

On the Syntax of Quantity Expressions in Bosnian ¹

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In this paper, we will distinguish three types of quantity expressions in Bosnian:² (i) quantity nouns such as *većina*, 'majority' and *količina* 'quantity' in (1), (ii) quantifiers proper, such as *nekoliko* 'some' in (2), and quantity adjectives such as *mnogi*, *mnoge*, *mnoga* 'manyM/F/N' in (3):

- (1) a. *većina* *mojih* *prijatelja*
majority-NOM my-GEN friends-GEN PL
b. *Vidio sam većinu* *mojih* *prijatelja*.
(I) saw majority-ACC my-GEN friends-GEN PL
c. *Potrošili smo veliku* *količinu* *brašna*.
(we) used big-ACC quantity-ACC flour-GEN SG
- (2) a. *nekoliko* *mojih* *prijatelja*
several my-GEN friends-GEN PL
b. *Vidio sam nekoliko* *mojih* *prijatelja*.
(I) saw several my-GEN friends-GEN PL
c. *Potrošili smo mnogo* *brašna*.
(we) used much flour-GEN SG
- (3) a. *mnogi* *hrabri* *dječaci*
many-NOM MASC brave boys-NOM MASC

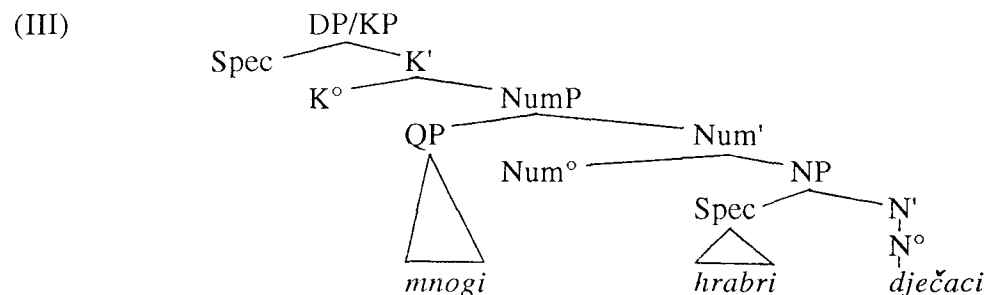
1. A reduced version of this paper was presented at the V Workshop on Slavic Morphosyntax in Florence November, 26-28, 1995 and will appear in the proceedings. We thank the audience for helpful comments. We also thank Guglielmo Cinque for discussion and support.

2. For the sake of brevity we will call Bosnian the Slavic language spoken in Sarajevo, which should actually be called Bosnian/Serbian/Croatian and which is referred to in previous linguistic literature as Serbo-Croatian.

projection in languages with articles (supposed to be in D) with languages that do not have articles but have case, like Bosnian and most Slavic languages. We assume, following Giusti (1992), that at an abstract level of representation, articles and case morphology on the noun are one and the same category.

In Bosnian, case morphology is generated directly on the noun and is later checked in D/K at LF. All modifiers are prenominal and agree with the head noun by means of their being in Spec-Head-Agreement configuration with a functional head of the extended nominal projection. We also assume that each adjective has its own functional projection where case morphology is checked. The Spec-Head-Agreement configuration that takes care for case agreement between the noun and its modifiers is therefore checked in functional heads.³ Notice that these assumptions are needed at this point only to provide a framework for the discussion on the syntax of quantity expressions. They will not be motivated in this paper because the analysis of quantity expressions we are going to propose is largely independent from them.

In section 2, we will present the properties of quantity adjectives and justify the different categorization with respect to quantifiers. The structural position of quantity adjectives is given in Roman (III):



We will see that quantity adjectives always agree in gender, number and Case with the head noun and in that respect behave like all other adjectives.

In section 3, finally, we will show that the complex syntax of numerals can be straightforwardly analysed by classifying numerals into the three different classes singled out in the course of the paper.

This classification will prove not to be language specific but, in fact, universal. Bosnian will ultimately provide evidence for a theory of quantity expressions that was put forth for Romance and Germanic in Giusti (1991) and following work on totally independent grounds.

3. This was independently proposed in Leko (1995) for Bosnian and Giusti (1992) for Romance and Germanic. We refer to these papers for a justification of this hypothesis.

genitive plural.

It is also a property of regular nouns that they do not agree with their complements:

- (7) a. *l'autore di questi libri*
 b. *pisac* *ovih* *knjiga*
 writer-NOM SG MASC these-GEN PL book-GEN PL FEM

ii) Quantity nouns, quantifiers, and regular nouns are case-assigners in Bosnian. But quantity nouns and quantifiers assign exclusively genitive to their complements (8a-b), whereas regular nouns in addition to genitive (the default case) may assign other inherent cases (8c), cf. Leko (1990, 1991):

- (8) a. *većina* *mojih* *prijatelja*
 majority my-GEN friends-GEN
 b. *nekoliko* *mojih* *prijatelja*
 several my-GEN friends-GEN
 c. (i) *dijete* *mojih* *prijatelja*
 child my-GEN friends-GEN
 (ii) *spomenik* *miru*
 monument peace-DAT

iii) Quantity nouns and quantifiers are mutually exclusive (9)-(10), in contrast to regular nouns which co-occur with either quantity nouns or quantifiers (11).

