Giuliana Giusti and Nedžad Leko

THE CATEGORIAL STATUS OF QUANTITY EXPRESSIONS

1. Introduction

In this paper, we focus on the intricate syntax of quantity expressions in Slavic languages. We claim that a categorial tripartition of quantity expressions can capture a wide range of cross-linguistic evidence. In particular, we argue that a quantity expression can belong to one of the following categories: Quantifiers (Q), (Quantity) Nouns (QN) and (Quantity) Adjectives (QA), the former being a lexical category with specific case assigning properties and the latter two being instances of the lexical categories of nouns and adjectives respectively. The different syntactic behaviour that is found will be reduced to general properties of each category in the languages under consideration. In so doing, we unify the syntax of Slavic quantity expressions with that of Germanic and Romance languages as proposed in Giusti (1991, 1997) and Cardinaletti and Giusti (1992).

The paper is organized as follows. In section 1, we review previous proposals and outline our own. In section 2, we contrast Quantifiers vs. Quantity Nouns. In section 3, we contrast Quantifiers vs. Quantity Adjectives. In section 4, we focus on the syntax of numerals, which turn out to reduce to the three classes. We base our discussion on Bosnian/Croatian/Serbian data, but the Appendix provides data and a brief discussion of other Slavic languages such as Russian, Ukrainian, Czech, and Polish.

1.1. The basic puzzle

The categorial status of numeral phrases in Slavic languages has been the topic of debate for a long time both in traditional and in theoretical grammar. In generative grammar we refer to Pesetsky (1982), Babby (1987), Neidle (1988), Franks (1994, 1995)
among many others. The basic facts are illustrated with the Russian examples in (1)-(3) (cf. Franks (1994: 600-602)). The examples in (1) show that numerals in direct case contexts (nominative or accusative) are uninflected and apparently assign genitive case to the following noun phrase. Both numerals in (1) are in their citation forms, whereas the noun which follows them appears in genitive case:

(1) a. Ivan kupil tri mašiny.
Ivan-NOM bought three car-GEN SG
'Ivan bought three cars.'

b. Ivan kupil pjat’ mašin.
Ivan-NOM bought five car-GEN PL

However, the numeral odin ‘one’ in (2), does not present the pattern in (1). It does not assign case, but agrees in case with the following noun:

(2) Ivan kupil odnu mašinu.
Ivan-NOM bought one-ACC car-ACC
'Ivan bought one car.'

In oblique cases (genitive, dative, locative, instrumental), numerals, including odin ‘one’, behave like adjectives: they inflect and agree for φ-features and case with the noun phrase they modify, as in (3), where we find instrumental Case on both numerals and nouns, because the verb vladeet ‘to own’ requires instrumental on its complement.

(3) a. Ivan vladeet odnoj fabrikoj.
Ivan owns one-INSTR factory-INSTR
b. Ivan vladeet tremja fabrikami.
Ivan owns three-INSTR factory-INSTR PL
c. Ivan vladeet pjat’ju fabrikami.
Ivan owns five-INSTR factory-INSTR PL

We adopt the terminology proposed by Babby (1987) who distinguishes “heterogeneous” from “homogeneous” Case assignment. The examples in (1) will be called “heterogeneous constructions”, because a part of the quantified phrase bears a different case, namely genitive. The examples in (2)-(3) will be called
“homogeneous constructions” because all elements of the quantified noun phrase share the same Case.\footnote{4}

Summarizing, the above patterns raise the following questions:

- Why do some numerals assign Genitive?
- Why do Nominative and Accusative not appear when certain numerals are present and are, instead, overridden by Genitive, called Genitive of quantification (GEN-Q) by Franks (1994)?
- Why are oblique Cases (Genitive, Dative, Locative, and Instrumental) not overridden by Genitive of quantification?

Previous proposals have tried to answer these questions, either by differentiating the quantified noun phrases in categorial status (cf. Pesetsky (1982)) or by developing a complex theory of Case assignment (cf. Babby (1987) and Franks (1994, 1995)). Our proposal will be more on the former line of reasoning. It is completely in line with Neidle (1988) who derives different patterns from the different categorial status of apparently homophonic quantifiers.

1.2. Previous proposals

1.2.1. Pesetsky’s (1982) QP-hypothesis

Pesetsky (1982) does not deal with the pattern illustrated in examples (1)-(3). He argues for a different categorial status of quantified phrases, basing his proposal on the fact that in Russian, it is possible to find two subject-verb agreement patterns with quantified subjects, as in (4), where we find the plural form of the predicate in (4a) (prišli ‘arrived’), but neuter singular in (4b) (prišlo):

\[(4) \quad \text{a. } \text{Pjat’ krasivyx devušek prišli.} \quad \text{five beautiful-GEN PL girls-GEN PL arrived-PL} \]
\[(4) \quad \text{b. } \text{Prišlo pjat’ krasivyx devušek.} \quad \text{arrived-NEUT SG five beautiful-GEN PL girls-GEN PL} \]

Pesetsky (1982) postulates that quantified phrases are NPs in preverbal subject position, as in (4a), when plural agreement of the verb occurs (prišli), and QPs in VP-internal position, as in (4b), when the default neuter singular form appears on the verb
(prišlo). He further assumes that when the quantified subject is a NP, as in (4a), it must move to preverbal subject position in order to receive (Nominative) case. On the other hand, when it is a QP, as in (4b), it preferably remains in situ within VP. This is because QP, according to his proposal, does not require case. He further claims that, with few exceptions, QPs cannot be true subjects.

We see two problems with this account. The first is the empirical problem noticed by Franks (1994:123) that it is not always the case that QPs cannot appear in preverbal position. They may do so even when the verb has neuter singular features (cf. pjetr’ krasivyx devušek prišlo na večerinku “five beautiful women came (neut) to [the] party”.

The second is theoretical and concerns the need to assign two different labels (NP vs. QP) to the same construction, namely the heterogeneous construction in (4), where an uninflected Quantifier (pjetr’ “five”) is followed by a genitive noun phrase (krasivyx devušek “beautiful girls”).

1.2.2. Babby’s (1987) Case hierarchy

Babby (1987) proposes a unified structure, given in (5), for examples in (1)-(3). The Quantifier projects up to a QP and is in SpecNP assigning case to its sister, the intermediate N’, as represented in (5):

(5) \([\text{NP QP} [\text{N'} N]]\)

In order to explain why Genitive does not appear in oblique contexts, Babby proposes a Case Hierarchy, as in (6), in the spirit of Chomsky’s (1981, 1986) Case Theory. Babby (1987:116) assumes that oblique Cases (including genitive assigned by verbs, prepositions and adjectives) are Lexical Cases and are assigned at D-structure, while direct Cases (including genitive assigned by Quantifiers) are Configurational Cases and are assigned at S-structure:

(6) Case hierarchy: Lexical Case > Configurational Case

According to this proposal, at S-structure NOM/ACC cannot percolate from NP down to N’, since N’ is assigned GEN by a Quantifier at the same level. On the other hand, an oblique case is
assigned earlier than structural case. Its presence therefore blocks the assignment of genitive of quantification by the Quantifier.

This proposal is inconsistent with current assumptions about case assignment. Case can neither be assigned by a phrasal category (such as QP in (5)), nor be realized on an intermediate projection (such as N'). Furthermore, the crucial distinction of D-structure and S-structure levels is no more available in the current framework. This latter problem is also reproduced in Franks' (1994) proposal.

1.2.3. Franks' (1994) parametric proposal

Franks (1994) essentially retains Babby's proposal. He revises the structural analysis only at the end of the paper in a DP-framework. In so doing, he assumes that the numeral is in the SpecQP, as represented in (7), with an empty Q which assigns Genitive to the embedded NP:

(7) \[QP \text{ Num } [Q'[Q e][NP N]]\]

Franks (1994) also extends the analysis to Serbo-Croatian and Polish. Serbo-Croatian (which we will call from now on Bosnian / Croatian / Serbian, abbreviated as BCS) does not differ from Russian in direct case contexts (compare Russian examples in (1) with BCS in (8a)). However, oblique cases in BCS present the pattern illustrated in (8b,c), where the quantified phrases are found in genitive (8b) and instrumental contexts (8c) respectively, and yet the numerals appear in their citation form, whereas nouns are genitive in both (8b) and (8c):

(8) a. Kupili smo pet knjiga.
   (We) bought five books-GEN PL
b. Bojao sam se pet ljudi.
   (I) feared five people-GEN PL
c. Razgovara sa pet djevojaka.
   (He) talks with five girls-GEN PL

On cases similar to those in (8), Franks (1994) concludes that, for example, the quantified phrase following the preposition sa ‘with’ in (8c) bears actually instrumental case, even if no element within it shows overt instrumental case morphology. The
implication is that these phrases are NPs, since Franks follows Pesetsky in the assumption that QPs are caseless.

Franks postulates the following parametric difference between Russian and BCS: Genitive of quantification (GEN-Q) would be structural in Russian, but inherent in BCS. Due to this difference, GEN-Q would be overridden by oblique (inherent) Case in Russian, but not in BCS.

Franks’ proposal encounters both empirical and theoretical problems. It suffers from the theoretical problem of requiring D-structure vs. S-structure (as pointed out earlier in 1.2.2) like Babby’s (1987) proposal, and in addition, it addresses the X-bar theory problems with Babby’s account. From the empirical point of view, Franks’ proposal correctly predicts the grammaticality of (9a), but it also predicts that (9b) should be grammatical, and (9c) ungrammatical, contrary to the facts:

(9) a. o  
   about  
   tri  
   three  
   knjige  
   book-GEN SG

b. *o  
   about  
   trima  
   three-LOC  
   knjige  
   book-GEN SG

c. o  
   about  
   trima  
   three-LOC  
   knjigama  
   book-LOC PL

In (9a) we see a heterogeneous construction parallel to (8a), the only difference being that the quantified phrase in (9a) is the complement of a preposition. Here, the numeral is uninflected and the following noun is genitive. In the ungrammatical (9b) we see the inflected locative form of the numeral followed by a genitive noun. It is clear that (9b) is not excluded because of the locative form of the numeral since the same locative form is found in (9c). The crucial difference between (9b) and (9c) is the case on the noun ‘book’, which is genitive in the ungrammatical (9b) and locative in the grammatical (9c). Franks’ proposal that GEN-Q is the inherent case in BCS predicts that it is not overridden by locative case, contrary to the facts as shown by the contrast in (9b,c). However, Franks restricted his proposal to the numeral ‘five’, and this proposal applied to ‘three’ only gives (9a). For Franks’ proposal, the fact that (9c) is grammatical is irrelevant, since ‘three’ as an adjective does not assign GEN-Q, so the entire phrase is locative.

Furthermore, Franks cannot account for the fact that BCS is parallel to Russian in that heterogeneous constructions cannot
appear as the complement of verbs assigning instrumental or dative, as in (10), where the verb *upravlja* ‘to manage’ assigns instrumental.7

(10) a. *Ivan upravlja tri fabrike.
    Ivan-NOM manages three factory-GEN
b. *Ivan upravlja pet fabrika.

One would expect (10a) to be grammatical just like (9a). And similarly (10b), which looks like (8c), but whereas (8c) is grammatical, (10b) is not. However, in contexts like (10), we can find homogenous constructions, as in (11a):

(11) a. Ivan upravlja trima factory-INST PL
    Ivan-NOM manages three-INST factory-INST PL
b. *Ivan upravlja petima factory-INST PL
    Ivan-NOM manages five-INST factory-INST PL

In the oblique complement of a verb, only inflected quantified expressions can appear, as shown by the ungrammaticality of examples in (10) with uninflected numerals. Notice also that pascal numerals (‘two, three, four’) in BCS are parallel to their Russian counterparts in having an inflected form, as in (11a), with the instrumental form of ‘three’ (*trima*), and an uninflected form, as *tri* in (9a). Contrary to what happens in Russian, higher numerals (from ‘five’ onwards) do not inflect in BCS. The ungrammaticality of (11b) is to be trivially reduced to the fact that the form *petima* doesn’t exist.8 The Russian example in (3c) corresponding to the BCS example in (11b) is grammatical, with the instrumental form *pjet*ju, which happens to be present in this language.

1.3. Neidle (1988)

Neidle (1988: Ch. 4) deals with the case properties of numeral and quantifier phrases in the LFG framework. She claims that the quantity expressions in (1) above are heads of the noun phrase, while the quantity expressions in (2)-(3) above are modifiers of the noun phrase. She also states that the same root can belong to different categories, e.g. *pjet* ‘five’ is a head but it only has direct case morphology and can therefore appear only in direct case marking contexts, while the adjective *pjet*ju, *pjet*ju only
has oblique case morphology and accordingly can only appear in oblique case assigning contexts. Neidle also notices that it is necessary to differentiate Quantifiers such as *pjat'*, with poor or no morphology, from Nouns such as *tysjača* and *million*, with richer specification for Gender and Case features. Many other authors (Corbett 1983), Franks (1995), Mel'čuk (1985), Suprun (1959), among others] have also ascribed different lexical properties to *tysjača* and *million* in contrast to *pjat'*. The analysis we are going to propose is completely in line with Neidle's. The minimalist framework in which our analysis is set will allow us to develop further syntactic tests to corroborate the tripartition; whereas the cross-linguistic range of data will allow us to distinguish between universal and language specific principles.

