes *-a* and *-ad* both combine only with nouns (i.e. nominal stems), and not with phrases, the suffix *-je* applies only at the phrasal level (Arsenijević 2007). It nominalizes NumPs as in (26a), PPs as in (26b), NPs (adjective + noun) as in (26c), VPs as in (26d) and a few other phrasal categories.

(26) a. peto-knjiž-je,   b. pri-mor-je,   c. sveto-sav-lje
       [5-book]-CollNomNSg   [by-sea]-CollNomNSg   [saint-Sava]-CollNomNSg
       'a 5 volume edition'   'coastal area'   'the teaching of Saint Sava'

    d. pravdo-ljub-je
       justice-love- CollNomNSg
       'devotion to justice'

In fact, there is reason to consider the bases to which this suffix attaches universally adjectival. In all the phrasal cases, the base also derives an adjective.

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⁷ Collectives in *-ad* derived from polysyllabic nouns sometimes match their prosodic pattern.
(i)   nedònoš-če   >   nedònoš-č-a:d
     preterm_newborn-DimNomNSg   preterm_newborn-Dim-CollNomFSg
This mathing is plausibly epiphenomenal, resulting from two independent postlexical assignments. More importantly, in present day SC, *-ad* collectives are productively derived only from mono- and disyllabic stems.

(27) a. peto-knjiž-ni, b. pri-mor-ski, c. sveto-sav-ski
        [5-book]-AdjMSg   [by-sea]-AdjMSg   [saint-Sava]-AdjMSg
        '5 volume-ed'   'coastal'   'related to Saint Sava'

      d. pravdo-ljub-iv
         justice-love- AdjMSg
         'devoted to justice'

This view also unifies all *-je* nominalizations under one category of stems, as is also includes those derived from verbal bases, which are universally derived from the passive participle form (confirming the need to reach an adjectival category in order to take this suffix).

(28) a. uč-en-je   b. po-stav-ljen-je
        learn-Pcpl-CollNomNSg   over-put-Pcpl-CollNomNSg
        'learning'   'appointment (of someone to a position)'

Finally, in this way the generalization is preserved that the presence of a value of gender blocks the derivation of collective forms in contemporary SC: adjectives, and hence also adjectival bases, are unspecified for the value of gender (they may agree with any gender), and in that way are similar to neuter bases, taken in this paper to represent the absence of gender specification.

This suffix only directly attaches to monosyllabic stems. This is a morphological rather than purely phonological constraint, as confirmed by the fact that monosyllabic stems which take extensions in certain morphological environment, including the *-je* derivation are still counted as monosyllabic.

(29) a. prozor   > *prozor-je   šišark-a   > *šišark-je
        window-NomMSg   window-CollNSg   pine_cone-NomFSg   pine_cone-CollNSg

      b. drv-o,   drv-et-a   > drv-et-je (= <drveće>)
         wood-NomNSg   wood-Ext-GenNSg   wood-CollNSg

Finally, these nominalizations also show a special prosodic behavior. They neither preserve the prosody of the base, nor take one of the two templates of post-lexical prosody (short falling accent on the initial syllable or a rising accent on the penultimate syllable), but yet a different templatic form, sensitive to the number of syllables in the derived noun. As illustrated in (30), all *-je* nouns have a long penultimate syllable, where disyllabic forms take a long falling accent on the initial/penultimate syllable, trisyllabic ones take a rising accent on the initial/antepenultimate syllable (varying between long and short), and quadrisyllabic forms show variation between a short falling accent on the initial syllable and a short rising accent on the second / antepenultimate syllable.

(30)   a. dissyllabic *-je* nominalizations, a long falling accent on the first/penultimate syllable:
grânje,   prûće,   snôplje,   rôblje,   bîlje
branch.Coll   stick.Coll   beam.Coll   slave.Coll   herb.Coll

        b. trisyllabic *-je* nominalizations, variation between a long and a short rising accent on the initial/antepenultimate syllable, both with a long second/penultimate syllable:
tró-knji:žje   rásti:nje,   sá-zve:žđe,   pód-no:žje,   béz-pu:će,
trò-knji:žje   ràsti:nje,   sà-zve:žđe,   pòd-no:žje,   bèz-pu:će,
3-book.Coll   grow.Coll   with-star-Coll   under-leg.Coll   without-road.Coll

        c. quadrisyllabic *-je* nominaliyations, a short falling initial syllable (Inkelas and Zec' 1988 postlexical prosody), or a short rising second/antepenultimate syllable, both with a long penultimate syllable:
pèto-knji:žje,   dòmo-lju:blje,   mèđu-no:žje,   prèko-re:čje
petò-knji:žje,   domò-lju:blje,   međù-no:žje,   prekò-re:čje
5-books.Coll   home-love.Coll   between-legs.Coll   over-river.Coll