- (9) a. **broj mnogo prijatelja*
 *a number of many friends
 b. **količina nešto brašna*
 *the quantity of some flour
 c. **većina stotinu delegata*
 *the majority of a hundred delegates

- (10) a. **dva broj prijatelja*
 *two numbers of friends
 b. **mnogo količina brašna*
 *much quantity of flour
 c. **svi većina delegata*
 *all the majority of the delegates

- (11) a. *dvije grupe prijatelja*
two groups of friends
b. *nekoliko grupa studenata*
several groups of students
c. *Većina grupa je otišla.*
Majority of groups left.

iv) Like common nouns, quantity nouns trigger agreement with the predicate: *većina* ("majority"), *količina* ("quantity"), etc. trigger feminine agreement (12a), *broj* ("number"), *dio* ("part"), etc. trigger masculine agreement (12b), quantifiers trigger neuter agreement (12c)

- (12) a. *Većina* *mojih prijatelja* *je* *pjevala.*
majority my-GEN friends-GEN AUX-3 SG sang-FEM SG
b. *Jedan broj* *mojih prijatelja* *je* *pjevao.*
a number my-GEN friends-GEN AUX-3 SG sang-MASC SG
c. *Nekoliko* *mojih prijatelja* *je* *pjevalo.*
several my-GEN friends-GEN AUX-3 SG sang-NEUT SG

Differently from common nouns, if two feminine quantity nouns are conjoined, they cannot trigger feminine plural agreement of the predicate. What we find instead is "semantic" agreement with the complement nouns (13a). However, if the gender of the quantity nouns conjoined is either MASC + MASC (13b) or MASC + FEM / FEM + MASC (13c), masculine agreement on the predicate is possible along with semantic agreement:

- (13) a. *Velika većina mojih prijatelja i mala grupa tvojih prijatelja su pjevali/*pjevale.*
great majority-F of my friends and small group-F of your friends-M sang-M PL
b. *Veliki broj žena i mali dio djevojaka su pjevali/ pjevale.*
great number-M of women-F and small part-M of girls-F sang-M PL/ F PL
c. *Veliki broj žena i mala grupa djevojaka su pjevali/pjevale.*
great number-M of women-F and small group-F of girls-F sang-M PL/ F PL

Conjoined quantifiers on the other hand do not trigger plural features on the predicate. Instead, the predicate has neuter singular form: ⁵

5. For a more detailed discussion on factors determining type of agreement in Bosnian cf. Leko (1986), Franks (1994).

- (14) *Mnogo mojih prijatelja i nekoliko tvojih susjeda*
 many my friends-M PL and several your neighbours-M PL
*je pjevalo/*su pjevali.*
 sang-N SG/ M PL

Quantity nouns, therefore, behave differently from common nouns and from quantifiers.

There are other reasons to believe that quantity nouns and quantifiers proper are two distinct categories and that neither of them can be unified with common nouns:

i) Quantifiers allow raising of (part of) their complement to SpecQP. This is impossible with quantity nouns, as well as with regular nouns:

- (15) a. *mnogo vas,* a'. *mnogo ovih studenata*
 many you-GEN many these-GEN students-GEN
 b. *?vas mnogo,* b'. *?ovih mnogo studenata*
- (16) a. *većina vas,* a'. *većina ovih studenata*
 majority you-GEN majority these-GEN students-GEN
 b. **vas većina,* b'. **ovih većina studenata*

ii) Quantity nouns can be modified by adjectives as in (17), quantifiers are modified by adverbs as in (18):

- (17) a. *velika većina mojih prijatelja*
 the great majority of my friends
 b. *mala količina brašna*
 a small quantity of flour
 c. *Parni broj stolica je potreban.*
 An even number of chairs is needed

- (18) *vrlo mnogo/ malo prijatelja*
 very many/ few friends

iii) Quantity nouns must be preceded by a determiner in Romance and Germanic and can be preceded by a demonstrative in Bosnian. In both cases the determiner agrees with the quantity noun. On the other hand in Bosnian, when the quantifier is preceded by a demonstrative, the demonstrative agrees with the following noun, not with the quantifier, showing that we are dealing with a derived structure. Therefore, (15a) is a base-generated structure, as well as (19), while (15b) a derived one, as well as (20):

- (19) a. *Ova* *količina* *brašna*
 this-FEM SG quantity-FEM SG [of] flour-NEUT SG
 b. *Onaj* *broj* *stolica*
 that-MASC SG number-MASC SG [of] chairs-FEM PL
- (20) a. *Ovih* *mnogo* *stolica*
 these-GEN PL many chairs-GEN PL
 b. *Onog* *malo* *brašna*
 that-GEN SG little flour-GEN SG

The structure of (19a) is given in (21a), and the structure of (20a) is given in (21b):

- (21) a. [_{FP1} *ova* [_{NP1} *količina* [_{FP2} *brašna*]]] ...
 b. [_{FP1} *ovih*_i [_{QP1} *mnogo* [_{FP2} *t*₁ [_{NP2} *stolica*]]]] ...

iv) Quantity nouns may appear in oblique cases having full nominal declension like all regular nouns, whereas quantifiers lack full declension and may appear in oblique case positions only if preceded by a preposition.

- (22) a. (i) *Bojao se* *većine* *djevojaka*
 (he) feared majority-GEN S girls-GEN PL
 (ii) *Pisao je* *većini* *djevojaka.*
 (he) wrote majority-DAT girls-GEN PL
 (iii) *Pokazao je prema* *većini* *djevojaka.*
 (he) showed towards majority-DAT girls-GEN PL
 b. (i) *Bojao se* *nekoliko* *djevojaka.*
 (he) feared several girls-GEN PL
 (ii) **Pisao je* *nekoliko* *djevojaka.*
 (he) wrote several girls-GEN PL
 (iii) *Pokazao je prema* *nekoliko* *djevojaka.*
 (he) showed towards several girls-GEN PL

We do not know the deep reason for this asymmetry between oblique cases (assigned by Vs vs. Ps). We follow Leko (1995) who proposes that the nominal projection needs an explicit case morpheme which is present in the NOM/ACC form on the Q or in the GEN form of the noun. Other Cases must be signalled by the presence of a P.

In this section we have tried to show that there are interesting similarities between regular nouns, quantity nouns and quantifiers. However, these categories cannot be unified under the same lexical class. What they have in common is the fact that they all are lexical heads, taking a full extended nominal projection as their complement, assigning it case, and imposing other selectional features on their complement according to their semantic properties. They, however, differ in morpho-syntactic (inflectional) properties. They are

therefore taken to project different functional heads. Furthermore, quantity nouns are of category N while quantifiers are of category Q.