1.4. Our proposal

We assume, following Chomsky (1995) and later work along these lines, that case morphology is generated directly on the noun. In the course of the numeration, it is checked in the highest functional head of the noun (here labelled as D/K). The intermediate functional heads between N and D are merged bottom up in order to check the relevant φ-features and Case feature on the modifiers of N, building an extended projection in the sense of Grimshaw (1991). As a consequence, functional heads share the φ-features morphologically realized on N. Following Leko (1999) and Giusti (1993), we maintain that adjectives agree with the head noun by means of their being in a Spec-Head agreement configuration with a functional head of the extended nominal projection, and that each adjective has its own functional projection where the case morphology realized on the adjectival head is checked. We follow Cinque’s (1994) proposal according to which adjectives are inserted into the nominal functional projection in hierarchical order.10

We also assume that the noun phrase must realize the Case required by the syntactic context in which it is merged at the level of Spell Out. We have no proposal as to how direct and oblique Cases are assigned in the sentential structure.

Apart from these general assumptions on noun phrase syntax, we need no specific account for the syntax of quantity expressions.
We propose that the general pattern of heterogeneous and homogeneous constructions and cross-linguistic variation among Slavic languages can be captured by means of the empirically motivated assumption of three different categories among quantity expressions. For the sake of clarity, we will take BCS quantity expressions as our point of reference in sections 2 and 3. In section 4, we extend our proposal to numerals in BCS.

The three types of quantity expressions that we are going to support are the following:

- **Quantity Nouns** such as BCS večina ‘majority’ in (12):
  
  (12) a. Večina mojih prijatelja je došla.
      majority-NOM FEM my-GEN friends-GEN arrived-FEM SG
      ‘The majority of my friends arrived.’
  
  b. Vidio sam većinu mojih prijatelja.
      (I) saw majority-ACC FEM my-GEN friends-GEN
      ‘I saw the majority of my friends.’

- **Quantifiers** such as nekoliko ‘several’ in (13):
  
  (13) a. Nekoliko mojih prijatelja je došlo.
      several my-GEN friends-GEN arrived-NEUT SG
      ‘Several of my friends arrived.’
  
  b. Vidio sam nekoliko mojih prijatelja.
      (I) saw several my-GEN friends-GEN
      ‘I saw several of my friends.’

- **Quantity Adjectives** such as mnogi, mnoge, mnoga ‘many-MASC/FEM/NEUT’ in (14):
  
  (14) a. Mnogi moji prijatelji su došli.
      many-NOM M my-NOM M friends-NOM M arrived-M PL
      ‘Many friends of mine arrived.’
  
  b. Mnoge moje prijateljice su došle.
      many-NOM F my-NOM F friends-NOM F arrived-F PL
      ‘Many (female) friends of mine arrived.’
  
  c. Mnoga moja djeca su došla.
      many-NOM N my-NOM N children-NOM N arrived-N PL
      ‘Many children of mine arrived.’

Quantity Nouns, as in (12), and Quantifiers, as in (13), are lexical heads that enter the numeration as sisters of a full noun phrase, imposing features such as genitive case and plural number (mojih prijatelja ‘my friends’) on it. The fact that the singular
genitive form *moga prijatelja* would not be acceptable in (12) and (13) shows that not only case, but also plural number is imposed by these quantity nouns and quantifiers. This fact will be even more obvious in later discussion of numerals ‘two’, ‘three’, and ‘four’, which impose paucal number on their NP sisters. Despite the many similarities, it will be argued that it is not desirable to unify Quantity Nouns and Quantifiers. They display some crucial differences: Quantifiers are defective in their morphological paradigm. For this reason they can be merged only when Case morphology does not need to be overt. This is the case of direct Case assigning contexts (Accusative and Nominative) in all Slavic languages, and also of Object of preposition in BCS. On the contrary, quantity nouns have rich morphology and can satisfy the requirement of visibility of Case in any Case assigning context. As a consequence, no Case restriction is observed when they occur.

The structures proposed are as in (15) for Quantity Nouns and (16) for Quantifiers:

(15) \[ \text{većina} \quad \text{mojih} \quad \text{prijatelja} \]
These two structures differ minimally but in crucial features. In (15), the highest lexical head is a noun projecting a full extended nominal projection in the sense of Grimshaw (1991), which we represent as DP/KP\textsuperscript{11}. This can host an agreeing demonstrative or other modifiers. In (16), the highest lexical head is a Quantifier, which projects its own extended functional projection, which we label as FP to differentiate it from the nominal extended projection. SpecFP in some languages is available for movement of the complement DP/KP, or the element filling its SpecDP/KP. The extended projection of the quantifier does not check any Case feature and therefore can only appear where Case is recoverable from the context (notably structural case and the Object of prepositions in some languages).

Quantity Adjectives are trivially lexical in nature on a par with other classes of adjectives. They have full adjectival inflection and therefore appear in any Case assigning position.

The properties of Quantity Adjectives justify a different categorization with respect to Quantifiers. The structural position of Quantity Adjectives is shown in (17):
We will see that in most respects Quantity Adjectives behave like all other adjectives. For example they crucially agree with the following noun for all features including case, gender and number. In some languages adjectives specialize as suppletive forms of quantifiers. This is why some numeral adjectives have a defective paradigm, in the sense that they only display oblique case morphology.

The structural distinctions assumed in (15)-(17) are completely derived by independent properties of the categories N, Q, and A that must be present in the lexicon. A certain degree of crosslinguistic variation is therefore expected.

In order to definitely dispense with the Case hierarchy and the consequent assumption of case assignment at different levels, the proposed tripartition of quantity expressions must interact with a further, quite uncostly, assumption, namely that successfully merging a constituent in the derivation, requires that the constituent satisfies the morphological requirements of the merging context. The different categories Q, N, and A can be merged at different points in the derivation and, once they are merged, contribute to create different merging contexts. In particular, Q and N only can be merged as sisters of a full nominal structure marked for Genitive, while A only can be merged as the head of an AP-modifier inside the nominal phrase. In the course of the following section, we will point out other properties of the merging points in which we find the quantity expressions realized by these three different kinds of categories.
The tripartition of quantity expressions in Russian (and in other Slavic languages) is not novel in theoretical as well as traditional, descriptive frameworks (cf. Mel'čuk (1985) a.o.). What is novel in our proposal is that it reduces all quantity expressions (with the exception of distributive quantifiers which we do not consider at all here) to one of the three categories. It is also different from previous proposals in that it reduces certain syntactic behaviours to one single category. The cost for this is to assume that a lexical element can have a defective paradigm.

2. Quantifiers vs. Quantity Nouns

Both Quantifiers, such as nekoliko ‘several’ in (18a), and Quantity Nouns, such as većina ‘majority’ in (18b), in BCS give rise to “heterogeneous constructions”. They can select a genitive complement as regular nouns, such as neprijatelji ‘enemy’ in (18c). In all three examples in (18) we find the same genitive plural form of the complement (mojih prijatelja ‘my friends’):

(18) a. nekoliko mojih prijatelja
    several my-GEN friends-GEN
    ‘several friends of mine / several of my friends’
b. većina mojih prijatelja
    majority my-GEN friends-GEN
    ‘the majority of my friends’
c. neprijatelji mojih prijatelja
    enemies my-GEN friends-GEN
    ‘the enemies of my friends’

Quantifiers are clearly independent heads in that they do not share the features of their complement, so that we find the same form of the Quantifier with masculine nouns, as in (19a), and feminine nouns, as in (19b). The predicate is neuter singular both in (19a) and (19b) (spavalo ‘slept’) which may be treated as a default agreement form, or agreement with the head of the subject phrase, namely the Quantifier nekoliko ‘several’:

(19) a. Nekoliko muškaraca je spavalo.
    several men-GEN MASC slept-NEUT SG
b. Nekoliko žena je spavalo.
    several women-GEN FEM slept-NEUT SG
Like regular nouns, Quantity Nouns trigger agreement with the predicate: većina ‘majority’, količina ‘quantity’, etc. trigger feminine agreement, as in (20a); broj ‘number’, dio ‘part’, etc. trigger masculine agreement, as in (20b); mnoštvo ‘a large number of’ triggers neuter agreement, as in (20c); whereas Quantifiers, such as nekoliko ‘several’, trigger neuter agreement, as in (20d):

(20) a. Većina mojih prijatelja je došla. 
    majority my friends arrived-FEM SG
    ‘The majority of my friends arrived.’

b. Jedan broj mojih prijatelja je došao.
    one number my friends arrived-MASC SG
    ‘A number of my friends arrived.’

c. Mnoštvo mojih prijatelja je došlo.
    a large number of my friends arrived-NEUT SG
    ‘Several of my friends arrived.’

d. Nekoliko mojih prijatelja je došlo.
    several my friends arrived-NEUT SG
    ‘Several of my friends arrived.’

In other words, the predicate always agrees with the lexical head of the phrase in subject position. If the head is a quantifier, the predicate is neuter. This is not necessarily the case in other Slavic languages. In those languages in which “semantic” agreement and/or a default neuter agreement is possible with quantity nouns and/or quantifiers, we must separate the question of how subject-verb agreement is realized in the languages under consideration from the question of the categorial status of the quantity expressions in these languages. Only the latter is the matter of our investigation here. In the specific cases in which the language appears to allow more choices of verbal agreement with one and the same element, we should simply not consider verbal agreement as a straightforward diagnostic to determine the head of the subject.

So far, nothing distinguishes a quantifier from a neuter quantity noun. However, there are reasons to believe that Quantity Nouns and Quantifiers proper are two distinct categories.

Quantity Nouns but not Quantifiers can be preceded by an agreeing demonstrative:

(21) a. ovaj broj stolica
    this-NOM M SG number-NOM M SG chairs-GEN F PL
    ‘this number of chairs’
b. *ovo mnogo stolica
   this-NEUT SG many chairs-GEN FEM PL
   'a lot of these chairs'

This is also the case in the other Slavic languages.
Quantity nouns can be preceded by modifiers that agree for
gender, number, and Case, as in (22a), while Quantifiers are mod-
ified by adverbs, as in (22b):

(22) a. velika većina mojih prijatelja
       big-NOM F SG majority-NOM F SG my friends-M GEN PL
       'the great majority of my friends'

b. vrlo mnogo/ malo mojih prijatelja
   very many few my friends
   'very many/few of my friends'

Having a full nominal declension like all regular nouns,
Quantity Nouns may appear in oblique cases, as in (23a) with
većini 'majority' in dative case. Quantifiers lack full declension
and therefore cannot appear in oblique positions, as the ungram-
maticality of (23b) illustrates, where nekoliko 'several', being a
Quantifier, cannot appear in a dative case assignment position:

(23) a. Pisao je većini prijatelja
       (he) wrote majority-DAT friends-GEN PL
       'He wrote to the majority of friends.'

b. *Pisao je nekoliko prijatelja.
   'He wrote to several friends.'

Quantifiers may appear in oblique case positions in BCS
only if preceded by a preposition, as in (24b) where we find the
preposition prema 'towards' in front of the Quantifier nekoliko
'several':

(24) a. Pokazao je prema većini prijatelja.

b. Pokazao je prema nekoliko prijatelja.
   (he) pointed towards several friends
   'He pointed towards several friends.'

We have already discussed this property of BCS, which is
not shared by other Slavic languages, in relation to our criticism
of Franks' proposal in section 1.2.3, examples (8)-(9).
The rich vs. poor inflection differentiates quantity nouns and quantifiers in other Slavic languages. This has the result that quantity nouns can appear in all syntactic contexts, while quantifiers can appear only in few case positions, depending on general properties of the Case checking system of each language.

These differences between Quantity Nouns and Quantifiers are directly captured by our proposal, which states that they are two different lexical categories and as such they project different functional structures. Quantity Nouns have $g$-features as regular nouns, and they project functional specifiers which can host a demonstrative or other agreeing modifiers. Quantifiers do not.

On the other hand, a Quantifier projects a functional Specifier which can host its complement or part of its complement, as in (26), derived from (25) by movement of the complement to the left:

(25) a. [FP [QP mnogo [DP vas]]]
   many you-GEN
   'a lot of you'

   b. [FP [QP mnogo [DP ovih studenata]]]
   many these-GEN students-GEN
   'a lot of these students'

(26) a. [FP vas [QP mnogo [DP t]]]

   b. [FP ovih [QP mnogo [DP t studenata]]]

An explanation of the trigger of this optional movement is beyond the scope of this paper. It is well known that pronouns tend to escape their basic position in the complement of a quantifier, cf. English we *all* which contrasts with the ungrammatical *all we*. It therefore does not surprise us to find the same phenomenon in Slavic languages. Movement of the demonstratives out of the DP, leaving the rest of the DP in place, is an independent property of BCS, which interacts with the properties of the functional structure of Quantifier Phrases which provides a landing position for the moved demonstrative. In (27a) we observe the basic word order of the noun phrase *ovu knjigu* (‘this book’), from which the topicalized structure (27b) is derived. Example (28) shows that the functional specifier of QP can also be an escape hatch for such movement:

(27) a. Čitam oву knjigu.
   (I) read this-ACC SG book-ACC SG
   'I am reading this book.'
b. OVU čitam knjigu (ne onu).
   this-ACC SG (I) read book-ACC SG (not that-ACC SG)
   'I am reading THIS book (not that).'

(28) a. Čitam mnogo ovih knjiga.
   (I) read many these-GEN PL books-GEN PL
b. OVIH čitam mnogo knjiga (ne onih).
   these-GEN PL (I) read many books-GEN PL (not those-GEN)
   'I read many of THESE books.'

The structure in (28) is impossible with common nouns, as well as with Quantity Nouns like većina 'majority' in (29), so that examples (30) with raised complements are ungrammatical:

(29) a. većina vas
   majority you-GEN
   'the majority of you'
b. većina ovih studenata
   majority these-GEN students-GEN

(30) a. *vas većina
b. *ovih većina studenata

The contrast between (26) and (30) can readily be captured by the hypothesis that Quantity Nouns and Quantifiers project different functional structures.

Quantity Nouns, like regular nouns, project Agr-heads which contain all the φ-features of the head noun. Their specifiers agree with the Agr-heads for φ-features. Therefore, they are not available for elements which have already checked a different set of φ-features in the lower noun phrase. The extended projection of Quantifiers is not specified for φ-features, and it can therefore host parts of other noun phrases without violating the feature checking procedures.