I take it thus that besides selecting for phrases rather than heads, *-je* derives collectives which definitely do not belong to the paradigm of the noun in the base (both because they derive from an

adjectival category, and because they derive from a phrasal category), and that their special behavior in triggering only singular agreement on the finite verb, in spite of their cumulative atomic reference, comes from a conspiracy of these properties and their derived neuter gender (i.e. the absence of the classifier component), which conspire to render the inaccessibility of the atomic level for agreement purposes.

To wrap up, the collective nouns discussed display different degrees of relatedness to the base. Traditional NPls and the nouns *braća* and *gospoda* remain within the paradigm of their base and establish with it an opposition in grammatical number. For this reason, they only trigger plural agreement on the finite verb. Nouns *gospoda* and *vlastela*, as well as collective nouns derived by the suffix *-ad*, leave the paradigm of the base, but still do establish a grammatical number opposition with the singular base forms. Establishing an own paradigm, in which they behave as singular nouns, gives them the additional option of triggering singular agreement on the finite verb. Finally, collective nouns derived by the suffix *-je* and idiosyncratic cases of collectives in *-a* do not even have singular bases, due to their combining with phrasal items. Therefore, they only trigger singular agreement on the finite verb.

4. Seven mysteries of neuter
In this section I provide a set of puzzling empirical phenomena related to the neuter gender which are well explained under the view that neuter gender is the absence of gender, and that one of the semantic effects of this fact is that when the noun has atomic semantics, the absence of gender renders it non-uniformly atomic.

4.1 Neuter: markedness mismatch between semantics and morpho-syntax
As already indicated in section 1, just like in a number of other languages, SC masculine behaves as the unmarked gender, both in acting as the default agreement gender and in being expressed by a null ending; feminine, on the other hand, is marked – again both in requiring a feminine controller to occur in agreement and in having a phonologically visible ending.

(31) a. majmun-Ø   b. lisic-a
          monkey-NomMSg   fox-NomFSg
          '(male or generic) monkey'   '(female or generic) fox'

      c. Ko   je   izgubio/*izgubila/*izgubilo   brushalter?
          who   AuxSg   lost.MSg/FSg/NSg   bra
          'Who has lost her bra?' (lit. 'Who lost his bra?')

      d. Jovan i   Marija   su   otišli   u   bioskop.
          J.NomMSg and M.NomFSg   AuxPl gone.MPl in   cinema
          'Jovan and Marija went to the cinema.'

Neuter gender is traditionally taken to be semantically unmarked, yet it is morphologically marked by a strong ending *-e/-o*. As the value corresponding to absent or underspecified biological gender (see e.g. Kramer 2009 for a formal model), neuter typically refers to inanimates or via diminutives to animate offspring as in (32a), and even if a neuter noun is derived from a base with gendered lexical semantics, the semantic gender specification gets neutralized (see (32b) and Corbett 1991 for a broader discussion). The unmarked, default, nature of the neuter is manifested in its use in impersonals as in (32c), sentences with adverbial or clausal subjects as in (32d) and (32e) respectively, and other contexts where subject is not headed by a bearer of gender.

(32) a. det-e   b. devojk-a   >   devojk-e   =<devojče>
          child-NomNSg   girl-NomFSg   girl-NomNSg
          'child'   'girl'   'little girl'

      c. Na   ulici   se   pevalo/*pevala/*pevao.
          on   street Refl sung.NomNSg/FSg/MSg
          'People sang on the street.'

d. Mnogo   snega   je   palo/*pala/*pao.
   much.Adv   snow.GenMSg AuxSg   fallen.NomNSg/NomFSg/NomMSg
   'A lot of snow fell.'

e. Začudilo   me   je   [što   je   pao   sneg].
   make_wonder.PcplNomNSg   me   AuxSg   Comp   AuxSg   fallen   snow.
   'It surprised me that it snowed.'

