

## Chapter 18

# Number agreement mismatches in Russian numeral phrases

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This paper looks at two cases of number agreement mismatch in Russian numeral phrases and offers a unified syntactic analysis for both. One case relates to examples where a higher numeral that typically selects a plural NP fails to do so when the head noun lacks a singular lexical form. Instead, an NP headed by a noun that lacks a plural lexical form is chosen despite the selectional requirement of the numeral. The second case concerns data discussed in Franks & House (1982) that involve topicalization of a complement of a lower numeral, which consistently selects a singular NP, with the topicalized NP unexpectedly appearing in the plural form.

**Keywords:** Russian numeral phrases, number agreement, syntax, morphology, contrastive topicalization, information structure

## 1 Genitive of quantification

Russian numerals are traditionally subcategorized into two groups depending on the number feature carried by the head of the NP they select. The first group of the so-called LOWER numerals includes numerals from 2 to 4, which consistently select a complement headed by a noun in the singular genitive form, as in (1). The second group of HIGHER numerals includes numerals from 5 and above, which select a complement headed by a noun in the plural genitive form, as in (2).

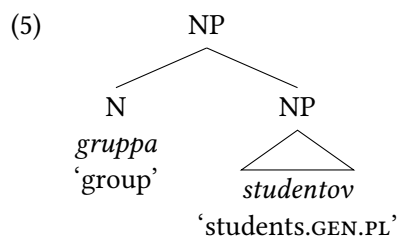
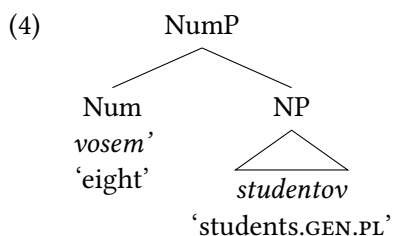
- (1) dva studenta  
two student.GEN.SG  
'two students'



(2) vosem' studentov  
 eight students.GEN.PL  
 'eight students'

(3) grupa studentov  
 group students.GEN.PL  
 'a/the group of students'

The present paper is concerned with both types of numeral phrases given in (1) and (2) but we start by looking at constructions involving higher numerals, as in (2). The traditional way of analysing (2) is to say that the higher numeral behaves like a noun in the genitive construction, as in (3). That is, the numeral is the head of the NumP taking the quantified NP as its complement and assigning genitive plural to it, so that there is no structural difference between (2) and (3); see (4) and (5).<sup>1</sup>



Curiously, the parallel in the case and number features observed in NumPs headed by a higher numeral and genitive constructions in (2) and (3), respectively, only holds for those NP complements whose head noun has both lexical number forms

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<sup>1</sup>Although (4) represents the most standard approach to NumPs headed by a higher numeral, other analyses exist. One such analysis assumes that the higher numeral is merged in the highest position within the NP and moves to D (Pesetsky 2013). As postulation of the D layer for Russian NPs is rather controversial (see Bošković 2008; 2010), I adopt a more standard representation of NumPs that essentially assumes the same surface hierarchical structure. Whether the numeral has moved to its surface position from within the NP or is generated in it is immaterial for the present analysis. Another analysis proposed in the literature is based on the observation that a higher numeral can undergo left-branch extraction, and can also receive a case from the outside when its complement receives genitive (as in the Russian *po*-construction). To account for this observation, it has been proposed that the numeral is located in the Specifier of a null head, which itself assigns genitive (Franks 1995, Bailyn 2004). For the purpose of the present analysis, it is immaterial whether the numeral is the head of the numeral phrase that assigns genitive, as in (4), or if it is located in the Specifier of a null head that assigns genitive. The analysis in (4) is adopted here mainly for the ease of exposition.

– plural and singular. Although such nouns constitute the overwhelming majority of Russian nouns, there are exceptions. Thus, the Russian noun *čelovek* ‘person’ only has a singular lexical form, whereas the noun *ljudi* ‘people’ only has a plural lexical form.<sup>2</sup> As expected, the case-assigning noun in the genitive construction in (6) can select an NP headed by the noun that only has a plural lexical form, see (6a), but not the noun that only has a singular lexical form, see (6b). What is unexpected is that the NumP headed by a higher numeral behaves in the exactly opposite way, see (7). Despite the fact that the higher numeral typically takes a plural NP complement, this NP cannot be headed by a noun that lacks a singular lexical form, see (7a). Instead, an NP headed by a noun that lacks a plural lexical form is selected, see (7b). As a result, the selected NP fails to carry the genitive plural features, and the noun surfaces in the form that is morphologically identical to the default nominative singular form.<sup>3</sup>

<sup>2</sup>Due to the fact that *čelovek* and *ljudi* have distinct roots and are historically derived from distinct nouns, I assume that they are distinct lexical items. Importantly, an analysis that assumes that *ljudi* involves contextual root allomorphy of *čelovek* in the context of a higher numeral cannot be sustained because in some contexts, either of the two nouns can surface (see footnotes 13 and 14).