In this section, we have shown that there are interesting similarities between 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 it according to their semantic properties. They, however, differ in morphosyntactic (inflational) properties. They are therefore taken to project different extended projections: Quantity Nouns, be-
ing rich in $\varphi$-features, parallel to common nouns, project a series of functional phrases which copy the $\varphi$-features of the head noun. On the contrary, Quantifiers have no $\varphi$-features to be copied in the functional projection.

3. Quantifiers vs. Quantity Adjectives

Let us now turn to "homogeneous constructions". We propose that, in these cases, the Quantifier is a regular adjective, as we have anticipated in structure (17). We therefore expect that Quantity Adjectives behave like other Adjectives in the languages under consideration.

In BCS, the syntactic behaviour of the Quantifier \textit{mnogo} in the heterogeneous construction discussed above and repeated here in (31), is clearly different from the adjectival Quantifier \textit{mnogi, mnoge, mnoga} (fully inflected for gender, number and case) in the homogeneous constructions (32):

\begin{enumerate}
\item Mnogo studenata/ studentica/ goveda je došlo
  many students-GEN M/ students-GEN F/ cattle-GEN N arrived-N SG
\item Mnogi studenti su došli.
  many-NOM M PL students-NOM M PL arrived-MPL
\item Mnoge studentice su došle.
  many-NOM FEM PL students-NOM FEM PL arrived-FEM PL
\item Mnoga goveda su došla.
  many-NOM N PL cattle-NOM N PL arrived-N PL
\end{enumerate}

\textit{Mnogo} in (31) behaves as a head assigning genitive to its complement, whereas \textit{mnogi, mnoge, mnoga} in (32) is an adjective which agrees in number, gender and case with the head noun (\textit{studenti} ‘male students’, \textit{studentice} ‘female students’, and \textit{goveda} ‘heads of cattle’, respectively). This is a defining property of (Quantity) Adjectives in BCS and other Slavic languages.

In (31) the default neuter singular agreement form\textsuperscript{13} (došlo) in the predicate shows that the head of the subject phrase is the quantifier. In (32) the agreement on the verb shows that the head of the quantified construction is the common noun.

Only the adjectival form of ‘many’ may be used in oblique case context, as in (33a) with the dative form of ‘many’ - \textit{mnogim}. The verb (\textit{pisati}) assigns dative to the NP which percolates to its head (\textit{studentima}), and spreads by agreement to the adjecti-
val form of ‘many’ (mnogim). A Quantifier ‘many’ has only direct case forms\textsuperscript{14} and consequently cannot be used in oblique case contexts, so that both (33b) and (33c) are ungrammatical:

(33) a. Pisao je mnogim studentima.
    (he) wrote (to) many-DAT students-DAT PL

b. *Pisao je mnogo studentima.
    (he) wrote (to) many students-DAT PL

(A further test to distinguish the two classes of quantity expressions is the cooccurrence with a pronoun, which is allowed with Quantifiers, as in (34a), but not with Quantity Adjectives, as in (35), where mnoge cannot be followed by njih:

(34) a. Vidio sam mnogo studenta/njih.
    (I) saw many students-GEN PL/ them-GEN PL

b. Vidio sam ih mnogo.
    (I) saw them-CL GEN PL many

(I saw a lot of them.)

(35) a. Vidio sam mnoge studente/*njih.
    (I) saw many-ACC PL students-ACC PL/ them-ACC PL

b. Vidio sam (*ih) mnoge.
    (I) saw them-CL ACC PL many-ACC PL

The impossibility to pronominalize the noun phrase following mnoge in (35a) is explained by the hypothesis that mnoge is an adjective, parallel to dobre ‘good’ in (36). Adjectives cannot be left in place in BCS by movement of the noun phrase since they are part of the projection moved, and therefore (36b) is ungrammatical. On the other hand, mnogo in (34a) allows its complement to move out of the Quantifier phrase, as in (34b):

(36) a. Vidio sam dobre studente/*njih.
    (I) saw good-ACC PL students-ACC PL them-ACC PL

b. *Vidio sam studente dobre/ ih dobre.

Since the floating of adjectives is allowed in BCS we expect Quantity Adjectives also to display this property, as is the case:
(37) a. Dobri studenti su stigli.
    good students-NOM MASC PL arrived-MASC PL
b. ?Studenti su dobri stigli.

(38) a. Svi/ mnogi/ neki studenti su stigli.
    all/ many/ some students-NOM PL arrived-MASC PL
b. Studenti su svi/ mnogi/ neki stigli.

(39) a. Mnogo studenata je stiglo.
    many students-GEN PL arrived-NEUT SG
b. Studenata je mnogo stiglo.

Up to this point, we have offered a certain number of diagnostics in BCS to distinguish the three proposed categories which can express quantity. This categorial distinction correlates to different merging points which can derive the effects summarized in the following chart:

<table>
<thead>
<tr>
<th>No.</th>
<th>Diagnostic Description</th>
<th>QN</th>
<th>Q</th>
<th>QA</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Selection of a Genitive complement</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>(b)</td>
<td>Default (neuter) agreement on the predicate</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>(c)</td>
<td>Agreement with the following noun phrase</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>(d)</td>
<td>Co-occurrence with an agreeing demonstrative</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>(e)</td>
<td>Co-occurrence with a genitive demonstrative</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>(f)</td>
<td>Rich declension</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

The behaviour of each of the three elements with respect to the six diagnostics above is predicted by independent properties and effects arising in relation to the different points of merging. The diagnostics also show that none of the three categories can be subsumed under either of the other two. The apparent similarities between QNs and QAs are independently motivated and cannot be explained by a common structural position. The diagnostics in (40) allow us to approach the wide range of numerals with some means of analysis.

4. Numerals

It is well known that the syntax of numerals, more than other quantity expressions, has always been the focus of discussion in the study of Slavic languages. This fact has also been apparent
in the introductory sections of this paper in which we have discussed the previous literature. The discussion on quantity expressions there was uniquely represented by numerals. In the present section, we claim that numerals in BCS can be reduced to one of the three categories argued for above. The syntax of numerals is less clear-cut than that of other quantity expressions because numerals apparently have mixed patterns. We claim that in those cases there are actually two different lexical elements of different category from one another.

4.1 Numerals that behave like Quantity Nouns

BCS numerals *desetina* ‘ten’, *stotina* ‘hundred’, *hiljada* ‘thousand’, *milijarda* ‘billion’ have full declension as feminine nouns, whereas *milion* declines as a masculine noun. They agree for gender with a predicate in the singular, as in (41a) where we find the feminine singular form of the predicate (stigla ‘arrived’) in agreement with *stotina* ‘hundred’.

(41) a. Stotina mužkaraca je stigla.
   hundred-NOM men-GEN PL arrived-FEM SG

b. Vidio je stotinu mužkaraca.
   (he) saw hundred-ACC men-GEN PL

These numerals can be modified by a demonstrative or by an adjective that agrees with the numeral for *gender* and case, as in (42a), with nominative demonstrative/adjective forms *ona* ‘that’ and *dobra* ‘good, at least’ in agreement with nominative *stotina* ‘hundred’, and as in (42b), with accusative forms *onu* and *dobra* in agreement with accusative *stotinu*:

(42) a. Ona/ dobra stotina mužkaraca je stigla.
    that/ good-NOM F hundred-NOM men-GEN PL arrived-F SG
    ‘That/ at least one hundred men arrived.’

b. Vidio je onu/ dobru stotinu mužkaraca.
   (he) saw that/ good-ACC F hundred-ACC men-GEN PL

They do not allow for movement of the demonstrative or the pronoun out of their complement, so that (43b) is ungrammatical with the demonstrative *ovi* ‘these’ moved in front of the numeral *stotina* ‘hundred’:
There is a group of numerals ending in -ica: dvojica, trojica, četvorica, etc., as in (44), which behave like so-called collective nouns such as djeca ‘children’. These numerals, like collective nouns, have nominal feminine declension, but syntactically behave as neuter plural nouns, so that their predicate has neuter plural form, as in (44) where we find the neuter plural form of the verb (stigla ‘arrived’). They select a human masculine genitive plural noun as their complement, such as muškaraca ‘men’ in (44):

(44) Dvojica/trojica/četvorica/...muškaraca su stigla.

The complement of both kinds of numeral nouns can be a genitive pronoun, like vas ‘you’ in (45). The pronoun can only follow the numeral noun, (45), but cannot precede it, (46):

(45) a. Stotina vas je stigla.

b. Dvojica vas je stigla.

We propose that the categorial status 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, and it is therefore in SpecDP in our framework. Furthermore, they do not allow movement of their complement to a higher Spec. The structure is given in (47):

(46) a. *Vas stotina je stigla.

b. *Vas dvojica su stigla.
4.2 Numeral Quantifiers

Numerals from five onwards, excluding compounds with one, two, three, four (namely ‘twenty-one’, ‘twenty-two’, etc.) behave like Quantifiers in that they are indeclinable, as shown by pet in (48). They cannot be modified by an agreeing adjective or demonstrative, so that (49) is ungrammatical. They allow a part of the complement noun phrase to move to SpecQP, as in (50b), with a demonstrative/adjective ovih ‘these’/hрабри ‘brave’ moved in front:

(48) a. Pet muškaraca / žena/ goveda je stiglo.
    five men-GEN / women-GEN cattle-GEN arrived-NEUT SG
 b. Vidio je pet muškaraca.
    ‘He saw five men.’
 c. *Pisao je pet muškaraca.
    ‘He wrote to five men.’

(49) *Ovo / hрабро pet muškaraca.
    this-NOM NEUT / brave-NOM NEUT five men-GEN PL

(50) a. Pet ovih/ hрабриh muškaraca je stiglo.
    five these-GEN / brave-GEN men-GEN arrived-NEUT SG
 b. Ovih/ hрабриh pet muškaraca je stiglo.
    ‘These/ brave five men arrived.’

Notice that in (50b) ovih / hрабриh still modify the complement of the numeral. The structure in (50b) derives from (50a) by movement of ovih / hрабриh to the Spec of QP. Therefore, the interpretation of the two examples in (50) is basically the same.

The collective numerals dvoje, troje, четворо, petoro, etc. also belong to this class. These numerals require so-called collec-
tive nouns such as *djece* ‘children’, *pilad* ‘chicken’, *dugmad* ‘buttons’, etc. as their complement. The examples in (51) show that these numerals also assign genitive to their complement and trigger neuter singular agreement on the predicate. They can appear in nominative contexts (51a), accusative contexts (51b), and genitive contexts (51c), as well as in the complement of prepositions (51e), but not in dative contexts (51d), unless there is a preposition assigning dative (as in (51e)), or any other oblique case.

(51) a. Dvoje djece je stiglo.
   two children-GEN arrived-NEUT SG
b. Vidio sam dvoje djece.
   (I) saw two children-GEN
c. Bojao se dvoje djece.
   (he) was afraid of two children-GEN
d. *Pisao je dvoje djece.
   (he) wrote (to) two children-GEN
e. Pokazao je prema dvoje djece.
   (he) pointed towards two children-GEN

Finally, this group includes the nominative and accusative forms of *two, three and four: dvije, dva, tri, četiri*, as in (52)-(53):\(^{19}\)

(52) a. Dva muškarca / goveda su stigla.
   two man-GEN PAUC/ cattle-GEN PAUC arrived-NEUT PL
b. Djije žene su stigle.
   two woman-GEN PAUC arrived-FEM PL
(53) a. Tri/ četiri muškarca / goveda su stigla.
   three/ four man-GEN PAUC/ cattle-GEN PAUC arrived-N PL
b. Tri/ četiri žene su stigle.
   three/ four woman-GEN PAUC arrived-FEM PL\(^{20}\)

These numerals assign genitive case to their complement and require it to have paucal number (cf. Franks (1994) and fn. 6 above).\(^{21}\)

Like Quantifiers proper they can appear in nominative contexts, as in (52)-(53), accusative, as in (54a), and genitive, as in (54b), but not in dative contexts\(^{22}\), as illustrated by the ungrammatical (54c):

(54) a. Vidio sam dva muškarca / dvije žene.
   (I) saw two man-GEN PAUC/ two woman-GEN PAUC
b. Bojao se dva muškarca / dvije žene.
   (he) was afraid of two man-GEN PA / two woman-GEN PA

c. *Pisao je dva muškarca / dvije žene.
   (he) wrote (to) two man-GEN PAUC / two woman-GEN PAUC

They allow for and actually prefer movement of the modifier of the following noun into the Spec of QP, as in (55b), where the demonstrative ona ‘those’ is moved into the SpecQP. But, differently from the other Quantifiers, they do not allow pronouns like vas ‘you’ in their complement, as in (56), possibly due to the absence of a pronominal form of the pronoun vi:

(55) a. ?Vidio sam dva ona muškarca.
   (I) saw two those-GEN PAUC man-GEN PAUC
   b. Vidio sam dva muškarca.

(56) a. *Dva vas neka dode sutra.24
   two you-GEN let come tomorrow
   b. *Vas dva neka dode sutra.25

The structure we propose for this class of numerals is given in (16), repeated here as (57):

(57)

4.3 Adjectival Numerals

Fully adjectival numerals are:
- ordinals, such as prvi, prva, prvo ‘first-MASC/FEM/NEUT’;
- cardinals, such as jedini, jedne, jedna ‘one-MASC/FEM/NEUT’, dvoji, dvoje, dvoja ‘two-MASC/FEM/NEUT’, etc.,26
- the oblique forms of two, three and four: genitive: dviju-FEM, dvaju-MASC/NEUT, triju, četiriju; dative/ instrumental/ locative: dvijema-FEM, dvama-MASC/NEU, tri- ma, četirma.
These three groups of elements behave like adjectives in all respects.