As it is expected that a semantically unmarked class corresponds to a morphologically unmarked class (see Horn 1984, Levinson 2000, among many others), this situation begs the question why is a semantically unmarked value of gender matched with a morphologically marked ending.

4.2 Two types of default

The second mystery stems from the one above. As obvious comparing (31c-d) and (32c-e), both masculine and neuter can be inserted as defaults in SC. The question emerges why a grammar would have two defaults of the same feature, and how is it determined which one fits which configuration.

(33) a. Ko   je   zakasnio   ne   može   da   uđe.
        who.Nom   Aux   be_late.NomMSg   not   can   Comp   enter.
        'Those who are late cannot come in.'

     b. Svako   je   mogao   da   pogreši.
        everyone   Aux   could.NomMSg   Comp   err
        'Everyone could make a mistake.'

     c. Sunce   i   kiša   su   se   smenjivali.
        sun.NomNSg   and   rain.NomFSg   Aux.Pl   Refl   take_turns.NomMPl
        'The sun and rain were taking turns.'

Bothe mysteries, the one presented in section 4.1 and the one given in this section are straightforwardly explained by the proposed analysis. In the view of gender argued for in this paper, the absence of gender, even though it is the simplest possible specification, is not the unmarked option for a nominal expression. Gender is a characteristic feature of the nominal category, both as a lexical classification feature only available to it and as a grammaticalized strategy of activating the specification of counting units in the lexical semantics of the noun. Moreover, uniformity is the default characteristic of atomicity, and absence of gender under the present analysis means absence of uniformity of the atomic level. Hence, while absence of gender is the default option in other categories (such as the quantifiers and clauses in (32d, e)), in the nominal category it is not – it is rather a marked option. That neuter is a marked option of gender (un)specification is further confirmed by the data in section 4.7, where even with uniformly neuter subjects neuter agreement cannot be triggered on the verb due to a semantic conflict.

In the present view, hence neuter, as the absence of gender, fits the contexts in which non-nominal expressions sit in the subject position, and hence no gender feature whatsoever is provided by the controller, as in the examples in (32c-e). These subjects are in fact marked, and the agreement triggered is marked as well – they correspond to the marked option of the absence of gender, and of uniformity of units of counting. Masculine gender fits contexts in which a nominal category in the agreement controller position provides gender, but is not specified for its value, or provides conflicting information, like in (33a-b, c) respectively.

In other words, only masculine is the default value of gender. Neuter is its absence. Only masculine is inserted as a default gender. Neuter is not inserted as a default; it is the actual result of agreement with a gender-less subject. This view is confirmed by other nominal expressions lacking gender, such as relative pronouns as in (33a), quantifiers as in (33b) and coordinated subject not even involving a masculine conjunct as in (33c).

Thus, SC only has one default gender: masculine. Neuter and its collective forms, although corresponding to the lightest feature specification, present a marked value of gender which is never inserted by default but rather imposes very strict conditions on its realization. This view is further

supported in sections 4.5, 4.6 and 4.7. It is also supported by the quantitative data. Corpus data excerpted from Arsenijević (2015b), a web-crawled 11M word corpus of lexical frequency show that neuter gender is both represented with a significantly lower number of entries in the lexicon, and with a significantly lower frequency, as illustrated in the graphs below.

(34)   a. The number of lexical items per gender attested
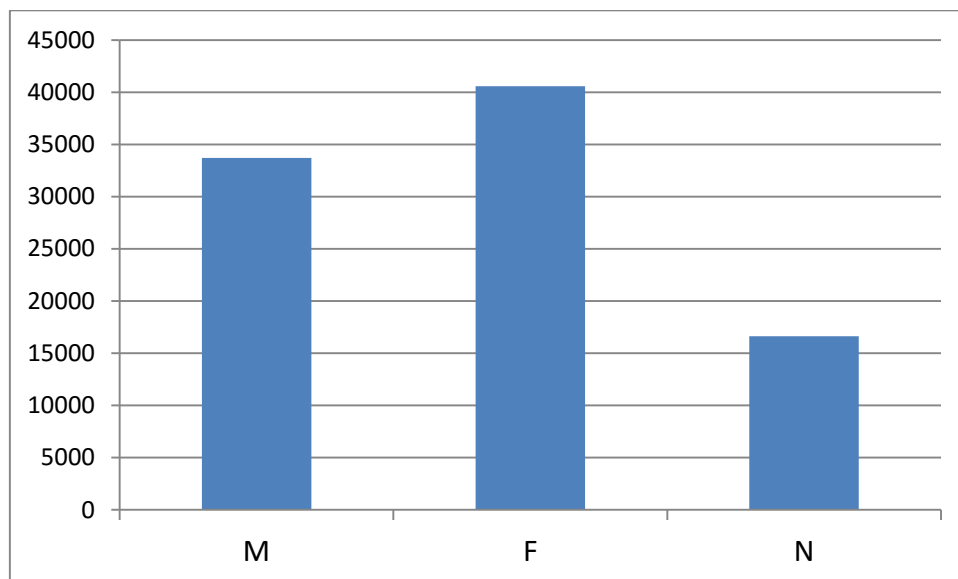
b. Sum of the numbers of occurrences of 1000 most frequent words per gender