They also differ in the possibility of raising their complement or part of it into their Spec. In order to account for this difference we must shortly discuss the properties of SpecQP and SpecDP.

1.1. *The properties of SpecDP*

In Giusti (1992, 1994) it is argued that demonstratives, differently from articles, are not functional heads. They cannot be in D°. They are, on the contrary, modifiers of the head noun generated in adjectival position and further moved to SpecDP. This movement is triggered by the necessity at LF for the whole DP to be interpreted as referential, on the assumption that referential features are checked in SpecDP at LF. This property of SpecDP parallels the property of SpecCP to check the wh-features in the clause.

This proposal can account for the word order variation that arise in noun phrases when a demonstrative is present in several related and unrelated languages such as Rumanian (23), Spanish (24), and Modern Greek (25) among others:

- (23) Rum.: a. *acest frumos băiat de la București*
this nice boy of from Bucarest
b. *băiatul acesta frumos de la București*
boy-the this+A nice of from Bucarest
c. *frumosul (*acesta) băiat de la București*
d. *băiatul frumos (*acesta) de la București*
- (24) Span.: a. *este/ese chico antipático*
this/that boy disagreeable
b. *el chico antipático este/ese*
c. **el chico este/ese antipático*
d. *el hermano este/ese de Juan* 'the brother this/that of Juan'
e. **el hermano de Juan este/ese*⁶
- (25) M. Gr.: a. *afto to kalo to vivlvio to oreo*
this the nice the book the good
b. *to kalo afto to vivlio to oreo*
c. *to kalo to vivlio afto to oreo*
d. *to kalo to vivlio to oreo afto*⁷

6. These data are taken from Brugè (1994).

7. These data are due to Melita Stavrou (p.c.).

In these three languages the demonstrative can appear either as the first element in the noun phrase or in a different position. Variation is found whether it can be followed by an article when it is in first nominal position. This can be accounted for by assuming that the demonstrative is in SpecDP in all cases and that languages vary with respect to whether D° must or cannot be lexically realized when its Spec is filled. Rumanian and Spanish cannot realize D° when SpecDP is filled while Modern Greek must. Notice that the presence of the article is never optional, showing that, at least in this construction, it does not have semantic relevance, but its occurrence is governed by syntactic principles.

The impossibility of the article in Rumanian (23a) and in Spanish (24a) cannot be accounted for by just assuming that demonstratives and articles are of one and the same category (so-called determiners), as often assumed without discussion for other well-studied languages such as English and French. This assumption, in fact, would be immediately disproved by the cooccurrence of demonstrative and article in (23b) and (24c,d).

Spanish (24c,d) show that the demonstrative starts in a very low Spec, which looks postnominal after N movement à la Cinque (1994). Rumanian shows that it can land in an intermediate Spec immediately lower than D. Comparison with Modern Greek (25) shows that the demonstrative can actually appear in either of these positions in the same language.

A derivative analysis of all positions of the demonstrative in each separate language is forced to take this element as a maximal projection that can cross X°-positions (N° in Agr°, and D°). Once the Specifier status of the demonstrative is independently needed, a unified analysis of the cross-linguistic data in (23)-(25) can be entertained. The structure obtained is sketched in (26):

(26) $[_{DP} \text{dem}_i [_D [_{AgrP} t'_i [_{Agr^\circ} N_j [_{AgrP} t_i [_{Agr^\circ} t'_j] [_{NP} t_j]]]]]]]$

Demonstratives are not the only elements that can appear in SpecDP. A similar phenomenology appears in connection with pronouns. Pronouns cooccur with articles in some languages among which French (27a), Spanish (27b), Rumanian (27c). Of course, such data can be taken to be instances of adpositions. However, at the present state of the theory, it is not clear what an adposition actually is. For example Kayne (1993) has seriously questioned the possibility of right adjunction in UG. An alternative analysis that does not need make recourse to right adjunction to predict that in some languages pronouns can co-occur with articles, is one that takes pronouns to have the same distribution as the demonstrative in (27).

- (27) a. *vous les enfants*
 b. *vosotros los chicos*
 c. *voi băieți-i*
 you [the] boys

A direct piece of evidence in favour of this proposal is the actual impossibility of the co-occurrence of pronouns and demonstratives which would be predicted both by an analysis that takes the sequence "pronoun + Art + N" in (27) as an adposition, and by an analysis that takes demonstratives and articles to belong to the same class of elements and to occur in the same structural position:

- (28) a. **vous ces enfants*
 b. **vosotros estos chicos*
 c. **voi băieți-i aceștia*

SpecDP is the highest position in the extended nominal projection in the sense of Grimshaw (1991). However, it can be preceded by a certain number of quantifiers. This is one of the reasons why Q is taken in Giusti (1991) to be external to the DP and having a DP as its complement.

As a matter of fact, the quantifiers that appear to precede lexical articles in well-known languages are the few that select a definite DP like *all* in (29):

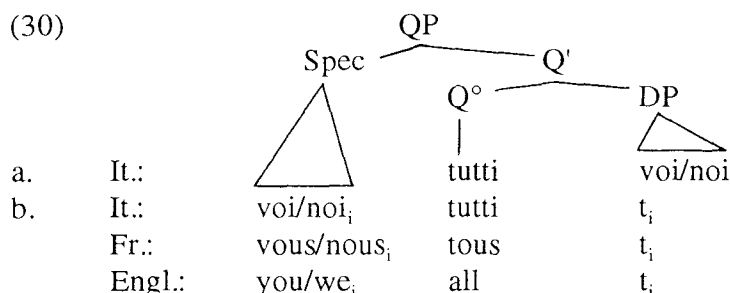
- (29) a. Fr.: *tous les enfants*
 b. Sp.: *todos los chicos*
 c. Rum.: *toți băieți-i*
 'all the boys'

Notice that in these languages the presence of the article (or of a demonstrative) is obligatory in (29).