First of all, they are declinable and they agree with the noun that follows, as in (58a), with the cardinals agreeing with the head noun svatovi ‘wedding procession’; (58b), with the genitive form dvaju in agreement with the genitive form muškaraca ‘men’; and (58c), with the dative form dvama in agreement with the dative form muškarcima:

(58) a. Jedni/ dvoji/ troji/... svatovi su stigli.
    one/ two/ three-NOM M wedding pr.-NOM M arrived-M PL
b. Bojao se dvaju muškaraca.
    (he) was afraid of two-GEN men-GEN
c. Pisao je dvama muškarcima.
    (he) wrote (to) two-DAT men-DAT

They cannot modify a pronoun, as shown in (59b) and (60b):

(59) a. Oni su stigli.
    they-MASC arrived-MASC PL
b. *Jedni oni su stigli.

(60) a. Bojao se njih.
    (he) was afraid of them-GEN PL
b. *Bojao se dvaju njih.27
    (he) was afraid of two-GEN them-GEN PL

Their structure is shown in (61):

(61) DP/KP

Spec

D'/K' NumP

D'/K°

AP Num°

Num'

NP
dvama muškarcima

Notice that in oblique cases such as genitive, as in (62a,b), and complements of prepositions assigning oblique cases, as in
(62c,d), the constructions allowed are two: Quantifiers and Quantity Adjectives.\textsuperscript{28} We find Quantifiers \textit{dva} in (62a) and \textit{dvije} in (62c), whereas Quantity Adjectives are found in (62b) (\textit{dvaju}) and (62d) (\textit{dvijena}): 

\begin{itemize}
\item[(a)] Bojao se dva muškarca.
\item[(b)] Bojao se dvaju muškaraca.
\item[(c)] Razgovarao je sa dvije žene.
\item[(d)] Razgovarao je sa dvijama ženama.
\end{itemize}

5. Conclusions

A unifying analysis is not always the correct one. In this paper we have proposed to divide what are usually called “Quantifiers” into three different classes: Quantity Nouns, Quantifiers, Quantity Adjectives. This tripartition can derive different syntactic phenomena that arise when quantity expressions, including numerals, are present. From the point of view of empirical adequacy, the different behaviour of each of the classes proposed in this paper makes the tripartition necessary and sufficient to account for all the relevant facts.

From the point of view of explanatory adequacy, the loss in categorial economy is apparent only. In fact, the three labels attributed to quantity expressions are unified by the property of being lexical (as opposed to functional) items. In a bare structure perspective, where labels play a lesser role, the three different classes could be reduced to three different merging points in the structure, due to different lexical features attached to the relevant lexical items. Furthermore, we do away with any kind of Case hierarchy and/or the D-structure vs. S-structure distinction of case assignment, which is no longer available in the minimalist program and had empirical problems in accounting for the BCS data, as noticed in the discussion of (9) above.

Quantity adjectives (as in (17) above) are merged in the specifier of a functional head projected by the noun they modify. By Spec-Head agreement with the functional head projected by the head noun, they share all the features of the noun phrase, including
gender, number and case. They can be merged, provided their inflectional paradigm can make these features visible at Spellout.

Quantifiers (as in (16) above) are merged higher than adjectives, on top of the Case projection of the noun phrase (KP). Differently from adjectives, they are merged as heads, sister to the KP. This configuration on the one hand does not allow feature sharing between the quantifier and the noun phrase, and on the other hand blocks case percolation through the quantifier onto the noun phrase. As a consequence, genitive of quantification is the only case available to the noun phrase. Since quantifiers are morphologically defective, they cannot be merged when the quantified noun phrase appears in oblique case assigning contexts.\(^{29}\)

Also, quantity nouns (as in (15) above) are merged as sisters of the genitive noun phrase, exactly as common nouns are merged as sisters of their complements. With respect to blocking Case percolation from above and feature sharing with the quantified noun phrase, this action gives the same effects obtained with the merging of quantifiers. Differently from quantifiers, quantity nouns have fully fledged morphology and project a complete functional structure. They can therefore appear in any Case assigning context and trigger agreement for their own \(\epsilon\)-feature specification on the predicate.

The categorial distinction used throughout the paper can therefore be reduced to different inflectional morphological properties to be listed in the lexicon and to consequent different merging points in the structure. It is a low cost for a general theory which can be extended straightforwardly to the Slavic domain, and to other domains such as Romance languages, as argued for by Cardinaletti and Giusti (1992), and Giusti (1992, 1995), Germanic (cf. Giusti 1990, 1991, 1994), and for a Slavic language which displays the definite article, such as Bulgarian (cf. Dimitrova-Vulchanova and Giusti 1996).

Appendix

So far we have seen that whenever we have a “heterogeneous construction”, namely when genitive is assigned by a quantity expression, the construction can be headed either by a quantifier or by a quantity noun. We have further provided tests in BCS to distinguish between the two cases. For example, the quantity expression is a quantifier when it has poor inflection and, as a consequence, appears in very limited case contexts and triggers neuter
singular agreement with the predicate if in subject position. On
the other hand, the quantity expression is a noun when it has full
inflection and, as a consequence, it appears in all case contexts
and triggers agreement for gender features with the predicate if in
subject position. We have also seen that whenever we encounter a
"homogeneous construction", we are dealing with a quantity ad-
djective. In this case we expect the quantity expression to have its
case and θ-features (namely, gender and number) valued by the
nominal phrase.

Our proposal has been supported by BCS data, but it does
not rely on particular properties of this language, apart from the
categorization(s) of each quantity expression, which, we assume,
must be specified anyhow in the lexicon for each individual ele-
ment in every language.

In a minimalist perspective we assume the Uniformity prin-
ciple (Chomsky 1999).

(63) In the absence of compelling evidence to the contrary, assume lan-
guages to be uniform, with variety restricted to easily detectable
properties of utterances.

We have proposed, on the evidence of BCS data, that the
concept of quantity has no intrinsic categorial status and that the
categories that realize the concept of quantity are at least three:
nouns, adjectives, or quantifiers; the former two are used to re-
realize a wide number of concepts, often very different from each
other, and the latter is more specialized. This implies that we ex-
pect to find cross-linguistic variation as to which specific concep-
tual item is associated with which specific lexical category.

In what follows we check whether our predictions are borne
out in a representative sample of languages, namely Russian,
Ukrainian, Czech, and Polish. Due to reasons of space we can-
not enter into language specific properties whose treatment would
require the length of a monograph. We will limit our survey to a
general overview, excluding numerals and the floating construc-
tion, which display a wide (almost wild) range of variation.

At a certain level of idealization, the languages considered
below behave as expected with respect to the diagnostics pro-
vided in (40). However, we find a few areas of limited variation in
which the diagnostics fail to be relevant. This is hopefully to be
reduced to independent properties of each language with respect to the other(s). Deviation from the diagnostics is primarily found with respect to (a) agreement with the predicate, (b) co-occurrence with a pronoun, or (c) extraction of (part of) the genitive complement. Due to the already mentioned reasons of brevity, we will not get into language specific properties in depth. However, when possible, we attempt to reduce the variation to independently attested phenomena in the language under consideration.

1. Russian

As also noticed in 1.3. above, our treatment of Russian is in many respects in line with Neidle (1988) in rejecting an analysis which captures the differences among Slavic languages with a parameterization of genitive case assignment or the Case hierarchy (cf. Babby (1987) and Franks (1994, 1995)) and favoring instead an approach in which each quantity expression receives a syntactic categorization in the lexicon and is merged as such in the course of the derivation. With Neidle, we assume that some roots can have more than one categorial label, and that they may have a defective paradigm which does not allow them to appear in certain case assigning positions.

Russian partially departs from our expectations built on the BCS evidence discussed in 2-4. above: (a) it marginally allows for semantic agreement of the predicate with quantity nouns and quantifiers, (b) it only marginally allows for pronouns to co-occur in the complement of quantity nouns and quantifiers. These two properties are simply neutral with respect to our hypothesis, in that the syntax of agreement and of (weak) pronouns notoriously displays a certain degree of variation in Slavic. More problematic for our hypothesis are (c) the possibility for a pronoun to cooccur with a quantity adjective and (d) the possibility for a demonstrative to precede a quantifier, agreeing only for gender and number features with the complement noun phrase and agreeing for Case with the quantifier.

1.1. Quantity nouns in Russian

Russian quantity expressions such as tysjača ‘thousand’,
milion ‘million’, bol’sinstvo ‘majority’, most ‘many’, množestvo ‘a great many’, njar ‘a number’, čast ‘a part of’ behave as quan-
tity nouns. They have full nominal declension (e.g. bol’šinstvo
(NOM/ACC), bol’šinstva (GEN), bol’šinstvu (DAT), bol’šistve
(LOC), bol’šinstvom (INST)), and assign genitive case to the fol-
lowing noun phrase, regardless of the case context in which the
quantified phrase is used, as shown in (64):

(64) a. Bol’šinstvo pisem dostavleno.
majority-NOM letters-GEN PL (was) delivered-NEUT SG
‘Most letters have been delivered.’

b. On ne soglasen s bol’šinstvom svoix druzej.
his-GEN friends-GEN
‘He does not agree with the majority of his friends.’

In addition to selecting a full noun phrase as their comple-
ment, quantity nouns may also select a pronoun, as in (65a), or a
partitive prepositional phrase, as in (65b):

(65) a. ?On videl bol’šinstvo
he saw majority-ACC (of) them-GEN PL

b. On videl bol’šinstvo iz
he saw majority from/ of/ among them-GEN PL

Native speakers prefer (65b) to (65a). The reason for this re-
sides on independent properties of (weak) pronouns in Russian
and is more clearly found with quantifiers (cf. (71b) vs. (72b)
below). In any case, (65a) must be contrasted with (69b) below
which shows that pronouns moved to the left of the quantity noun
produce a higher level of unacceptability than with quantifiers, as
predicted by our diagnostics.

Quantity nouns can be of any gender, such as feminine
tysjača, čast’, masculine million, rjad, and neuter bol’šinstvo,
množestvo. If they are in subject position, the predicate usually
agrees with the quantity noun in gender and number, as in (66a).
For most speakers non-neuter nouns are incompatible with neuter
agreement, as in (66b).33 And only some speakers marginally ac-
cept “semantic agreement” as in (66c):34

(66) a. Tysjača. soldat ubežala v Germaniju
thousand-F soldiers-GEN M PL escaped-F SG to Germany

b. * Tysjača soldat ubežalo v Germ.
thousand-F soldiers-GEN M PL escaped-N SG to Germ.
Quantity nouns can co-occur with an agreeing demonstrative, as in (67) with the nominative form of the demonstrative 
\( \text{èta/ò that} \)\(^{35} \)

(67) a. èta tysjača soldat/ èta čast’ soldat 
    this-F thousand-F soldiers-GEN PL/ that-F part-F soldiers

b. èto količestvo muki/ èto čislo 
    that-N quantity-N flour-GEN SG/ that-N number-N chairs-PL

They cannot be preceded by a genitive determiner (which agrees with the following genitive complement), cf. (68a) vs. 
(68b). Neither can the genitive complement be preposed to the 
quantity noun as in (69a), even if that complement is a pronoun 
as in (69b):

(68) a. bol’šinstvo ètix studentov 
    majority (of) these-GEN students-GEN

b. *ètix bol’šinstvo studentov

(69) a. *ètix studentov bol’šinstvo 

b. ?/*ètx bol’šinstvo\(^{36} \)

However, the ungrammaticality of (68b) with quantity nouns 
is irrelevant to our proposal, since it does not contrast with the 
parallel structures with quantifiers, as in (75c) below.

1.2. Quantifiers in Russian

In Russian, some lexical items are exclusively quantifiers, 
and do not have adjectival counterparts, e.g. malo ‘little, few’. 
Such quantifiers select a genitive complement and can only appear 
in direct case contexts, as in (70a), and never in oblique cases, 
as in (70b,c) with locative and instrumental case contexts, re-
respectively:

(70) a. U nego malo deneg. 
    with him little money-GEN PL 
    ‘He has little money.’

b. *v malo slučajax / slučaev 
    in few cases-LOC PL/ cases-GEN PL
c. *s malo mukoj / muki
with little flour-INSTR / flour-GEN

In contrast to most other Slavic languages, Russian quantifiers can only marginally co-occur with a pronoun, as in (71b):

(71) a. Ja videl mnogo studentov.
I saw many students-GEN PL
b. ??Ja videl/ vidal mnogo ix/ vas. ³⁷
I saw/ have seen many them/ you-GEN PL

This is due to the same independent syntactic and/or semantic properties of (weak) pronouns in this language.³⁸ Notice, however that some speakers prefer (72) where the pronoun precedes the quantifier. The prepositional partitive is always the unmarked choice:

(72) a. ?Ja vidal ix mnogo
I have seen them many
b. Ja vidal mnogo iz nix
I have seen many of them

Quantifiers trigger neuter singular agreement on the predicate, as in (73a). It is well-known that in Russian, quantifiers can also trigger semantic agreement, as in (73b):³⁹

(73) a. Mnogo/malo soldat ubežalo v Germaniju.
many/few soldiers-GEN PL escaped-N SG to Germany
b. Mnogo/malo soldat ubežali v Germaniju.
many/few soldiers-GEN PL escaped-M PL to Germany

Quantifiers do not agree with the following noun phrase: in (74a) we find the genitive form mesjacev ‘months’ following nominative neskol’ko ‘several’, whereas (74b) with nominative mesjacy is ungrammatical:

(74) a. neskol’ko / mesjacev nazad
some/ a few-NOM months-GEN PL ago
b. *neskol’ko / mesjacy nazad
some/ a few-NOM months-NOM PL ago
Contrary to quantity nouns in (67), quantifiers do not co-occur with an agreeing (neuter) demonstrative, so that (75a) is unacceptable. In this respect Russian is parallel to BCS (compare (21b)); and as in BCS (compare (25b)), the demonstrative must always agree with the following noun, as in (75b). However, the genitive demonstrative in Russian cannot raise to SpecQP, so that (75c) is unacceptable, in contrast to BCS, where raising is allowed (compare (26b)).