Quantitative data, presenting it as both the smallest and least frequent class, suggest that neuter is also the most marked value in quantitative terms, as it is both the smallest class in the lexicon and the least frequent one in use. While the product of the two quantitative measures gives nearly the same result for masculine and feminine, the product for neuter is about five times lower. The analysis involving syntactic and semantic markedness in fact predicts that such a class would be smaller and less open to new members, apart from those derived by the type of suffixes which involves a matching semantics.

4.3 Only neuter nouns productively derive collective forms
As already noted in section 3.2, traditional NPls aside, there are four classes of collective nouns based on their morphological make up:

1. idiosyncratic collective nouns, i.e. collective nouns without an obvious derivational base, most of which are derived from nouns that are not in use any more,

2. collective nouns derived from masculine bases, which are four in number, involve the collective suffix *-a*, and present a closed, unproductive class,

3. collective nouns derived from a subclass of neuter nouns by the suffix *-ad*, which is an open class, still with a significant productivity and

4. collective nouns derived from phrasal expressions by the suffix *-je*, which are a productive class, and are not derived from nouns but from phrasal expressions of different categories.

Of these four classes, only one is both productive and constrained to nominal bases, the class of collective nouns in *-ad*. In other words, only neuter nouns in SC productively derive collective forms. Or more generally, including both collectives in *-je* and those in *-ad*, but also the traditional NPl, we may observe that only the expressions which lack a specification of gender do productively derive collective forms. These generalizations beg the question why.

The analysis argued for in this paper offers an obvious answer. Collective nouns in the present day SC are incompatible with the uniform atomicity implied by the presence of gender, i.e. by the masculine and feminine values of gender (see section 4.6 for additional evidence in favor of this view). This is perhaps the case because the collective suffixes in SC are not strong enough to impose the non-uniform atomicity onto the base, i.e. to neutralize the uniform atomicity specified by it (for a confirmation of this view, see section 4.6), and it is possible to think of a language in which due to strong endings no such constraints obtain. In any case, the empirical generalization itself supports the view of neuter gender as the absence of gender, amounting to the absence of uniformity of the atomic level.

4.4 'Neuter' agreement of masculine-feminine hybrids

Wechsler and Zlatić (2000) argue that the noun *braća* 'brothers.Coll' shows its relatedness with three sets of features: FSg (traditional morpho-syntactic specification, their concord features), MPl (features deriving from the semantics of the noun), and one surprising feature combination: NPl (their index features). Two of those, the concord and the index features, are argued to be specified on the noun. It is a mystery, however, why a semantically masculine, morpho-syntactically feminine noun should also have a neuter value for gender (hence Alsina and Arsenijević 2012a,b propose an analysis only in terms of FSg and MPl). Wechsler and Zlatić include this feature specification in order to account for the combination of plural agreement on the finite auxiliary or copula, and the ending *-a* on the participle or predicative adjective, respectively.

(35) Braća   su   spaval-a.
      brother.CollNomFSg   AuxPl   slept-NomFSg/NomNPl
      '(The) brothers slept / were sleeping.'

They follow a family of analyses of the facts above which take the plural form of the auxiliary to imply that the participle is plural as well (see Corbett 1983, 1991 for a discussion and an overview of previous analyses), and since among NomPl forms, only neuter has the ending *-a*, they conclude that the noun *braća* 'brother.Coll' involves the feature combination NPl, next to the other two combinations.