<sup>3</sup>The fact that the noun in (7b) surfaces in the form identical to the nominative singular form is in line with the idea that nominative is a morphological default (Marantz 1991, Schütze 1997; 2001). Although languages may differ in the realization of default case, in Russian it is indeed nominative. Thus, the Russian variant of the English phrase *Me intelligent?!* can only contain a nominative noun. Plausibly, the morphological form of the noun in (7b) is a historical remnant of the old declension paradigm from the time when *čelovek* had both number forms, with the nominative singular and the genitive plural forms coinciding. However, since in modern Russian the plural form is no longer available for *čelovek*, the morphological form of this noun in the context of a higher numeral must have been reanalysed as the default nominative singular form that surfaces due to the morphological deficiency of *čelovek* (see the notation in (7b)). Additional support for this view comes from the fact that *čelovek* is not the only noun that is reanalysed in modern Russian as nominative due to the genitive-nominative syncretism. Russian feminine nouns whose nominative plural and genitive singular forms coincide can be construed as nominative plural in the context of a lower numeral thereby affecting the choice of case form of the modifying adjective, see (i.a). The genitive singular form is also available for these nouns in modern Russian but is less common, see (i.b).

- |     |  |   |
|-----|--|---|
| (i) | a. <i>dve krasivye devočki</i><br>two pretty.NOM girls.NOM<br>‘two pretty girls’ | b. <i>dve krasivyx devočki</i><br>two pretty.GEN girl.GEN<br>‘two pretty girls’ |
|-----|--|---|

Since both lexical number forms, singular and plural, are available for the noun *devočka* in modern Russian, both structures in (i) are possible. Logically, if one of the lexical number forms disappeared, only one structure in (i) would remain. Plausibly, this is exactly what happened to the noun *čelovek*.

- (6) a. gruppa ljudej  
group people.GEN.PL  
'a/the group of people'  
b. \* gruppa čelovek / čeloveka  
group person.NOM.SG person.GEN.SG
- (7) a. \* vosem' ljudej  
eight people.GEN.PL  
b. vosem' čelovek  
eight person.NOM.SG  
'eight people'

The difference in the choice of the noun form illustrated in (6) and (7) strongly suggests that the structural case assigned by a higher numeral is not identical to the lexical case assigned by a noun in the genitive construction. It has been proposed in the linguistic literature that Russian higher numerals assign the so-called GENITIVE OF QUANTIFICATION (GQ) rather than simple genitive (Bošković 2006). If so, we can hypothesise that GQ places a specific requirement on the head of the NP, which results in the pattern observed in (7). In particular, being a quantificational case, GQ may require that the NP receiving it is headed by a noun that has a lexically realised unit for counting, see (8). Nouns that do not have a singular lexical form will, then, be expected to fail to head an NP that receives GQ, as such nouns lack a lexically realised unit for counting.<sup>4</sup>

<sup>4</sup>The hypothesis put forward in (8) is additionally supported by data involving mass nouns, as in (i) and nouns belonging to the group of pluralia tantum, as in (ii). Both types of nouns lack a unit for counting and, hence, fail to head the NP that received GQ from the higher numeral, see (i.a) and (ii.a). The only way these nouns can occur in NumPs headed by a higher numeral is when they head an NP that receives genitive from the noun that has a lexical singular form and therefore can head the NP that receives GQ from the higher numeral, as in (i.b) and (ii.b).

- |     |  |      |   |
|-----|--|------|---|
| (i) | a. * vosem' čaja<br>eight tea.GEN  | (ii) | a. * vosem' nožnic<br>eight scissors.GEN  |
|     | b. vosem' stakanov čaja<br>eight glasses.GEN tea.GEN<br>'eight glasses of tea' |      | b. vosem' par<br>eight pairs.GEN<br>nožnic<br>scissors.GEN<br>'eight pairs of scissors' |

It is of course true that in English pluralia tantum also fail to head NP complements to numerals. However, since the present paper is on Russian, a discussion of English is left for future research. Another issue that has to be left for future research is that although structures like

- (8) NPs headed by a noun that lacks a unit for counting are unable to carry GQ.<sup>5</sup>