(75) a. *èto mnogo studentov
demonstrative-mnogo students-GEN PL

b. mnogo ètix studentov
demonstrative-mnogo students-GEN PL

c. *ètix mnogo studentov

demonstrative-mnogo students-GEN PL

Still differently from BCS, a demonstrative preceding a quantifier displays only φ-features, but not case features, of the lexical noun, having nominative case instead of expected genitive. In this case the whole QP inherits the φ-features of the noun phrase to be valued on the predicate, as in (76a), and only semantic agreement is possible. Notice that this process is only allowed by numerals and not by other quantifiers:

(76) a. [te [pijati [te [cëlovek]]] prišli/** prišlo

b. [pijati [tex cëlovek]] prišlo/ prišli

c. *èti mnogo studentov

demonstrative-mnogo students-GEN PL

We tentatively analyse the QP in (76a) as derived from (76b), following Corbett (1979). In the former the demonstrative is merged inside the DP and checks its EPP features of number and gender in SpecDP. Then it is deleted and further merged in SpecQP. If DP is a phase independent from QP, we expect the demonstrative to be able to escape its phase, which is spelled out as genitive, because it is in its edge. After the second merging, the demonstrative can check its EPP feature of Case with the quantifier which is assigned Nominative.

1.3. Quantity adjectives in Russian

An example of clear distinction between quantity adjectives and quantifiers in Russian is the conceptual item for ‘many’. In
Russian, the simple phrase ‘many students’ may be expressed in the two ways in (77):

(77) a. Mnogie studenty prišli.
    many students-NOM MASC PL arrived-PL

b. Mnogo studentov prišlo/i
    many students-GEN MASC PL arrived-NEU SG/ PL

*Mnogie* in (77a) is clearly an adjectival form agreeing in nominative case with the following noun, whereas *mnogo* in (77b) is a quantifier assigning genitive case to its complement. Quantity adjectives such as *mnogie* in (77a) display the same features as the predicate, which in turn agrees with the subject noun phrase.

In oblique cases *mnogo* cannot be used, the adjectival oblique forms of the quantity adjective *mnogie* are used instead, as in (78) with the dative form *mnogimi* in agreement with the dative case of the head noun *ëkspertam*:

(78) a. *soglasno* mnogo ëkspertov/ ëkspertam
    according (to) many experts-GEN PL/ DAT PL

b. soglasno mnogim ëkspertam/ *ëkspertov
    according (to) many-DAT experts-DAT PL/ GEN PL

As is well known, the adjectival forms cannot occur in the heterogeneous construction, as in (79a), and the uninflected form does not let the nominative case percolate down onto its complement, as in (79b):

(79) a. *mnogie studentov
    many students-GEN PL

b. *mnogo studenty
    many students-NOM PL

In addition to *mnogie*, fully adjectival quantity expressions, having full declension, are *odin* ‘one’ and *nekotoryj* ‘certain’, as in (80a). On the contrary, the adjective corresponding to *neskol’ko* ‘some, several’ does not display direct case morphology:

(80) a. nekotorye studenty/ studentki/ okna
    certain-NOM PL students-NOM M PL/ F/ windows-NOM N PL

b. *neskol’ko studenty/ studentki/ okna
    certain-NOM PL students-NOM M PL/ F/ windows-NOM N PL
This adjective only displays oblique case morphology (neskol’kix-GEN/LOC, neskol’kim-DAT, neskol’kimi-INST):

(81) a. v neskol’kix mestax
     in some-LOC places-LOC PL
b. On napisal neskol’kim devuškam.
   he wrote (to)  several-DAT girls-DAT
c. On ispugalsja neskol’kix devušek.
   he feared      several-GEN girls-GEN

Quantity adjectives cannot co-occur with a pronoun, so that (82b) with the pronoun ix ‘them’ following mnogie ‘many’ is ungrammatical. Mnogie can itself be a pronoun and co-occur with a prepositional partitive, as in (82c):

(82) a. Ja videl mnogie stoly.
     I saw    many tables-ACC PL
b. *Ja videl mnogie ix.
     I saw    many-ACC=NOM PL them-ACC =GEN PL
c. Ja videl mnogie iz nix.

Notice that for inanimate, the accusative adjectival form is homomorphic to the nominative, but the corresponding personal pronoun is homomorphic with the genitive, parallel to what happens with animate nouns. For (82b) to be supportive of our proposal, we must ensure that its unacceptability is not due to a mismatch of features between mnogie and ix. Let us compare it with the case of an animate referent, as in (83). The pronoun ix cannot follow, but only precede the animate genitive=accusative form mnogix, as in (83b-c):

(83) a. Ja videl mnogix studentov
     I saw    many students-ACC PL
b. *Ja videl mnogix ix.
     I saw    many-ACC=NOM PL them-ACC =GEN PL
c. %Ja videl ix mnogix.

Example (83b) supports our proposal to analyse homogeneous constructions as DPs with the quantity expression realized by an AP. However, we expect to find the pronoun at neither side of a quantity adjective. This is true for some speakers. However, some others accept (83c). Let us assume that mnogix in (83c) is
not an adjective, but a quantifier. Then, the question arises as to what triggers the oblique morphology on it.

We propose that merging the pronoun in SpecQP triggers the agreement features on the quantifier, parallel to what happens in Hebrew (as proposed by Shlonsky (1991) and extended to German by Giusti (1995) and to Bulgarian in Dimitrova-Vulchanova and Giusti (1996)) and reported here in (84) respectively:

(84) a. kol ha ycladim vs. ha yladim kulam (Shlonsky (1991))
    all the boys the boys all-AGR
b. all die Kinder die Kinder alle (Giusti (1995))
    all the children the children all-AGR
c. vsički- (te) knigi knigi- (te) (D.-Vul. / Giusti (1996))
    all (the) books books-the all-the

Russian mnogo would therefore display full quantifier behaviour by allowing its complement to merge in SpecQP provided that it triggers agreement with it, as is the case for the quantifiers in (83). This also explains the unacceptability of (83b), where the pronoun has not merged into SpecQP.

The prediction is that an agreeing quantifier can co-occur with a pronoun provided that the pronoun precedes it, regardless of case positions. In fact, once the pronoun in SpecQP checks the EPP features of the quantifier for gender, number and Case, the QP satisfies the requirements of nominal expressions in oblique case-assigning contexts. This prediction is borne out: In (85a) we see the case of a quantity adjective which cannot modify a pronoun. In (85b) the quantity adjective can function as a pronoun and can co-occur with a partitive PP. In (85c) we see the case of a QP selecting a pronoun as its complement and further merging it in SpecQP, where the pronoun can share its features with the quantifier and at the same time can check its Case features as the edge of the complement of the dative assigning preposition k (‘to’).

(85) a. *Oni zvonili k [DP [AP mnogim] nam ]
   c. Oni zvonili k [QP [DP nam] [Q [QP AGR mnogim] [DP nam]]]

“They phoned to many of us”

Finally, quantity adjectives co-occur with an agreeing determiner. The determiner can either precede or follow the quantifier, as in (86) with the nominative form of the determiner eti ‘those’.
The fact that the determiner can precede the quantifier reinforces our hypothesis that the quantifier is adjectival.\textsuperscript{43}

(86)a. ėti nemnogie bogatye russkie bjurokraty prišli
these few rich Russian bureaucrats arrived

b. Ja napisal ėtim nemnogim bogatym russkim bjurokratam
I wrote [to] [these few rich Russian bureaucrats]-DAT PL

5.1.4. Conclusions

We have observed that in Russian some apparent counterexamples can be reduced to independent properties of the language:

a) “Semantic agreement” with quantifiers or neuter agreement with quantity nouns is a matter of idiolectal variation in Russian and should be treated as an independent property of this language.

b) Russian weak pronouns can only marginally appear in argument positions, which obscures some diagnostics built on the co-occurrence of pronouns and quantity expressions in this language. In some speakers this latter property forces the pronoun to move to SpecQP when possible, triggering agreement features on the quantifier.

c) SpecQP cannot host a demonstrative which has checked its case features inside the DP-phase, but it can keep the \(\phi\)-features of the DP and further check Case features in QP. This possibility only exists with numerals and not with quantifiers; and it is not found in any of the other languages under consideration.\textsuperscript{44}

5.2. Ukrainian\textsuperscript{45}

5.2.1. Quantity nouns in Ukrainian

Quantity expressions such as bil’\'ist' ‘majority’, menšist’ ‘minority’, kil’kist’ ‘quantity’, čyslo ‘number’, syl a ‘a large number’, bežlič ‘a large number’ behave as quantity nouns and always select a genitive complement, as in (87) with bil’\'ist' ‘majority’ taking the genitive complement moix prijateliv ‘my friends’. Quantity nouns in Ukrainian trigger agreement with the predicate:

(87) Bil’\'ist’ mojix prijateliv spivala/ *spivalo / *spivaly majority-F my-GEN PL friends-GEN PL sang-F SG/ N SG/ M PL ‘The majority of my friends sang.’
Parallel to the other Slavic languages under consideration here, Ukrainian quantity nouns may select a pronoun as their complement, preferably following it, as in (88a). But contrary to the other Slavic languages seen here, the Ukrainian pronoun can be marginally moved to the SpecDP of the quantity noun, as in (88b), and (from there) be extracted out of the quantity DP when it is topicalized, as in (88c).\footnote{\textsuperscript{46}}

(88) a. bil’šist’
    vas/ jix
    majority-NOM FEM you/ them-GEN PL
b. ?vas/ jix bil’šist’
c. VAS pryjšla bil’šist’, JIX pryjšla menšist’
of YOU came the majority, of THEM came the minority

In (88b-c) the quantity noun displays a behaviour that we have attributed to quantifiers. Although extraction out of DPs is not universally excluded, and could therefore be studied as a property of Ukrainian DP as opposed to other Slavic languages, we see here, as well as in other cases, some reason to suppose that for some Ukrainian speakers the categorial distinction between quantity nouns and quantifiers is not quite clear-cut.

As expected, quantity nouns co-occur with an agreeing demonstrative, as in (89):

(89) a. cja/ta  kil’kist’  borošna/ stil’civ
    this/that-F SG quantity-F SG flour-GEN N SG/ chairs-GEN M PL
b. ce/to  čislo  stil’civ
    this/that-N SG number-N SG (of) chairs-GEN M PL

The genitive determiner modifying the complement of a quantity noun in (90a) can precede the quantity noun as in (90b), but only for some speakers:

(90) a. bil’šist’  cyx  studentiv
    majority  these-GEN  students-GEN
b. % cyx  bil’šist’  studentiv

We propose that those speakers that judge (88b) and (90b) as grammatical treat quantity nouns as quantifiers. We will turn to this idea shortly below.
5.2.2. Quantifiers in Ukrainian

Quantifiers like kil’ka ‘several’, bahato ‘much, many’ assign genitive to the following noun phrase and trigger neuter singular agreement features on the predicate, as in (91):

(91) Kil’ka mužčyn/ žinok spalo/ *spaly.
    several men-GEN M PL/ women-GEN F PL slept-N SG/ slept-PL

Parallel to BCS, quantifiers in Ukrainian may select a pronoun, as in (92). The pronoun can marginally precede the quantifier:

(92) a. bahato vas/ jix
    many you-GEN/ them-GEN

b. ? vas/jix bahato

In this respect, quantity nouns and quantifiers are not different from each other in Ukrainian (cf. (92b) and (88b) above).

Quantifiers cooccur with a genitive demonstrative which agrees with the following noun phrase, as in (93). The genitive demonstrative may either precede or follow the quantifier. The quantifier may also co-occur with a neuter demonstrative, but it is marginally acceptable, as in (93c):

(93) a. bahato cyx studentiv
    many these-GEN PL students-GEN PL

b. cyx bahato stil’civ
    these-GEN PL many chairs-GEN PL

c. %To bahato studentiv pryjšlo do mene.
    this-NOM many-NOM students-GEN PL came-N SG to me

We take these speakers to treat bahato like a neuter quantity noun, while those that judge (93c) as ungrammatical treat it as a quantifier.

Bahato and kil’ka can only appear in direct case contexts. They have adjectival forms in oblique cases and agree with the noun. Other quantity expressions only have quantifier forms: malo ‘a little’, troxy ‘few’. These cannot be used in oblique contexts, as in (94a), and in such a context only a declinable quantity adjective, like kil’ka ‘a number (of)’ (94b), is used:

(94) a. cyx/ malo
    these-GEN Pl/ a little

b. cyx/ troxy
    these-GEN Pl/ few
(94) a. *z malo(ma) ljudɛʃ/ ljud’my
with few(INST) people-GEN/ INST
b. z kil’koma ljud’my
with a number of(INST) people-INST

For some speakers (at least), bahato has the GEN/ACC inflection, still behaving as a quantifier:

(95) VAS znaju bahato/ bahat’ox a JIX znaju malo
you-GEN/ACC I know many-GEN/ACC but THEM I know few

5.2.3. Quantity adjectives in Ukrainian

In addition to numerals, other quantified expressions also have adjectival forms in oblique cases and agree with the head noun:

(96) a. Bojavsja kil’kox divčat.
(he) feared several-GEN girls-GEN PL
b. Pysav kil’kom divčatam.
(he) wrote (to) several-DAT girls-DAT PL
c. Bojavsja bahat’ox studenťiv.
(he) feared many-GEN students-GEN PL

However, they do not have adjectival forms in direct cases; in such a context, they behave as quantifiers and select a genitive noun, as seen in the previous section.