In the present analysis, an inverse perspective is taken: even the traditional NPl is not proper NPl, but actually Coll. Hence both the subject and the participle in (35) are collective, and as such they are also compatible with a plural auxiliary (recall the discussion in section 3.5). The question how come a morpho-syntactic feminine, semantic masculine is at the same time neuter is thus dispensed with: it is not neuter plural because neuter plural does not exist; it is collective. Note that as extensively discussed in (Alsina and Arsenijević 2012a,b), this removes the empirical need for a three-layered system of agreement of Wechsler and Zlatić (2000, 2003), making a two-layered system fully sufficient. This view is further supported by the fact that predicates in oblique cases agree with the noun *braća* either in a gender-syncretic Pl form or in a FSg form, which is compatible with the more general picture where the collective form only occurs in the nominative and accusative case.

(36) Braća   su   se   pokazala   solidarnim/solidarnom.
     brother.Coll   Aux.Pl Refl   showed.NPl/FSg   solidary.Pl/FSg
     '(The) brothers turned out to be solidary.'

4.5 Degradation with pronouns

Neuter gender in SC cannot be used in first or second person, even with the *us linguists* type of expressions, see (37a, b). As shown in (37c), these expressions improve to some extent if a generic, non-individuated interpretation is established (the inclusion of the speaker in the first person sentence in (37b) blocks a fully homogeneous interpretation).

(37) a. CHILD: *Čital-o   sam   knjigu
                   read-NomNSg   Aux1Sg   book.Acc
                  'I was reading a/the book'

     b. Mi   *(??spadal-a)   smo   radoznal-a.
         we   joker-NomNPl   are.1Pl   curious-NomNPl
         'We jokers are curious.'

     c. ?Sela,   vi   ste   me   uvek   lepo   dočekala
         villages.VocNPl   you   Aux2Pl me   always nicely welcomed.NomNPl
         'Hey villages, you always welcomed me in a nice way.'

Moreover, third person neuter plural pronoun cannot be used for direct reference to groups of animates of the type which is typically considered to not have a valued biological gender, such as human and other animals' offspring. Consider the following two situations. Situation 1: a group of offspring of an animal whose name we do not know are playing on the loan. Situation 2: a group of children are playing on the loan, yet they have not been introduced to the discourse, and the words *dete/deca* 'child/children' have not been used. Neither in situation 1 nor in situation 2 the sentence in (38) can be felicitously used (unless under a pragmatically marked and demanding accommodation of a discourse in which one of the two words is used).[8]

(38) #Ona   su   neumorna.
      they3NPl are   tireless.NomNPl
      'They are tireless.'

It significantly improves if the noun *deca* 'children', or any other neuter noun has previously been used to refer to the group or its members individually.

Both observations are explained by the absence of gender account of neuter and the collective analysis of the traditional NPl. Interlocutors are clearly individuated entities, and their inclusion in the referent makes the use of collective forms inadequate. This effect expectedly becomes weaker with homogeneous generic interpretations which abstract away from the inclusion of interlocutors.

The example in (38) implies further that the absence of gender is only possible as a lexical (under)specification, which then spreads by syntactic means via agreement. Neuter gender cannot be semantic, as animate referents are necessarily specified for gender, even if by default.

4.6 No plural for neuters derived from other genders

As already noted in section 3.3, a number of neuter nouns in SC, unified by phonological, morphological and semantic characteristics which lie beyond the scope of this paper, derive both *-a* collective forms filling in the structural case slots within the plural subdeclension and *-ad* collectives which leave the paradigm of the base. There is a group of neuter nouns which cannot derive the former, i.e. which completely lacks the traditional NPl forms. While in the literature different properties have been proposed as relevant (animacy, diminution, see Stevanović 1984), corpus

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[8] The personal pronoun is homophonous with the demonstrative, which is also slightly marked, but can be used, with the semantic effect of contrasting the group referred to with another from the same kind.

research indicates that these nouns are unified by the property of being derived from stems of other gender values, typically from masculines. They refer to plurality using the *-ad* collective forms, or in a pseudo-suppletive way, via secondary non-neuter diminutives (as they are mostly already diminutives) derived from them by the masculine diminutive suffix *-ić*. The second cycle of diminution is semantically vacuous (no recursive diminutive interpretation, i.e. not necessarily a small calf for *tel-ić-i* 'calf-DimNomMPl', but by default simply calves, and not a small small window for *prozor-č-ić-i* 'window-Dim-Dim-NomMPl', but simply small windows), and its purpose is to facilitate the plural by changing the gender of the noun.