On the other hand, quantitative adjectives appear at the right side of an article or a demonstrative as in *the many boys*. Their position is therefore inside the extended nominal projection, as depicted in (III), and as will be argued for in 2. below.

1.2. *The properties of SpecQP*

One piece of evidence to distinguish quantifiers from quantitative adjectives, as discussed in Giusti (1994, 1995), is the possibility for the complement of the quantifier to raise to SpecQP. In (30) roughly corresponding to (II) above, the complement DP of the quantifier can raise in Italian and must raise in French and English if it is a pronoun:



In all these three languages, movement of a non-pronominal DP is disallowed. It is not clear at the moment what determines this pronoun vs. full DP asymmetry. For a quantitative adjective this possibility is ruled out on general principles, since it is inserted in a configuration where there is no proper object of movement that excludes the quantifier and includes the string that follows it and there is no proper position that such movement could target.

Let us go back to Bosnian now. It is expected that the demonstrative preceding a quantity noun agrees with the noun in that it is part of its extended projection. It is also not surprising that quantifiers cannot be modified by a demonstrative, considered that quantifiers can be modified only by adverbs. On the other hand, SpecQP is available for the movement either of a pronoun, as in (15) above, or of a demonstrative that has previously landed in the SpecDP of its complement noun phrase in (21). Movement of a demonstrative from the embedded SpecDP to the SpecDP of a quantity noun is possibly ruled out by the mismatch in features that would arise. The demonstrative would have to agree with the embedded noun in its basic position and with the quantity noun in the landing site.

What is to be explained is the absence of such movement in other languages such as French, Italian, Rumanian. Once again, it appears to be reasonable to reduce this property of Bosnian to its rich case morphology. In French, Italian, Rumanian, the quantifier assigns abstract partitive case. The demonstrative, therefore, needs to remain inside the DP where such case is assigned. In Bosnian, on the other hand, the quantifier assigns morphological genitive to its complement. The demonstrative can therefore escape the DP, given that its case is fully recoverable. Notice that it can escape the DP even if QP is not present, and that it can move out of the QP as well:

- (32)
- | | | | |
|----|-------------------------|---------------|-------------------------------|
| a. | <i>ovu knjigu</i> | <i>čitam</i> | |
| | this book | read-1PS SING | |
| | 'I read this book.' | | |
| b. | <i>čitam ovu knjigu</i> | | |
| c. | <i>OVU</i> | <i>čitam</i> | <i>knjigu (ne onu)</i> |
| | this | read-1PS SING | book not that |
| d. | <i>OVIH</i> | <i>čitam</i> | <i>mnogo knjiga (ne onih)</i> |
| | these GEN | read-1PS SING | many books GEN (not those) |

2. *Quantifiers vs. quantity adjectives*

In Giusti (1991) it is argued that a lexical entry such as *many* in English or *molti* in Italian has ambiguous status between two different categories and, consequently, can appear in two different structural positions: in (33a) it is a quantifier, it selects the following noun and assigns it (abstract) partitive case; in (33b) it is a modifier of the noun and, as such, cannot impose selectional restrictions on it. This proposal is supported, among other facts, by the contrast that arises with *ne*-cliticization in Italian, which is possible in the presence of a quantifier such as *molti* as in (34a) but not in the presence of an adjectival quantifier such as *molti* in (34b):

- (33) a. *sono arrivati molti ragazzi*
 are arrived many boys
 "many boys have arrived"
- b. *sono arrivati i molti ragazzi che conosco*
 are arrived the many boy I know
 "the many boys I know have arrived"
- (34) a. *ne sono arrivati molti*
 CL-GEN are arrived many
 "many (of them) arrived"
- b. **ne sono arrivati i molti*
 CL-GEN are arrived the many

In (34a) *ne* binds a full DP position in the complement of *molti*. In (34b) no such position exists, given that *molti* is an adjective inside the DP projection.

2.1. *Bosnian evidence*

Bosnian gives us stronger evidence in favour of this hypothesis.

i) Bosnian has two different lexical items having the same root *mnog-* and expressing the meaning 'many': a real quantifier *mnogo* (uninflected) and an adjectival quantifier *mnogi* (fully inflected for gender, number and case):

- (35) a. *Mnogo studenata/ studentica/ goveda je došlo.*
 many students-M/ students-F/ cattle-N GEN AUX-3 SG came-N SG
- b. *Vidio sam mnogo studenata/studentica/goveda.*
 (I) saw AUX 1SG many students GEN PL M/ F/cattle GEN PL N
- c. (i) *Mnogi studenti su došli.*
 many NOM PL MASC students NOM PL MASC AUX 3PL came PL MASC

- (ii) *Mnoge studentice su došle.*
 many-NOM PL FEM students-NOM PL F AUX-3 PL came-PL F
- (iii) *Mnoga goveda su došla.*
 many-NOM PL NEUT cattle-NOM PL NEUT AUX-3 PL came-PL NEUT
- d. *Vidio sam mnoge studente.*
 (I) saw AUX-1 SG many-ACC PL students-ACC PL

From these examples it is obvious that *mnogo* behaves as a head assigning genitive to its complement in (35a,b), whereas *mnogi*, *mnoge mnoga* in (35c,d) is an adjective which agrees in number, gender and case with the head noun. This conclusion is supported by the form we find in the predicate. In (35c(i)) it is masculine plural in agreement with the head of the subject phrase *studenti*. In (35c(ii)) it is feminine plural in agreement with the head of the subject phrase *studentice*. In (35c(iii)) it is neuter plural in agreement with the head of the subject phrase *goveda*. On the other hand, in (35a,b) we find the default agreement form neuter singular (*je došlo*). It may be treated either as a default agreement form or as an agreement form with the head of the subject phrase *mnogo*. From this we conclude that *mnogo* creates opacity for agreement with its complement noun. (35d), finally, shows that *mnogi* also inflects for case.