5.3. Czech

Heterogeneous and homogeneous constructions have been studied in Czech by Veselovská (1995:ch 8), Šafářová (1998) and most recently Veselovská (2001) This latter work revives the Case hierarchy requiring that different items be inserted at different times in the derivation. This presents the two major problems observed in section 1 above. Our proposal is confirmed by Czech data in all respects, with minor adjustments with respect to the relevant tests.

5.3.1. Quantity nouns in Czech

Quantity expressions like většina ‘majority’, tucet ‘dozen’, množství ‘quantity’, počet ‘number’, pár ‘a few’, hruška ‘a (mere)
handful’, *hromada* ‘heaps’, *spousta* ‘lots’, *trocha* ‘a little’ behave as nouns and select a genitive complement. Quantity nouns have rich inflection (e.g., *většina*-NOM; *většiny*-GEN; *většine*-DAT/LOC; *věšinu*-ACC; *věšinou*-INST) and, like any other noun, may appear in oblique contexts, as in (97):

(97) a. Vytačili si s trochu mouky.
   (they) pleased themselves with a little GEN flour-GEN
   ‘They made do with a little flour.’

   b. Udělali z trochy mouky knedlíky.
   (they) made of a little-GEN flour-GEN dumplings
   ‘They made dumplings out of a little flour.’

The predicate agrees in phi-features with the quantity nouns, as in (98):

(98) a. Většina mých přátel přišla.
   majority-F SG my-GEN friends-M GEN came-F SG
   ‘The majority of my friends arrived.’

   b. Tucet mých přátel přišel.
   dozen-MASC SG my-GEN friends-GEN came-MASC SG
   ‘A dozen of my friends came.’

Quantity nouns may also select a pronoun as their complement, as in (99a) where the pronoun *vás* ‘you’ follows *většina* ‘majority’. The pronoun can be preposed, as in (99b):

(99) a. většina vás přišla
   majority-NOM FEM you-GEN came-FEM SG

   b. (přišla) vás (přišla) většina

The cooccurrence with a pronoun distinguishes quantity nouns and quantifiers in Czech in a different way from BCS. Pronouns can appear immediately following a quantity noun but not a quantifier. As will be clear later, there are reasons to believe that this fact is not due to the selectional properties of the two quantity expressions, but to their morpho-phonological properties.49

Quantity nouns co-occur with an agreeing demonstrative, as in (100), and cannot be preceded by a genitive determiner which agrees with the following genitive noun phrase, as in (101):

(100) a. to množství mouky
      this-NEUT SG quantity-NEUT SG flour-FEM SG
      ‘this quantity of flour’
b. ten počet židle
that-MASC SG number-MASC SG chairs-FEM PL
‘that number of chairs’
c. ta většina studentů/ židle
that majority of students/ chairs
(101) a. *těch většina studentů
these-GEN majority students-GEN
‘the majority of these students’
b. většina těch studentů
majority these-GEN students-GEN
(102) Několik/mnoho mých přátel přišlo/ *přišli.
several/ many my-GEN friends-GEN came-NEUT SG/ PL
‘Several/ many of my friends came.’

Quantifiers may merge with a pronoun. However, the pronoun cannot remain in its basic position. In (103) the pronoun must appear in the clitic cluster, following the clitic auxiliary jsem:

(ʃ) saw AUX many/ several (of) you-GEN/ them-GEN PL CL
b. Viděl jsem vás/ jich mnoho/ několik.

Parallel to BCS, quantifiers can be either followed or preceded by a genitive demonstrative which agrees with the following noun phrase, as in (104a-b). Example (104c), with the demonstrative agreeing for the nominative neuter singular features of the quantifier, is ungrammatical:

This clearly distinguishes quantity nouns from quantifiers in (104) below.
(104) a. mnoho těch studentů
   many these-GEN students-GEN
   ‘many of these students’

b. těch mnoho studentů
   these-GEN many students-GEN

c. *to mnoho studentů
   this-NEUT many students-GEN

Czech presents the interesting case of a quantifier that has some declension. The quantifier málo has a declined -a form, which is used exclusively in genitive contexts, as in (105a). The undeclined form can be used in other oblique cases, as in (105b) where we find it in instrumental case:

(105) a. jeden z mála žáků
   one of few-GEN pupil-GEN PL

b. s málo žáky
   with few-INST pupil-INST PL

Nothing in what we have proposed predicts that in some cases a quantifier cannot appear in oblique case provided that its poor morphology is sufficient to make the case visible in a given language. For example, we have proposed for Russian (83) above that quantifiers agree for all the features of its pronominal complement when it is moved to SpecQP. The case of málo reinforces our proposal to consider quantifiers different from quantity adjectives, showing that it is not the property of the oblique case assigning context per se to exclude the surfacing of genitive on the noun, but the inflectional properties of quantifiers.

5.3.3. Quantity adjectives in Czech

Quantity adjectives agree with the following noun phrase, whereas the predicate agrees with the noun head of the phrase containing the quantity adjective, as in (106):

(106) a. Mnozí studenti šli.
   many-NOM MASC PL students-NOM MASC PL went-MASC PL
   ‘Many students went.’

b. Mnohé studentky šly
   many-NOM FEM PL students-NOM FEM PL went-FEM PL
   ‘Many (female) students went.’
Quantity adjectives may not select a genitive complement in (107a), but they can co-occur with a partitive PP, as in (107b):

(107) a. * množí těch studentů
    many-NOM MASC these-GEN students-GEN
b. množí z těch studentů
    many-NOM MASC of/among these-GEN students-GEN

We analyse množi in (107b) as a pronominal adjective. Its structure is presumably that of a full DP with an empty NP: [DP [λAP množi] [...[NP e]]]]. This will be relevant to the next discussion.

As expected, a pronoun cannot follow the quantity adjective, as in (108a). However, this is not really telling, since the co-occurrence with a following pronoun was not possible even for quantifiers. Furthermore, a pronoun is allowed with the quantity adjective in discontinuous position, as in (108b):

    many-NOM MASC PL they-NOM MASC went-MASC PL
b. Oni šli množi

Example (108b) is prima facie problematic for our hypothesis. In our framework, there are two possible ways to treat (108b). On the one hand, we could claim that the quantity expression in (108) is a quantifier, the φ-features of the pronoun being due to the fact that the pronoun must merge in SpecQP before moving out of it, parallel to what we claim for Russian (83). Such an account, however, could not explain why in a parallel situation the quantifier does not agree with the pronoun in Czech (103). We therefore stick to an analysis of množi in (108) as a quantity adjective in both cases. We reduce the unacceptability of (108a) to the general impossibility for adjectives to select full DP complements. To explain why (108b) is acceptable with the quantity adjective in discontinuous position, we have recourse to the previously noticed general property of quantity adjectives to appear in an elliptic DP. This allows them to appear as predicates, as also
noticed by Veselovská (2001). The quantity adjective is a secondary predicate in (108b), as well as in (109a):

(109) a. Vy jste (mnozí) přišli.
      AUX-2nd PL (many-MASC PL) came-MASC PL
b. Mnozí jste přišli.
c. * Mnozí vy jste přišli.
d. * Vy mnozí jste přišli.

In (109) the quantity adjective never forms a constituent with the pronoun, cf. (109c-d). But it can function as a full DP in (109b) or as a secondary predicate in (109a).

The quantity adjective can have the function of a full DP in object position or of a predicate modifying a pronoun in object position. We propose that in (110) the clitic je ‘them’ is only apparently optional. In (110a) the pronoun is the argument of the predicate and the quantity adjective is a secondary predicate, while in (110b) the internal argument of the predicate is the DP where the quantity adjective is the only lexically realized element:

(110) a. Viděl jsem je mnohé.
      (I) saw ACC PL them-ACC PL CL many-ACC PL
b. Viděl jsem mnohé.

Finally, when the quantity adjective cooccurs with a demonstrative it can either precede or follow it:

(111) a. mnozí ti studenti
      many-NOM MASC these-NOM MASC students-NOM MASC
b. ti mnozí studenti
      these-NOM MASC many-NOM MASC students-NOM MASC

5.4. Polish

5.4.1. Quantity nouns in Polish

Quantity expressions like większość ‘majority’, ilość ‘quantity’, liczba ‘number’ behave as feminine nouns and select a genitive complement. Quantity nouns trigger agreement features on the predicate, but neuter agreement is also possible:

(112) Większość moich przyjaciół śpiewała/ śpiewało/ *śpiewały
      majority-F SG my-GEN friends-GEN PL sang-F SG/ N SG / PL
      ‘The majority of my friends sang.’
Quantity nouns may select a pronoun as their complement, as in (113) with the pronoun was ‘you’ as the complement of *wielkość ‘majority’. The pronominal complement must follow the quantity noun, as expected:

(113) a. Większość was śpiewała.
    majority-NOM FEM you-GEN sang-FEM SG
b. *Was większa śpiewała.

Quantity nouns co-occur with an agreeing demonstrative, as in (114):

(114) a. ta ilość masła
    this-FEM SG quantity-FEM SG butter-NEUT SG GEN
    ‘this quantity of butter’
b. tamta liczba krzesiel
    that-FEM SG number-FEM SG chairs-NEUT PL GEN
    ‘that number of chairs’

Quantity nouns cannot be preceded by a genitive determiner which agrees with the following genitive complement, as in (115a):

(115) a. *tuch większa studentów
    these-GEN majority students-GEN
b. większa tuch studentów
    majority these-GEN students-GEN PL
    ‘the majority of these students’

Apart from the possibility of cooccurring with a predicate agreeing with neuter features not present on the subject quantity noun, Polish quantity nouns behave as expected by our diagnostics.

5.4.2. Quantifiers in Polish

Quantity expressions like kilka ‘several’, wiele ‘many’, parę ‘a few’, malo ‘little’ behave as quantifiers and select a genitive complement. Quantifiers only trigger neuter singular agreement features on the predicate, as in (116):

(116) Kilku moich przyjaciół śpiewało.
    several my-GEN friends-GEN PL sang-NEUT SG/ PL
    ‘Several of my friends sang.’
Quantifiers may also select a pronoun as their complement, as in (117). The preposed position of the pronoun is allowed if the pronoun is stressed:

(117) a. Wielu was śpiewało.
    many you-GEN sang-NEUT SG
b. Was wielu śpiewało.

Quantifiers co-occur with a genitive demonstrative which may marginally precede it, as in (118b):

(118) a. wielu tych studentów/
    many these-GEN students-GEN PL/
    ‘many of these students’
wiele tych
    many these-GEN PL chairs-GEN PL
    ‘many of these chairs’
b. ? tych wielu studentów/
    these-GEN many students-GEN PL/
    ?tych wielu krzesel
    these-GEN PL many chairs-GEN PL

Demonstrative movement to SpecQP is perfectly acceptable usage with numerals from five onwards. The possibility for the demonstrative to check its case features after merging to SpecQP is also possible, as in (119a) (reported from Rothstein (1993:748)). Notice that it is marginally possible to have agreement for nominative features on the demonstrative in (119b), parallel to Russian (76a) above. Different, however, is the agreement on the predicate:

(119) a. Tych pięć nowych studentek było obecnych.
    those-GEN PL five new s.-GEN F PL were-N present-GEN PL
b. ??Te pięć nowych studentek było obecnych
    those-NOM PL five new s.-GEN F PL were-N present-GEN PL

In both examples, the verbal agreement is neuter singular, showing that the head of the construction is always the numeral quantifier.

Non-numeral quantifiers cannot co-occur with nominative forms of the preceding demonstratives, as in (120a,b), nor with a neuter demonstrative allegedly agreeing with it (120c):
5.4.3. Quantity adjectives in Polish

Quantity adjectives agree with the following noun phrase and trivially agree with the predicate, as in (121):

\[(121)\]
\[
a. \text{Liczní studenci} \quad \text{szli.} \\
many-NOM M PL students-NOM M PL went-M PL \\
'Many students went.' \\
b. \text{Liczní studentki} \quad \text{szły.} \\
many-NOM FEM PL students-NOM FEM PL went-F EM PL \\
'Many (female) students went.' \\
c. \text{Liczné dzieci} \quad \text{szły.} \\
may-NOM N PL children-NOM N PL went-NEUT PL \\
'Many children went.'
\]

As expected, quantity adjectives cannot modify a pronoun, contrary to quantifiers in (117) above:

\[(122)\]
\[
a. \text{*Liczní oni} \quad \text{szli.} \\
many-NOM MASC PL they-NOM MASC went-MASC PL \\
b. \text{Oni liczni szli.}
\]

Quantity adjectives co-occur with an agreeing determiner. It is interesting to notice that the grammatical order is Demonstrative > Quantity adjective, as in (123a), to be contrasted with the ungrammatical order Quantity adjective > Demonstrative, as in (123b):

\[(123)\]
\[
a. \text{ci liczni studenci} \\
these-NOM M PL many-NOM M PL students-NOM MASC \\
b. \text{liczni ci studenci} \\
may-NOM M PL these-NOM M PL students-NOM M
\]

Quantity adjectives have rich inflection. It should be pointed out that the quantifiers 
\text{wiele} ‘many’ and \text{kilka} ‘several’ behave as adjectives in oblique cases, as in (124) where they appear in instrumental context:
Examples (124b-c) show the same effect we have noticed for Russian in (85a, c) above, in which a pronoun cannot appear in a homogeneous construction following a quantity adjective. The possibility, which is marginal in Polish, for a pronoun to appear preceding the quantity expression in oblique contexts is due to an analysis of the construction as a QP selecting a pronoun which moves to SpecQP thereby triggering agreement for case and φ-features with the head Q.