(39)   a. (the base is lost)[9]   pil-e   *pil-(et-)a
                                            chicken-NomNSg   chicken-Ext-NomNPl
                                            'chicken' (Sg)

           pil-ad   pil-ić-i
           chicken-CollNomFSg   chicken-Dim-NomMPl
           'chicken' (Coll)   'chicken' (Pl)

        b. (the base is lost)   tel-e   *tel-(et-)a
                                            calf-NomNSg   calf-Ext-NomNPl
                                            'calf'

           tel-ad   tel-ić-i   %tel-c-i
           calf-CollNomFSg   calf-Dim-NomMPl   calf-UNIT-NomMPl
           'calves' (Coll)   'calves' (Pl)   'calves' (Pl)

        c. prozor-Ø   prozor-č-e   *prozor-č-(et-)a
             window-NomMSg   window-Dim-NomNSg   window-Dim-Ext-
             'window'   'little window'   NomNPl

           prozor-č-ad   prozor-č-ić-i
           window-Dim-CollNomFSg   window-Dim-Dim-NomMPl
           'little windows' (Coll)   'little windows' (Pl)

        d. ekser-Ø   ekser-č-e   *ekser-č-(et-)a
             nail-NomMSg   nail-Dim-NomNSg   nail -Dim-Ext-NomNPl
             'nail'   'little nail'

           ekser-č-ad   ekser-č-ić-i
           nail-Dim-CollNomFSg   nail-Dim-Dim-NomMPl
           'little nails' (Coll)   'little nails' (Pl)

Both inanimate and animate neuter nouns derived from neuters, including diminutives, have regular plural subdeclension, proving that the blocking of the plural inflection is not a general property of derived neuters, of animate neuters or of neuter diminutives.

(40)   a. ram-e   ram-en-c-e   ram-en-c-a
           shoulder-NomNSg   shoulder-Ext-Dim-NomNSg   shoulder-Ext-Dim-NomNPl
           'shoulder'   'little_shoulder'

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[9] All animate neuter nouns denoting offspring are derived from nouns of other gender values, some of which are no more in use, by the diminutive suffixes *-e* or *-če*. In most of the cases with the suffix *-e*, the derived noun is a singulative, i.e. it is derived from a collective form to refer to a unit forming the collective (hence non-uniform). While for reasons of space and methodological difficulties this issue is not further investigated in this paper, it also lends support to the proposed analysis of the neuter.

b. jaj-e   jaj-aš-c-e   jaj-aš-c-a
   egg-NomNSg   egg-Ext-Dim-NomNSg   egg-Ext-Dim-NomNPl

c. der-e   der-išt-e   der-išt-a
   kid-NomNSg   kid-Augm-NomNSg   kid-Augm-NomNPl

d. spada-l-o   spadal-o   spadal-a
   fall_off-Pcpl-NomNSg   joker-NomNSg   joker-NomNPl

Under the present analysis, the inability of neuter nouns derived from bases of other gender to take the plural declension stems from a clash between the gendered nature of the base and the absence of gender marked by the derivational ending. The specification of the base blocks the derivation of collective forms, and the neuter gender of the derived noun cannot support a (gendered) plural. The only way to refer to pluralities is to derive the –*ad* collective form which as argued in section 3.5 establishes an own paradigm, or to introduce an additional vacuous non-neuter (hence by default masculine) diminutive ending to be able to derive a proper plural based on uniform atomicity.

4.7 Traditional NPl bad with quantized pluralities from neuter nouns
As observed by Franks and Willer-Gold (2014), while a subject involving a conjunction of feminine singular nouns in SC allows for feminine or default (i.e. masculine) agreement on the verb (with a strong preference for the former), a conjunction of neuter nouns only allows for a masculine agreement.

(41) a. Knjiga   i   sveska   su   %stajali/stajale   pored   vaze.
        book.NomFSg   and   notebook.NomFSg   AuxPl   stood.NomMPl/FPl   by   vase
        'A/the book and a/the notebook were standing by the vase.'

    b. Selo   i   polje   su   ležali/*ležala   u   širokoj   dolini.
        village. NomNSg   and   field. NomNSg   auxPl   lay. NomMPl/NPl   in   broad   valley
        'A/the village and a/the field lay in a broad valley.'