In contrast to *mnogo*, which has the adjectival counterpart *mnogi*, the majority of other quantifying expressions belong to only one category: *malo*, *nešto*, *dovoljno*, *dosta* are only quantifiers and have no adjectival counterpart; *neki*, *brojni*, *svaki* are only adjectives and have no quantifier counterpart:

- (36) a. *Malo/ nešto/ dovoljno/ dosta hrane*
 little some enough enough food-GEN FEM
je ostalo.
 AUX-3 SG left-NEUT SG
- b. *Hrana je ostala.*
 food-FEM SG AUX-3 SG left-FEM SG
- c. **Mala/ nešto/ dovoljna/ dosta hrana je ostala*
- (37) a. *Neka/svaka hrana je ostala.*
 some /each food AUX-3 SG left-FEM SG
- b. **Neko/ svako hrane je ostalo.*
 some /each food-GEN AUX-3 SG left-NEUT SG
- (38) a. *Brojni studenti su došli.*
 numerous-MASC students-MASC AUX-3 PL came-MASC PL
- b. **Brojno studenata je došlo.*
 numerous-NEUT students-GEN AUX-3 SG came-NEUT SG

The ungrammaticality of (36c), (37b) and (38b) is not due to a defective declension of these quantifiers, since the feminine forms of *malo*, *dovoljno*, *brojni* exist as descriptive adjectives that mean 'small', 'sufficient' and

'numerical', cf. (39):

- (39) a. (i) mali čovjek
 little-MASC man
 (ii) *mala* žena
 little-FEM woman
 (iii) *malo* dijete
 little-NEUT child
- b. (i) *On je dovoljan* učenik.
 He is sufficient-MASC pupil-MASC
 (ii) *Ona je dovoljna* učenica.
 she is sufficient-FEM pupil-FEM
 (iii) *On je napredovao od dovoljnog do odličnog učenika.*
 he progressed from sufficient-GEN M to excellent-GEN M pupil-GEN M
- c. *brojno stanje neprijateljskih vojnika*
 numerical state enemy-GEN(Adj) soldiers-GEN PL

ii) Another contrast that we find in connection with these two different classes of quantity expressions is the possibility of pronominalization of the complement noun:

- (40) a. *Vidio sam mnogo studenata/njih.*
 (I) saw AUX-1 SG many students-GEN PL/them-GEN PL
- b. *Vidio sam ih mnogo.*
 (I) saw AUX-1 SG them-GEN PL Cl many
- c. *Vidio ih je mnogo.*
 (he) saw them-GEN PL Cl AUX-3 SG many
- (41) a. *Vidio sam mnoge/ neke studente/*njih.*
 (I) saw AUX-1 SG many/some-ACC students-ACC PL/them-ACC PL
- b. *Vidio sam (*ih) mnoge/ neke.*
 (I) saw AUX-1 SG them-GEN PL Cl many some

The impossibility to pronominalize the complement of *mnoge/neke* is explained by the hypothesis that *mnoge* is an adjective, parallel to *dobre* 'good' in (42). Adjectives cannot be left in place by movement of the noun phrase since they are part of the projection moved. On the other hand, *mnogo* allows its complement to move out of the quantifier phrase.

- (42) a. *Vidio sam dobre studente/ *njih.*
 (I) saw AUX-1 SG good-ACC PL MASC students-ACC PL MASC/them
- b. **Vidio sam studente dobre/ ih dobre.*

Svi ('all') has an ambiguous behaviour: It behaves like an adjective in that it agrees with the noun and does not allow a pronoun in the basic position of its complement, as shown in (43a). However, it behaves like a quantifier in that it can modify a weak pronoun preceding

- (44) a. *Svi/ mnogi/ neki studenti su* *stigli.*
 all many some students AUX-3 PL arrived-PL MASC
 b. *Studenti su svi/ mnogi/ neki stigli.*
- (45) a. *Mnogo studenata je* *stiglo.*
 many students-GEN PL AUX-3 SG arrived-NEUT SG
 b. *Studenata je mnogo stiglo.*

(44) is not a serious counterexample to our proposal, since also descriptive adjectives can appear floated in the same construction:

- (46) a. *Dobri studenti su stigli.*
 good students AUX-3 PL arrived-PL MASC
 b. *?Studenti su dobri stigli.*

ii) Another and more serious problem is the possibility of the genitive complement introduced by a preposition with indefinite adjectival quantifiers:

- (47) a. *Neki od studenata su spavali.*
 some of students-GEN PL AUX-3 PL slept-PL MASC
 b. *Vidio sam neke od studenata.*
 (I) saw AUX-1 SG some of students-GEN PL

The presence/absence of a prepositional partitive complement in Italian can be used to test the head status of a quantifier.

- (48) a. *Conosco molti degli amici di Maria.*
 [I] know many of the friends of Mary
 b. **Conosco i molti degli amici di Maria.*
 [I] know the many of the friends of Mary

The presence of such a prepositional phrase appears to be dependent on the indefinite status of the quantifier both in Italian and in Bosnian and contrary to English:

- (49) a. **Conosco tutti degli amici di Maria.*
 [I] know all of the friends of Mary
 b. **Vidio sam sve od Marijinih prijatelja.*
 (I) saw AUX-1 SG all of Mary's friends
 c. *I know all of Mary's friends*

The complement of the quantifier *molti/many* in (i)-(ii) cannot move to the subject position where nominative is assigned because it already has (abstract) partitive case (which in Italian surfaces as *ne* when it is pronominal, cf. (34a)).