Notes

1 We are grateful to many colleagues who helped us in the preparation of this paper. The paper is dedicated to Prof. Midhat Rđanović, who was the first linguistics teacher of one of the authors (N. L.)
3 Throughout the paper we will use Jakobson’s (1958) terminology distinguishing between direct (nominative, and accusative) and oblique (all other) cases.
4 Notice that in heterogeneous constructions the noun phrases following the numerals “two”, “three”, and “four” must be singular, as in (1a), whereas those following higher numerals are plural, as in (1b). We will claim that the forms following numerals “two”, “three”, and “four” should be treated not as singular, but as dual/paucal. The proof for this claim will be given later (see footnote 6).
5 An additional relevant point with respect to Pesetsky’s analysis is that QPs can be subjects even of transitive verbs (assuming his diagnostic that the verb form ends in -o), as in (i):
   (i) neskol’ko studentov pročitalo etu knigu.
   several students-GEN PL read-NEUT SG this book-ACC
6 The form of the noun, which looks like genitive singular, is not a singular, but rather paucal form (cf. fn. t. 2 above). The numerals two, three and four assign what can be called genitive paucal (cf. Franks (1994)). BCS used to have three grammatical numbers - singular, dual and plural. Dual was lost in the development of the language, but the remnants survive in contexts with numerals two, three and four. Both in Russian and BCS, masculine and neuter nouns that follow numerals ‘two’, ‘three’ and ‘four’ have a form ending in -a, a genitive singular ending. However, it only appears to be a genitive singular form, because when an adjective modifies such a noun, it has a form which is certainly not genitive singular, as obvious from the following examples:
Franks (1998) modifies his previous proposal in the sense that QPs, that is quantified phrases, are allowed in all case contexts in Serbo-Croatian: "(28c) QPs are licensed in all case DPs in Serbo-Croatian" (p. 152). But then he points out that this statement “is not quite a correct characterization of the distribution of QPs in SC in that there seem to be other factors that inhibit its full application” (p. 153). And then he says that “careful consideration of other instrumental contexts – in particular, verbs that require instrumental complements and bare (adjunct) instrumentals – strongly suggest that QPs never really appear inside instrumental KPs in SC. If so, the "all case" tolerance of (28c) should be slightly amended, at least to exclude instrumental, and possibly also (some instances of) dative” (p. 154). Franks (1998: 154) also claims that some speakers accept QPs after verbs that require a dative complement, but he illustrates this claim with a wrong example, a verb that in addition to assigning dative, also assigns accusative, as in (i). Clearly, those speakers who accept (i) interpret the verb as the accusative assigning verb, and those who don’t accept this example interpret the verb as the dative assigning verb.

(i) */? Jovan je pomagao pet ljudi.
    Jovan aux-3SG helped five people-GEN
    If the numeral is excluded, this sentence may appear in two forms:

(ii) Jovan je pomagao ljudima.
    Jovan aux-3SG helped people-DAT PL
    ‘Ivan was helping to people.’

(iii) Jovan je pomagao ljude.
    Jovan aux-3SG helped people-ACC PL
    ‘Ivan was helping people.’

So, speakers who accept (i) interpret it as a quantified accusative phrase, parallel to (iii), and not as a quantified dative phrase, parallel to (ii). Franks illustrated his claim with a wrong verb, because there is no exclusively dative assigning verb which would tolerate a quantified phrase as its complement. BCS has an ersatz form for the instrumental required by a verb, which adds the preposition s/ sa ‘with’. So, even though one would not say (i) with the numeral ‘one’, s/ sa is added when higher numerals than ‘one’ are used, as in (ii) and (iii):

(i) (?) Ivan upravlja s jednom fabrikom.
(ii) Ivan upravlja sa tri fabrike.
(iii) Ivan upravlja sa pet fabrika.

Since in the ungrammatical (10b) there is no morphological ending to indicate that instrumental is assigned, the structure can be saved by inserting the instrumental assigning preposition sa ‘with’, which serves as a replacement for the case ending, and a flag which indicates that the phrase following sa must be the instrumental phrase. However, if the numeral is not used, then the noun would appear with the instrumental ending (fabrikama), as in
(iv) and (v) would no longer be acceptable, since the preposition sa is used to indicate company (vi):

(iv) Ivan upravlja fabrikama.
(v) *Ivan upravlja sa fabrikama.
(vi) Ivan šeta sa studentima.

Ivan walks (together) with students-INST PL

(vii) *Ivan šeta studentima.

Contrast (vi) with an example in which the same verb (šetati) is followed by a noun which cannot indicate company:

(viii) Ivan šeta obalom.

Ivan walks (along) bank-INST SG (of the river).

(ix) *Ivan šeta sa obalom.

On this, cf. also Giusti 2001.

9 This latter assumption is not crucial for our proposal here.

10 The label DP/KP metaphorically unifies the highest nominal functional projection in languages with articles (supposed to be in D) with languages that do not have articles but have case, like BCS and most other Slavic languages. We assume that, at an abstract level of representation, the article or case morphology on the noun is one and the same category. Toman (1994) discusses the possibility of analyzing case as the functional head of the nominal group. If case is a functional projection, then the resulting Case Phrase (KP) has the structure: [K[DP]]KP. So, case is treated as a constituent, rather than a feature on DP. As a consequence, in languages with morphological case on nouns, constituents projected from nouns are KPs, whereas in languages without morphological case on nouns, constituents projected from nouns are DPs. Articles and cases are indeed in complementary distribution in Slavic languages: Bulgarian and Macedonian have articles and no cases on NPs, whereas other Slavic languages have cases and no articles. However, it is not in general desirable to think of the two together in view of the fact that in Greek, both Ancient and Modern, there is a definite article and there are cases, and cases are shown both on the article and on the noun (as well on the adjective and pronoun).

12 For an analysis of the NP>Q order in languages with basic Q>NP cf. Giusti (1994).

13 The neuter singular form of the verb could be interpreted not as a default agreement form, but may indicate that the quantifier mnogo is itself neuter singular. However, if we replace mnogo with the numeral pet 'five', for example, we still find the same neuter singular form on the verb. And whereas mnogo ends in -o like neuter nouns, pet doesn’t, and therefore we treat the neuter singular form on the verb as a default form, rather than agreement with mnogo.

14 Mnogo (like pet) may be treated as a caseless, frozen form, and hence can only be used in direct case contexts. Actually, Franks (1995: 53) argues that “quantifiers often appear as fixed, frozen forms resembling the accusative”, and he points out that these caseless forms, or frozen accusative forms such as hiljadu ‘thousand’ in Serbo-Croatian, appear even in oblique contexts. The data in (33) show that mnogo cannot appear in an oblique context,
and therefore we cannot accept Frank's proposal that forms like *mnogo are caseless, frozen forms.

15 At this point of our discussion we are presenting those numerals that behave like nouns, and *stotino is such a numeral. However, there is also a quantifier denoting 'hundred' (and also 'thousand' and 'billion') with -u ending (*stotimi), which happens to be identical to the accusative form of the noun *stotina. Discussing forms ending in -u, Franks (1995: 177) concluded that "Serbo-Croatian numerals are frozen forms and that this form is the historical accusative". The -u forms of these numerals are used only in direct case contexts, like 'five', and therefore these forms will not be separately treated in the section on Numerical Quantifiers. The following examples will illustrate that *stotimu, *hiljadu, *tisuću and *milijardu behave like 'five' in all relevant syntactic respects:

(i) Pet/ stotinu/ hiljadu/ tisuću/ milijardu muškaraca je stiglo.
(ii) Vidio je pet/ stotinu/ hiljadu/ tisuću/ milijardu muškaraca.

In (i) we find neuter singular agreement on the verb, in contrast to (41a) with feminine singular agreement. And in (ii) these forms are used in the accusative context.

16 If the numeral quantifier *stotinu is used, then the extraction of the demonstrative is possible, as expected. This point will be elaborated in the section dealing with Numerical Quantifiers. The corresponding examples with *sto and *stotimi would be perfectly possible:

(i) Ovih *sto muškaraca je stiglo.
   these-GEN PL hundred men-GEN PL arrived-NEUT SG

(ii) Ovih *stotinu muškaraca je stiglo.

Notice that in both examples we find a default neuter singular agreement, clearly indicating that *sto and *stotinu are not quantity nouns, as *stotina, but rather quantifiers. So, there is a quantity noun *stotina, with a full nominal declension; *sto, a numeral quantifier comparable to *pet 'five'; and also a quantifier form *stotimi. The latter form is a part of a larger phenomenon whereby *stotini and also *hiljadu and *tisuću (both meaning 'a thousand') can bear the accusative ending -u and be used in direct case contexts, as in (ii) and (iii), or in oblique case contexts, if preceded by a preposition, as in (iv):

(iii) Vidio je ovih *stotinu muškaraca.
   (he) saw these-GEN hundred men-GEN

(iv) Razgovara sa *stotinu muškaraca.
   (he) talks with hundred men-GEN

17 Notice the difference in acceptability between (46b), repeated as (i), and (ii):

(i) *Vas dvojica su stigla.
   you-GEN PL two-NOM aux-3rd PERS PL arrived-NEUT PL

(ii) Vas *dvojica ste stigli.
   you-GEN PL two (males) aux-2nd PERS PL arrived-MASC PL

Notice the distinction in person in the predicate: 3rd vs. 2nd person. So in (ii) *dvojica is no longer the head of the subject phrase, at least not the syntactic head. Compare (45b) where the predicate has the 3rd person plural neuter agreement, agreeing with the head *dvojica. Therefore, it means that (ii) is not a result of the movement of vas from the complement of *dvojica. We suspect that here we have an appositive structure: the head is vas, and
dvojica is in apposition to vas. The question is why we have the accusative form of the 2nd person plural pronoun (vas), and not the nominative form (vi). The nominative form vi appears in appositive structures with common nouns:

(iii) Vi studenti ste stigli.

you-2nd PERS PL students-NOM PL aux-2nd PERS PL arrived-M PL
We don’t want to say that a noun is a complement of a pronoun, but it may be in apposition to a pronoun. However, the following is impossible:

(iv) *Vas studenti ste stigli.

However, vas, and not vi, may appear with all quantified expressions, but crucially, always with second person plural agreement form in the predicate, which tells us that the predicate agrees with some head in the subject phrase which has second person plural features. A quantifier, or a quantity noun for that matter, cannot have these features, and consequently it is not the head of the subject phrase. Only a pronoun can have these features, and therefore a pronoun must be the head of the subject phrase, as in the following examples:

(v) Vas dvoje ste stigli.

you-GEN PL two aux-2nd PERS PL arrived-MASC PL
‘You two (where ‘two’ may be of mixed gender, or only masculine) arrived.’

(vi) *Vi dvoje ste stigli.

(vii) Vas dvije ste stigle.

you two-FEM aux-2nd PERS PL arrived-FEM PL

(viii) *Vi dvije ste stigle.

At this point, we don’t have a proposal for this mystery, why accusative vas, and not nominative vi, with quantified expressions.

Corbett (1979) also argues that prequantifiers, as in (50b), are base-generated in a position after pet and then moved to Spec position. This analysis is adopted also by Franks (1995). Babby (1987), however, does not agree with this analysis for Russian.

Here we must assume that dva has the default neuter features, like all other quantifiers, but differently from mnogo, it can only combine with masculine and neuter nouns, as in (52a). With feminine nouns, we find a different quantifier: dvije which has feminine gender, as shown by the gender features on the predicate in (52b). For tri and četiri we must assume that there are homophonous forms: one with neuter features which can only combine with masculine and neuter nouns, and one with feminine features which can only combine with feminine nouns, as shown by the agreement features of the predicate in (53).

We assume that dva has the default neuter features, like all other quantifiers, and therefore we find neuter forms on the verbs in (a) examples. However, whereas all other quantifiers also have default singular features, ‘two’, ‘three’, and ‘four’ are inherently paucal in grammatical number, and the forms on the verb could be treated as paucal forms. But since these forms are identical with plural neuter forms, we follow the generally accepted view (cf. Corbett (1983: 89-91), that these should be treated as neuter plural forms. As far as (b) examples, we claim that the forms dvije,
tri₂, and četiri, have inherently feminine gender, and therefore we find a feminine form of the verb. Crucially, we claim that numeral quantifiers are heads and the verbs agree with them. They also assign case to their complements, but not grammatical number. Number is not assigned, but numeral quantifiers ‘two’, ‘three’, ‘four’ require (select) paucal nouns as their complements. In contrast to Franks (1995: 105) who treats paucal as a case, for us it is a number. Also, in our system the numeral quantifiers ‘two’, ‘three’, and ‘four’ are not modifiers, but heads. In (52)-(53) they are nominative heads and verbs do agree with them.

The form of the nouns in (52), (53) could be treated as genitive singular, because the form is identical to genitive singular. However, we know that it is not genitive singular because (ii) is ungrammatical:

(i) ona dva visoka muškarca
    those two tall-GEN PAUC man-GEN PAUC

(ii) *ona dva visokog muškarca
    those two tall-GEN SG man-GEN SG

So, as soon as the adjective is added, we see that the NP after dva cannot be the genitive singular NP, and that it must be something else, namely, genitive paucal. The descriptive adjectives have two forms, indefinite and definite: visok and visoki, respectively. The form visoka is genitive singular of the indefinite form, whereas visokog is genitive singular of the definite form. However, the form visoka in (i) cannot be the indefinite form adjective, because the demonstrative is used, and by definition, it cannot be followed by an indefinite adjective. Therefore, visoka in (i) cannot be genitive singular of the indefinite adjective visok, but rather the genitive paucal form of the definite adjective visoki. If visoka is genitive paucal, then muškarca cannot be genitive singular, although the form is identical to genitive singular, but must be genitive paucal, which happens to have the same form as genitive singular.