The analysis in terms of a collective nature of the traditional NPl ending -a predicts this, as collective nouns have unbounded, homogeneous semantics, which is incompatible with quantized semantics. More technically, while the same, feminine, classifier component for the nouns in (41a) mediates their forming of a joint semi-lattice, the absence of a shared uniform atomic level between the neuter nouns in (41b) fails to enable the formation of the same type of joint semi-lattice.

The explanation in terms of quantization makes a further prediction. So-called 5-and-ups in SC are known to allow both the traditional NSg agreement on the participle or on the predicative adjective (coming from the absence of gender on the cardinal) and the agreement with the nominal expression selected by the cardinal, the latter most likely involving semantic agreement.

(42) Jedanaest   stolova   [je   isporučeno   /   su   isporučeni].
      11   table. I^{MIn}GenPl   is   delivered. NomNSg   are   delivered. I^{M}NomPl
      '(The) eleven tables have been delivered.'

The analysis proposed predicts that 5-and-ups with neuter nouns only license the traditional NSg pattern, while the plural pattern involving agreement with the noun must be out. This prediction comes from two sources: 1) numeral expressions are clearly quantized too, as they, just like the conjunction, refer to a bounded plurality with precisely individuated members, and 2) the agreement with the selected nominal expression looks like semantic agreement, and neuter has been shown in section 4.5 not to be able to emerge through semantic agreement. This prediction is born out, as shown in (43).

(43) Trinaest   pisama   [je   isporučeno   /   *su   isporučena].
      13   letter. I^{N}GenPl   is   delivered. NomNSg   are   delivered. I^{M}NomPl
      '(The) eleven letters have been delivered.'

5. Conslusion and theoretical implications

The paper has argued that gender and classifier systems are similar not only in being the base for a classification of nouns in the lexicon which feed the syntactic features relevant in agreement, but that gender also fulfils the role of classifiers in the grammatical expression of the restrictions over the units of counting in count nouns, in terms of the analysis proposed: in marking the uniformity of the atomic level in the denotation of the noun. Neuter gender in SC is analyzed, with Kramer (2009), a.o, as the absence of gender, and consequently as the marking of a non-uniform atomic level when the neuter noun is lexically specified as count. I have argued that in such circumstances, in SC, plural forms cannot be derived, and that the language resorts to the use of collective forms instead. These forms, traditionally analyzed as NPl, are only used in the structural case forms, while the oblique cases are anyway underspecified between the traditional masculine and neuter gender, i.e. between the uniform and non-uniform atomic level. I showed how this view of the neuter explains a range of otherwise rather surprising patterns of behavior exhibited by neuter nouns in SC.

The analysis proposed builds on the view from Arsenijević (2007) that collectives share with plurals the properties of reference of cumulativity and atomicity, the difference being that plurals involve uniform atomicity, while collectives do not. Lack of uniform atomicity gives the collectives their incompatibility with quantized interpretations, resulting in a similarity with mass nouns. An overview of three types of collective nouns in SC is given, showing that the pattern of behavior of the traditional NPl fully fits one of these patterns along the dimensions of phonology, morphology, syntax and semantics. Under the analysis of neuter singular nouns as non-uniformly atomic, and hence minimally different from collective nouns in having quantized rather than cumulative denotations, it is exactly expected that in the cumulative use, i.e. in reference to pluralities, the blocking on the derivation of plurals will be made up for by the derivation of collective forms.

This view, and the relation it establishes between grammatical number and gender has broad consequences for the theory of grammar, in particular to theoretical issues such as the question of the bundling of the number and gender features, or the issues of joint vs. separate agreement of the two features (see Fuchs et al. 2015 and the references therein).

This view of number also allows to account for (part of) the spectrum of agreement behavior captured descriptively by the agreement hierarchy (Corbett 1979) without resorting to multiple sets of lexically specified gender and number features (e.g. as in Wechsler and Zlatić's 2000, 2003 concord and index features, in addition to semantic agreement), but rather in terms of the sensitivity of different constituents to different subsets of the features involved. I argued that in SC, the availability of plural agreement on the finite verb depends on two factors: whether the controller establishes cumulative atomic reference (irrespective of uniformity), and if this condition is satisfied, on whether the head of the controller establishes a grammatical number opposition with a singular base from which it is derived. Other constituents, which are not discussed in the paper, are sensitive to different sets of features and morphological and semantic properties.

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