This problem can be solved along the following lines. There is an important difference between Bosnian and Italian adjectival quantifiers: in Italian they can only appear in definite noun phrases, losing their indefinite/partitive meaning, in Bosnian this is not the case. There is no interpretive difference between *mnogo studenata* and *mnogi studenti*. Let us assume that the partitive prepositional phrase introduced by *od/ di* 'of' can only appear with an indefinite noun phrase. This explains the impossibility of (49b) and the possibility of (48a). (49c) shows that in English a partitive PP introduced by *of* is possible even with definite DPs.

iii) The fact that adjectival quantifiers in Italian only appear in definite noun phrases while in Bosnian can also appear in indefinite noun phrases, also explains the incompatibility of a demonstrative with *neki* 'some' which was classified as an adjectival quantifier:

- (50) a. **neki oni studenti*
 some those students
 b. **oni neki studenti*

(50) contrasts sharply with Italian (51a) and patterns with (51b):

- (51) a. *questi molti studenti*
 these many students
 b. **questi alcuni studenti*
 these some students

In Giusti (1991) the impossibility of *alcuni* in adjectival position was related to an idiosyncratic property of the Italian lexicon that was taken to have *alcuni* listed only under the class of quantifiers. Bosnian shows us that the semantics of 'some' is intrinsically incompatible with a referential expression (the demonstrative).

3. Numerals

3.1. Numerals that behave like quantity nouns

(i) *Desetina* 'ten', *stotina* 'hundred', *hiljada* 'thousand', *milion* 'million', *milijarda* 'billion' have full declension as feminine nouns, except *milion* that declines as a masculine noun. They agree for gender with a predicate in the singular. They also have selectional requirements on the noun that follows which must be genitive plural.

- (52) a. *Stotina* *muškaraca* *je* *stigla.*
 hundred-NOM men-GEN PL AUX-3 SG arrived-FEM SG
 b. *Vidio je* *stotinu* *muškaraca.*
 (he) saw hundred-ACC men-GEN PL
 c. *Bojao se* *stotine* *muškaraca.*
 (he) was afraid hundred-GEN men-GEN PL

- d. *Pisao je stotini muškaraca.*
 (he) wrote hundred-DAT men-GEN PL

These numerals can be modified by a demonstrative or by an adjective that agrees with the numeral for ϕ -features:

- (53) a. *Ona stotina muškaraca je stigla.*
 that hundred men-GEN PL AUX-3 SG arrived-FEM SG
 b. *Vidio je onu stotinu muškaraca.*
 (he) saw AUX-3 SG that-ACC hundred-ACC men-GEN PL
- (54) a. *Imali smo jednu stotinu nenaoružanih muškaraca.*
 (we) had AUX-1 PL miserable-ACC hundred-ACC unarmed men GEN PL
 "we hardly had a hundred unarmed man"
 b. *Imali smo stotinu jadnih nenaoružanih muškaraca.*
 (we) had hundred-ACC miserable-GEN unarmed-GEN men-GEN PL

Notice the different meaning of *jadnu*: in (54a) where it modifies the numeral it means "scarce", in (54b) where it modifies the noun it means "miserable".

They do not allow for movement of the demonstrative or the pronoun out of their complement:

- (55) a. *Stotina ovih muškaraca je stigla.*
 hundred this-GEN men-GEN AUX-3 SG arrived-FEM SG
 b. **Ovih stotina muškaraca je stigla.*

(ii) There is a group of numerals ending in *-ica* that also have full nominal feminine declension, like certain neuter plural nouns. These optionally trigger agreement for these features with the predicate (but "semantic agreement" is allowed), and select exclusively a human masculine plural noun as their complement to which they assign genitive:

- (56) a. *Dvojica/ trojica/ četvorica/ petorica/... muškaraca su stigla.*
 two three four five men-GEN PL arrived-NEUT PL
 b. *Ova dvojica muškaraca su stigla.*
 this-NEUT PL two men-GEN PL arrived-NEUT PL

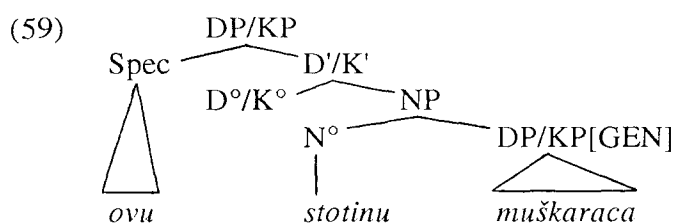
The complement of both kinds of numeral nouns can be a pronoun. It can only follow (57) and never precede (58) the numeral noun:

- (57) a. *Stotina vas je stigla.*
 hundred you-GEN AUX-3 SG arrived-FEM SG
 b. *Dvojica vas su stigla.*
 two you-GEN AUX-3 PL arrived-NEUT PL

- (58) a. **Vas stotina je stigla.*
 b. **Vas dvojica su stigla.*

We propose that the structural position of these numerals is that of a quantity noun. They have, in fact, their own functional projection where gender and case are realized. The demonstrative that precedes them agrees with them, it is therefore in SpecDP, in our framework. Furthermore, they do not allow movement of their complement to a high Spec, parallel to quantity nouns and differently from real quantifiers.

The structure is given in (59):



3.2. Numeral Quantifiers

(i) Numerals from 'five' onwards, excluding compounds with 'one', 'two', 'three', 'four' behave like quantifiers in that they are indeclinable (60), they cannot be modified by an agreeing adjective (61), they allow a part of the complement noun phrase to move to their specifier (62):

- (60) *Pet/sto muškaraca/ žena/ goveda je stiglo.*
 five/hundred men/women/cattle-GEN PL AUX-3 SG arrived-N SG

- (61) a. **ovo pet/ sto muškaraca*
 b. **jadno pet/ sto muškaraca*

- (62) a. *Ovih/ jadnih sto muškaraca je stiglo.*
 these/miserable-GEN hundred men-GEN AUX-3 SG arrived-NEUT SG
 b. *Sto ovih/ jadnih muškaraca je stiglo.*

Notice that in (62a,b) we do not have the same contrast in the different meaning of *jadnih* 'miserable' (GEN PL) that we find in (54). There, in (54a) *jadnu* modified the numeral noun, while in (54b) it modified the complement of the numeral. In (62), on the other hand, it always modifies the complement of the numeral. The structure in (62a) derives from (62b) by movement of *ovih/ jadnih* to the Spec of QP. For this reason, the interpretation of the two examples is basically the same.