If the rule given in (8) is correct, Russian higher numerals have a difficult time dealing with nouns that lack one of the lexical number forms. We have seen in (2) that higher numerals require plural agreement with their NP complement. At the same time, (8) demands that the relevant NP is headed by a noun that has a singular lexical form. When the head noun has both lexical number forms, both of these requirements can be obeyed, as in (2). Conversely, when the head noun has only one of the number forms, as is the case with *čelovek* and *ljudi* in (7), a choice must be made as to which requirement is obeyed at the cost of violating the other, given that both of them cannot be obeyed simultaneously. The data in (7) demonstrate that Russian chooses to obey (8) at the cost of violating the requirement for plural agreement. That is, the noun in the well-formed structure in (7b) has a singular form. The NP it heads can therefore receive structural GQ from the numeral. However, this noun lacks a plural form. It therefore fails to realise the genitive plural features required for agreement with the higher numeral and surfaces in the default nominative singular form.

Following Bobaljik (2008), I assume that morphological case (m-case) must be distinguished from structural case, with m-case being treated as a morphological phenomenon applying at PF and structural case as syntactic NP licensing (see also Harley 1995, Marantz 2000, McFadden 2004, Schütze 1997, Sigurðsson 1991, Sigurðsson 2003, Yip et al. 1987, Zaenen et al. 1985). Assuming that the proper place of agreement, which is dependent on m-case, is the morphological component that is a part of the PF interpretation of structural descriptions (Bobaljik 2008), we can argue that in (7) the choice is made between the requirement for the NP complement to Num to be syntactically licensed through structural GQ,

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(ii.a) are never used in formal register and are perceived as ungrammatical by my consultants and myself, they can be found in colloquial Russian. A possible explanation for this occurrence is that speakers that allow (ii.a) analyse the noun heading the NP complement to the numeral in (ii.b) as an optionally null classifier due to its invariable form (i.e., no other noun can be used with pluralia tantum).

<sup>5</sup>This rule refers to nouns that lack a lexically realised unit for counting. This includes mass nouns, collective nouns, pluralia tantum and countable nouns that lack a non-suppletive lexical singular form. Importantly, nouns like *deti* ‘children’ do not fall under this category despite having a suppletive singular form *rebyonok* ‘child’ in modern Russian. This is because the non-suppletive form *ditja* ‘child’ still exists in the language even though it is perceived as stylistically marked and somewhat archaic. The noun *ljudi* ‘people’, conversely, has never had a non-suppletive lexical singular form as it was historically derived from a collective noun, i.e., *ljud* ‘people, folk’ (Chumakina et al. 2004) that already lacked a unit for counting.

and the requirement for it to realise plural features at PF. The data in (7) suggest that syntactic well-formedness is a stronger requirement. That is, what we observe in (7b) is that a well-formed syntactic representation containing a structurally licensed NP is generated, but when this representation reaches PF, the latter fails to realize the genitive plural features on the defective noun (i.e., the noun that lacks a plural lexical form).<sup>6</sup>

## 2 The numeral-classifier construction

The pattern observed in (7) breaks down in constructions involving modification or topicalization, see (9) and (10), creating an apparent counterexample to (8). That is, once a modifier interferes between the numeral and the noun, selecting an NP headed by a noun that lacks a singular lexical form becomes possible, as in (9b), in an apparent violation of (8), whereas using a noun that lacks a plural lexical form, as in (9a), is not acceptable to all native speakers of Russian.<sup>7</sup>

- (9) a. % vosem' krasivyx čelovek  
eight pretty.GEN.PL person.NOM.SG  
b. vosem' krasivyx ljudej  
eight pretty.GEN.PL people.GEN.PL  
'eight pretty people'

Similarly, when the NP is topicalized, as in (10c), a noun lacking a singular lexical form is selected in an apparent violation of (8). A noun lacking a plural lexical

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<sup>6</sup>The present analysis assumes a competition of syntactic and PF constraints, with syntactic constraints winning the competition. I do not propose an Optimality Theoretical account for this competition because I do not take syntactic constraints to be violable.