Dva muškarca may appear after prepositions that take dative, as:

(i) ?Išao je prema dva muškarca.
    Dva muškarca is possible after the preposition prema because that preposition not only assigns dative, but also signals which case was assigned: prema always assigns dative. It is a kind of a flag, indicating that the phrase in its complement must be dative. On the other hand, the verb like pisati may assign not only dative, but also accusative, and therefore we don’t know the case of the phrase after the verb, unless the morphological case ending indicates that. Since the numeral quantifier dva doesn’t have the case ending for oblique cases, therefore it cannot be used after this verb.

(ii) Pisao je dvama muškarcima/ dvjema ženama.

Sentences with declined forms would be acceptable:

(i) Pisao je dvama muškarcima/ dvjema ženama.
(ii) Pisao je dvojici muškaraca.

In this section we discuss only numeral quantifiers. The declined forms dvama and dvjema are adjectival numerals, and they are discussed in the next section. The example (i) is given as (58c). We discuss dvjica in a separate section, since it is a numeral that behaves as a quantity noun, and we give an example with dvjica in (44), though not in a dative context.
Notice that pet/ šest/ sedam/... vos is acceptable, in contrast to *dva/ tri/ četiri vos.

In connection with ungrammatical (56b) the reader might jump to the conclusion that vos dva is not possible at all. However, although dva vos doesn’t occur, vos dva actually does occur, as the following examples from the Oslo Corpus of Bosnian Text illustrate:

(i) Nisam je dopušio kad je došao njihov drugi vojnik i rekao: “Vas dva, za mnom!”
   “I hadn’t finished smoking it when another of their soldiers came and said: “You two, follow me!”

(ii) “Posadite vos dva mene do njegove strane.”
   “You two, place me at his side.”

As (ii) shows, the agreement form of the imperative verb is the 2nd person plural (posadite), just as with vos dvaja/ vos dvije/ vos dvije above. So the only ungrammatical thing about (56b) is the 3rd singular ending on the verb, and it would be grammatical with the imperative verb in the 2nd person:

(iii) Vas dva dodite sutra.

you-ACC two come-3rd PERS PL tomorrow

Again, this proves our claim that dva is not the head of the subject phrase in (iii), but rather stands in opposition to vos, which is the real head of the subject phrase.

These cardinals are treated in traditional grammars as plural forms of collective numerals because they are morphologically plural and they require pluralia tantum nouns as their head, such as svatovi ‘wedding procession’, naočale ‘spectacles’, kola ‘carriage’, or nouns such as rukavice ‘gloves’, cipela ‘shoes’, etc. We treat these numerals as plural cardinals.

The fact that (60b) is unacceptable is not because of the archaic form dvaju. It is true that adjectival forms of numerals ‘two’, ‘three’ and ‘four’ are dying out, and will probably disappear sooner or later. They are rarely used in colloquial language, and remain mainly in literary language. For comparison, these are figures from The Oslo Corpus of Bosnian Texts:

numeral quantifiers: dva: 1026; dvije: 692; tri: 804; četiri: 387;
adjectival numerals: dvaju: 22; triju: 21; četiriju: 7

dvama: 2; dvjema: 20; trima: 1; četirma: 0

The example (60b) suggests that dvaju can’t modify a pronoun at all, but again, corpus data reveal some instances of njih dvaju, as illustrated with examples (i)-(iii):

(i) Zajedničko svojstvo i karakteristika njih dvaju jeste jedna stvar....
   ‘The common property and characteristic of two of them is one thing....’

(ii) Izmedju njih dvaju biće veo, a na uzvisinama će biti ljudi...
   ‘There will be a veil between two of them, and there will be people on the hills....’

(iii) Kojim bi se od njih dvaju, da nije toga bilo, naš narod danas...
   ‘Which one of two of them would our people today, if that didn’t happen....’

However, dvaju no longer modifies a pronoun, as it would in the unacceptable (60b). As in our discussion in connection with examples vos dvaja/
Our examples in (9) illustrate that this is true for a preposition assigning locative case: *o tri knjige*, and *o trima knjigama*. As for dative, we can give an example from The Oslo Corpus of Bosnian Texts:

(i) ka dvjema vrelim tačkama

towards two-DAT hot points

This can be also expressed as (ii):

(ii) ka dvije vrele tačke

The morphological defectiveness does not cause problems when quantifiers appear in oblique contexts with prepositions, and that is because prepositions not only assign case but also serve as a sort of case indicator, so that a quantifier without the oblique case marking can always be correctly interpreted, owing to the fact that it is preceded by a preposition.

We thank Clara Janović, Jurij Lotoško, Tatjana Hofer, Jurij Lander, Michel Yadroff and Svetlana Slavkova for data and discussion. It is our own responsibility to have abstracted away from some differences in the judgements. We also made use of the data discussed in Oford (1995), Timberlake (1993) and Wade (1992).

Pesetsky (1982) claimed that the two agreement patterns in Russian reflect NP (plural) vs. QP (neuter singular) status. For us syntactic agreement is agreement with the head of the phrase, and semantic agreement is agreement according to meaning, agreement with something else inside the phrase and not with the syntactic head. In the theoretical approach of Pesetsky, if the predicate is plural, then the subject *pijat’ studentov* in Russian is NP, and the head of the phrase in N. However, if the predicate is singular, then the same phrase is no longer NP, but QP, and the head of the phrase is Q. For us, *pijat’ studentov* is always QP, and *pijat’* is always the head, regardless of the form of the predicate. If the predicate is singular, we have syntactic agreement, but if the predicate is plural, then we have semantic agreement. The semantic agreement is less preferred.

*Tjasača* exhibits a mixed behavior, nominal vs. adjectival. However, in this section we are interested only in its nominal behavior.

This contrasts with Polish (112). One Russian informant actually gave (66b) as the only acceptable choice.

For us this is semantic agreement, because we find the masculine plural form of the predicate in agreement with *soldat* rather than with the syntactic head of the phrase *tjasača*. Of course, both (66b) and (66c) would be possible with “regular” numerals, and in such a case (66b) would be QP with group reading, in Pesetsky’s terminology, whereas (66c) would be NP for Pesetsky and DP for Franks, and with individuated reading.

Babby (1984, 1987) points out that the numbers *pijat’* ‘five’ through *desjat’* ‘ten’ were FEM SG nouns in Old Russian. An example from Old Russian (Babby 1984: 102) shows that *pijat’* used to be a feminine quantity noun which could be preceded by an agreeing determiner and triggered agreement with the predicate:

(ii) ta pijat’ [staryx ženčin] prišla

that-F-SG five-NOM-F-SG [old women]-GEN-PL came-F-SG
Some native speakers find (69b) acceptable. The appropriate translation of (69b) might be 'their majority' (derived from 'the majority of them', just as (69b) is derived from bol'nistvo ix).

Some speakers do not accept (71b) and (72) at all. Instead they pronominalize the quantifier with the ACC=GEN PL of animate and merge it with the partitive PP iz nix:

(i) Ja videl mnogix iz nix
I saw many-ACC PL of/among them GEN PL

Lander (p.c.) suggests that the grammaticality improves if the pronoun is interpreted with generic reference. The imperfective form vidual favors this interpretation. Yadroff (p.c.) reinforces this judgement noticing that in (i) nas can only be interpreted in a generic sense as "of our generation" or "of our social group":

(i) On videl mnogo nas
He saw many us-GEN

Yadroff (p.c.) also notes that mnogo ix is possible in the postverbal subject position of ergative predicates:

(ii) (*Ubežali)/Ubežalo mnogo ix.

This clearly shows that a personal pronoun can be sister of a quantifier, provided that it complies with independent restrictions.

We follow Corbett (1983) in distinguishing between syntactic and semantic agreement. He speaks about semantically justified agreement in Russian: "the lower the numeral, the more likely it is to take semantically justified agreement" (p. 223).

At first sight, (76a) may look like an example of syntactic agreement, because the presence of nominative plural demonstrative forces the plural predicate. However, in our approach, it would be syntactic agreement if we assume that te, the nominative masculine plural demonstrative, is the head of this phrase, in which case it should be treated as DemP. However, we believe that this is a QP, with Q pijat' as the head. Consequently, the plural form of the verb indicates that this is an example of semantic agreement, and we believe that it is semantic agreement with the plural form of čelovek, and not syntactic agreement with the plural form of the demonstrative.

Cf. Giusti (1997) and related work, for the claim that demonstratives are in SpecDP universally.

The analysis of the quantity expression in (83c) as a QP with the pronoun in SpecQP, predicts that we find the same restriction on the interpretation of the pronoun that we found in (71b), (72a) which correspond to a previous stage in the derivation of (83c), before movement of the pronoun. The prediction is borne out. According to Lander (p.c.) in (83c) and (85c) the pronoun can only have generic (non-referential) interpretation.

Parallel cases are not acceptable with mnogie.

(i) *mnogie èti studenty
many those-NOM students-NOM

(ii) *èti mnogie studenti
At the moment we can offer no explanation for that. A possible line of research is to consider mnogie as a form of the quantifier mnogo plus agreement. But this should be the topic of a separate paper.

Older styles of Polish allow this too.

We thank Svitlana Jones and Halyna Znamerovska for providing and discussing the data. We also referred to Shevelov (1993) for data.

Russian doesn’t differ from Ukrainian in this respect:
(i) ?* Prišlo bol’sinsvo vas.
(ii) Prišlo vas bol’sinstvo.
(iii) Vas prišlo bol’sinstvo.
The acceptable (ii) requires a special intonation with emphasis on bol’šinstvo and criticizing vas to prišlo. With respect to (i), although perhaps not literally ungrammatical, it is highly unnatural.

Bahato and kil’ka have ‘adjectival forms’, but only in the sense that they agree with the noun. However, they don’t have ‘adjectival forms’ in the sense that their agreement endings are those of numerals (inst. kil’koma like p’jatoma) and not those of adjectives (inst. pl. dobrymy).

We thank Lida Veselovská and Lucie Medová for comments and discussion. Some data are taken from Short (1993).

For some reason which we cannot explain at the moment, a pronoun cannot be spelled-out in the complement position of quantifier (Cf. (99a) with (103a) below).

Why are both orders (104a, b) acceptable in contrast to comparable Russian or English examples? Could it just be that different speakers are giving different individual judgments, and that this has nothing to do with different grammars of different languages? We searched the Web for Czech examples with těch and mnoho and found both orders:
(i) Za těch mnoho let
(ii) Těch mnoho lidi
(iii) Mnoho těch golfových hřist
(iv)mnoho těch prirodních druhů

Obviously, it is not a matter of different individual judgments, but widespread phenomena. These forms are from written language, produced spontaneously, not as a response to a linguist’s question. So obviously, this is a part of native speaker’s knowledge of Czech.

We thank Małgorzata Cavar, Krzysztof Migdański and Paweł Rutkowski for data and discussion. Section 4.10 of Rothstein (1993) is also very informative.

In contrast to other languages discussed in this paper, in Polish quantifiers and numerals alternate between nominative and genitive forms depending on the virility of the head noun. When the head noun is virile, the genitive form is used, and when it is non-virile, the nominative form is used. So a human masculine form wiele is used with human masculine nouns, whereas wiele is used with human feminine, neuter, and non-human of all genders. Because of its syncretic genitive/accusative form, some authors, like Schenker (1971) and Franks (1995) claim that wiele is actually accusative.

We treat te as nominative, not accusative. Schenker (1971) argues that numerals in subject phrases are accusative, not nominative, but he doesn’t extend that analysis to demonstratives. He neither mentions demonstratives nor
gives examples with demonstratives as in our (119b). Traditionally, pięć and pięću are analyzed as nominative and genitive, respectively, as in:

(i) pięć       kobiet       głosowalo.
    five- NOM  women-GEN PL  voted-NEUT SG

(ii) pięćiu   studentów     głosowalo.
         five-GEN  students-GEN PL  voted-NEUT SG

Since they appear in the same context, Schenker claims, they cannot have different cases. And since “virile” form has syncretic genitive/accusative form, as in (ii), then this is not genitive, but accusative. On the other hand, “nonvirile” form in (i) has syncretic nominative/accusative, therefore the form in (i) is not nominative, but rather accusative. Consequently, subject phrases with numerals are always accusative. Franks (1995: 132), following Schenker, also treats these forms as accusative: “… the only way to analyze these forms consistently is to treat them both as accusative. The reason is that the accusative is syncretic with either the genitive or the nominative, depending on whether or not the noun is virile. Consequently, quantified subjects in Polish must be analyzed as accusative rather than nominative…” Discussing examples with demonstratives, Franks (1995: 133) points out: “Although, according to most speakers consulted, prequantifiers in Polish only appear in the genitive, several reference grammars cite the alternative possibility of the nominative.” Franks gives an example glossing te as nom-acc:

(7) ych/      te       pięć       kobiet       pojechalo ...
    these(gen/ nom-acc) five women(gen pl) went(neut sg)

In conclusion Franks says: “I am crucially interpreting the te option in (7) as an instance of accusative and not nominative case, contrary to traditional views…”. On the other hand, Corbett (1983: 218) says: “In Polish, modifiers preceding the numeral may be nominative plural or genitive plural:

(8) wszystkie  pięć       pociągow
    all (nom pl)  five (nom)  trains (gen pl)

(9) wszystkich  pięć       pociągow
    all (gen pl)  five (nom)  trains (gen pl)"

Corbett refers readers to the following sources in his footnote on page 240: Klemensiewicz (1930: 122), Grappin (1950: 83-4), Decaux (1964: 70-1) and Bogusławski (1973: 30-1).

References:


Leko, Nedžad. 1995. “Syntactic behaviour of numerals 1,2,3,4,5 in Bosnian and Slovene”. Quaderni del Dipartimento di Linguistica, Università di Firenze 6, 213-228.