If a pronoun appears as a complement of these numerals, it can move to SpecQP, even though marginally:

- (63) a. *Pet vas je stiglo.*
 five you-GEN AUX-3 SG arrived-NEUT SG
 b. *?Vas pet je stiglo.*

These numerals can appear in nominative, accusative and genitive contexts but not in other oblique cases, parallel to what we have noticed for real quantifiers:

- (64) a. *Pet muškaraca je stiglo.*
 five men-GEN PL AUX-3 SG arrived-NEUT SG
 b. *Vidio je pet muškaraca.*
 (he) saw AUX-3 SG five men-GEN PL
 c. *Bojao se pet muškaraca.*
 (he) feared five men-GEN PL
 d. **Pisao je pet muškaraca.*
 (he) wrote (to) five men-GEN PL

(ii) The collective numerals *dvoje*, *troje*, *četvoro*, *petoro*, etc. also belong to this class. These numerals require so-called collective nouns such as *djeca* 'children', *pilad* 'chicken' *telad* 'calves', *dugmad* 'buttons', etc. as their complement.

The examples in (65) show that these numerals assign genitive to their complement and trigger neuter singular agreement with the predicate. These elements too can appear only in nominative (65a), accusative (66a) and genitive (66b) and in the complement of prepositions (66c), not in dative (66d) or other inherent cases:

- (65) a. *Dvoje djece je stiglo.*
 two children-GEN AUX-3 SG arrived-NEUT SG
 b. *Djeca su stigla.*
 children-NOM N PL AUX-3 PL arrived-NEUT PL
- (66) a. *Vidio sam dvoje djece.*
 (I) saw two children-GEN
 b. *Bojao se dvoje djece.*
 (he)feared two children-GEN
 c. *Pokazao je prema dvoje djece.*
 (he) pointed towards two children-GEN
 d. **Pisao je dvoje djece.*
 (he) wrote (to) two children-GEN

Furthermore, movement of a pronominal complement is obligatory:

- (67) a. *Vidio sam vas dvoje.*
 (I) saw AUX-1 SG you-GEN two
 b. **Vidio sam dvoje vas.*

(iii) Finally, in this group we shall include the nominative and accusative forms of 'two', 'three', and 'four': *dvije, dva, tri, četiri*.

- | | | | |
|---------|-----------------------------------|-----------|-----------------|
| (68) a. | <i>Dva muškarca/goveda</i> | <i>su</i> | <i>stigla.</i> |
| | two man/cattle-GEN PAUC | AUX-3 PL | arrived-NEUT PL |
| b. | <i>Dvije žene</i> | <i>su</i> | <i>stigle.</i> |
| | two woman-GEN PAUC | AUX-3 PL | arrived-FEM PL |
| c. | <i>Tri/četiri muškarca/goveda</i> | <i>su</i> | <i>stigla.</i> |
| | three four man/cattle-GEN PAUC | AUX-3 PL | arrived-NEUT PL |
| d. | <i>Tri/četiri žene</i> | <i>su</i> | <i>stigle.</i> |
| | three/four woman-GEN PAUC | AUX-3 PL | arrived-FEM PL |

This group assigns what we could call paucal genitive (cf. also Franks (1994)). Bosnian used to have three grammatical numbers singular, plural, and dual. Dual was lost in the development of the language, but the remnants survive in contexts with numerals *two, three* and *four*. Leko (1995) shows that the forms found after *dva, tri, četiri* should be treated as genitive paucal, not genitive singular forms, although in the majority of cases the two forms are not distinct.

These numerals behave like quantifiers proper in that they can appear only in nominative, accusative and genitive contexts:

- (69) a. *Vidio sam dva muškarca/ goveda* 'I saw two men/ cattle/ women.'
dvije žene I saw two women
 b. *Bojao se dva muškarca/ goveda.* 'He was afraid of two men/ cattle/ women.'
dvije žene
 c. **Pisao je dva muškarca/ goveda.* 'He wrote to two men/ cattle/ women.'
dvije žene

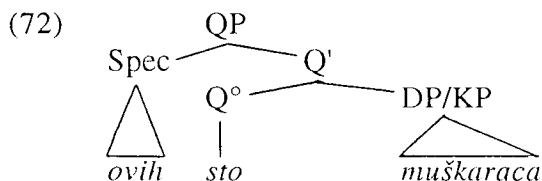
They allow for and actually prefer movement of the modifier of the following noun into their Spec (70). But, differently from the other quantifiers they do not allow pronouns in their complement (71), possibly due to the absence of a paucal form of the pronoun:

- (70) a. *Vidio sam dva ona muškarca.*
 (I) saw two those-GEN PAUC man-GEN PAUC
 b. *Vidio sam ona dva muškarca.*
 c. *Vidio sam dva prva muškarca.*
 (I) saw two first-GEN PAUC men-GEN PAUC
 d. *Vidio sam prva dva muškarca.*
- (71) a. **Dva vas neka dodje sutra.*
 two you-GEN let come tomorrow

- b. **Vas dva neka dodje sutra.*

This is confirmed by comparison with *dvoje* above. *Dvoje* assigns genitive plural and therefore allows a pronoun in its complement.

The structure we propose for this class of numerals is (II), repeated here as (72):



3.3. Adjectival Numerals

Fully adjectival numerals are: (i) all ordinals such as *prvi*, *prva*, *prvo* 'first'; (ii) cardinals such as *jedni*, *jedne*, *jedna* 'one', *dvoji*, *dvoje*, *dvoja* 'two', *troji*, *troje*, *troja*, 'three', etc. These numerals are treated in traditional grammars as plural forms of collective numerals and they require as their head noun *pluralia tantum* such as *svatovi* 'wedding procession', *naočale* 'spectacles', *kola* 'carriage', or nouns denoting one whole for use but consisting of a pair of separate items, such as *rukavice* 'gloves', *cipele* 'shoes'; (iii) the oblique forms of *two*, *three*, and *four* - genitive: *dviju* (FEM), *dvaju*, *triju*, *četiriju*; dative/ instrumental/ locative: *dvjema* (FEM), *dvama*, *trima*, *četirma*.

First of all they are declinable, and they agree with the noun that follows.

- (73) a. *Prvi/ drugi/.. muškarac je stigao.*
 first second man-NOM AUX-3 SG arrived-MASC SG
- b. *Jedni/ dvoji/... svatovi su stigli.*
 one two wedding procession AUX-3 PL arrived-MASC PL
- c. *Bojao se dvaju muškaraca.*
 (he) feared two-GEN men-GEN
- d. *Pisao je dvama muškarcima.*
 (he) was writing (to) two-DAT men-DAT

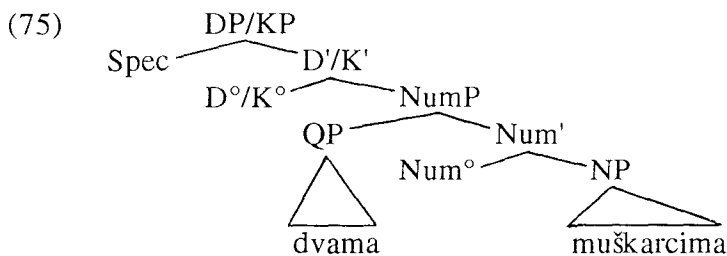
Notice that *svatovi* has the declension of masculine plural nouns and always triggers plural features on the verb.

They cannot modify a pronoun:

- (74) a. *Prve žene su stigle.*
 first-FEM women-NOM AUX-3 PL arrived-FEM PL
- b. *One su stigle.*
 they AUX-3 PL arrived-FEM PL

- c. **Prve one su stigle.*
 first-FEM they-FEM AUX-3 PL arrived-FEM PL
- d. *Svatovi su stigli.*
 wedding procession AUX-3 PL arrived-MASC PL
- e. *Oni su stigli.*
 they AUX-3 PL arrived-MASC PL
- f. **Jedni oni su stigli.*
 one they AUX-3 PL arrived-MASC PL
- g. *Bojao se njih.*
 (he) feared them-GEN PL
- h. **Bojao se dvaju njih.*
 (he) feared two-GEN them-GEN PL

We conclude that these numerals behave like adjectives. Their structure is given in (75):



4. Conclusions

Not always a unifying analysis is the correct one. In this paper we have proposed to divide what are usually called "quantifiers" into three different classes: quantity nouns, quantifiers proper, quantity adjectives. This tripartition has proved fruitful in the analysis of different syntactic phenomena that arise when quantifiers are present. The different behaviour of each of the classes proposed with respect to the different syntactic constructions discussed in this paper make the tripartition necessary, at least in the language we have considered, namely Bosnian.

If we lose in categorial economy by subclassifying apparently similar elements into three different classes, we economize in crosslinguistic perspective in that this subclassification has already proven to be necessary also in other languages, as proposed in Giusti (1991) for Romance and Germanic and as briefly summarized in the course of this paper.

References

- Brugè, L. (1994). "Alcune considerazioni sul dimostrativo in spagnolo", ms., University of Venice.
- Cinque, G. (1994) "On the evidence for partial N-movement in the Romance DP", *Paths Towards Universal Grammar. Studies in Honor of Richard S. Kayne*, G. Cinque, J. Koster, J-Y. Pollock, L. Rizzi, R. Zanuttini (eds.), Georgetown University Press, 85-110.
- Franks, S. (1994). "Parametric Properties of Numeral Phrases in Slavic", *Natural Language and Linguistic Theory* 12, 599-674.
- Giusti, G. (1991). "The Categorical Status of Quantified Nominals", *Linguistische Berichte* 136, 438-454.
- Giusti, G. (1992). *La sintassi dei determinanti*, Unipress, Padova.
- Giusti, G. (1994). "Enclitic Article and Double Definiteness. A Comparative Analysis of Nominal Structure in Romance and Germanic", *The Linguistic Review*, 11, 241-255.
- Giusti, G. (1995). "Heads and Modifiers among Determiners. Evidence from Rumanian", *Advances in Roumanian*, G. Cinque and G. Giusti (eds.), 103-125.
- Grimshaw, J. (1991). "Extended Projection", ms., Brandeis University.
- Kayne, R. (1993). "The antisymmetry of Syntax", ms., CUNY.
- Leko, N. (1986). "Agreement with/ of conjoined elements and resolutions rules in Serbo-Croatian", in Boris Sorokin (ed.), *Proceedings of the Kentucky Foreign Language Conference. Slavic Section*. Vol. IV, no. 1, pp. 144-158.
- Leko, N. (1988). "X-bar theory and internal structure of NPs", *Lingua* 75, 135-169.
- Leko, N. (1990). "Case of noun phrases in Serbo-Croatian and Case Theory", *Folia Linguistica* 23/ 1-2, 27-54.
- Leko, N. (1991). "Assignment of Case to objects of nouns and Case theory", in W. Bahner, J. Schildt and D. Viehweger (eds.), *Proceedings of the Fourteenth International Congress of Linguists (Berlin, 1987)*, pp. 779-782.
- Leko, N. (1992). "Restrictive and appositive forms of Serbo-Croatian descriptive adjectives", *Zeitschrift für Slawistik* 37, 621-629.
- Leko, N. (1995) "Syntactic behaviour of numerals 1,2,3,4,5 in Bosnian and Slovene", presented at 28th Annual Meeting of the *Societas Linguistica Europaea*, Leiden.