<sup>7</sup>Although Russian prescriptive grammars state that (9a) is ungrammatical, I have come across speakers that accept it. I have therefore used questionnaires in order to establish which form in (9) is more acceptable to native speakers of Russian (judged on the scale from 1 to 5, with 5 being fully grammatical and 1 fully ungrammatical). Out of forty-six native speakers questioned, four favoured (9a) and forty-two favoured (9b). Out of the group of speakers that favour (9a), two speakers clarified that since the phrase in (7a) is ungrammatical, it should be ungrammatical even in the presence of modification, while the other two speakers did not explain their preference. Out of the group of speakers that favour (9b), eight speakers found (9a) fully ungrammatical (in line with my own judgement as a native speaker of Russian), whereas the remaining thirty-four speakers found it marginally acceptable (none of them gave it a five or a four) but degraded with respect to (9b) (two speakers have independently suggested that (9a) is restricted to contexts involving contrast).

form, on the other hand, cannot be used in topicalized NPs (see (10b)) despite being chosen in the structure prior to topicalization (see (10a)).<sup>8</sup>

- (10) a. V komnate bylo vosem' čelovek.  
           in room was.3SG.N eight person.NOM.SG  
           'In the room there were eight people.'
- b. ?? Čelovek<sub>1</sub> v komnate bylo vosem' t<sub>1</sub>.  
           person.NOM.SG. in room was.3SG.N eight
- c. Ljudej<sub>1</sub> v komnate bylo vosem' t<sub>1</sub>.  
           people.GEN.PL in room was.3SG.N eight  
           'As for people, there were eight of them in the room.'

The data in (9) and (10) present a challenge for (8). In particular, if the higher numeral assigns GQ to its NP complement and thus places the restriction in (8) on it, (9b) should be impossible, as it seemingly contains a syntactically unlicensed NP. Similarly, in (10c) the topicalized NP is expected to reconstruct but it cannot reconstruct into the position where it receives GQ, as in (10a), because reconstruction to this position of the NP headed by a noun that lacks a singular lexical form, as in (10c), violates (8). A logical solution for (10) would be to assume that the topicalized NP in (10c) reconstructs to some other position, where it receives some case other than GQ. If so, this position might also be the position that hosts the NP in (9b). Let us use this assumption as our working hypothesis and try to establish what this position is and what case is assigned to the NPs in (9b) and (10c) and by what head.

As a starting point let us look at (11). We have hypothesised in (8) that a noun lacking a unit for counting cannot head an NP that receives GQ. We have based this hypothesis on (7a) but we expect it to apply to any noun that lacks a unit for counting, including mass nouns. This prediction is indeed borne out in (11).<sup>9</sup> It is nevertheless possible to express the meaning of (11) with a grammatical sentence as long as the NP headed by a mass noun receives genitive or partitive case from the head of the NP that receives GQ from the numeral, as in (12).

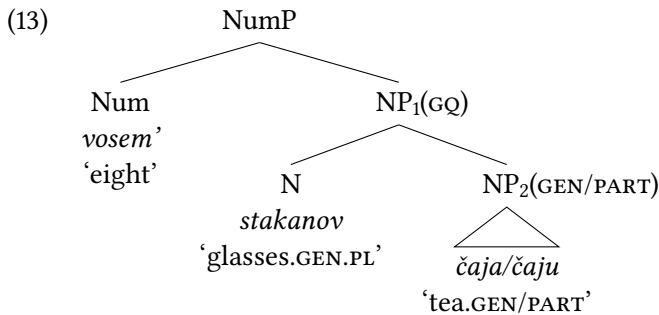
- (11) \* Na stole stojalo vosem' čaja / čajju.  
           on table stood.3SG eight tea.GEN tea.PART

<sup>8</sup>(10b) is marginally acceptable under the interpretation of approximate inversion (although this word order still feels like resulting from a production error) but not under the interpretation and intonation associated with the topicalization of the NP.

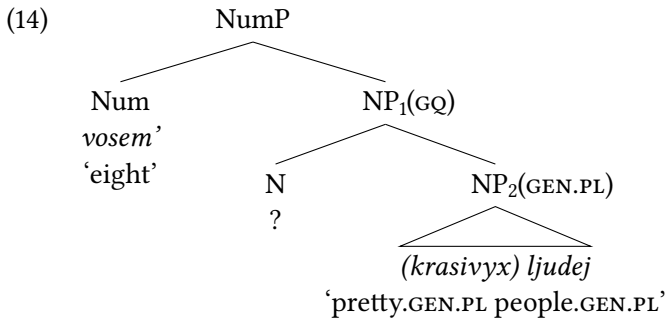
<sup>9</sup>The ungrammaticality of (11) cannot be due to the lack of plural agreement with the higher numeral, as such a violation is tolerated in (7b).

- (12) Na stole stajalo vosem' stakanov čaja / čajju.  
 on table stood.3SG eight glasses.GEN.PL tea.GEN tea.PART  
 'There were eight glasses of tea on the table.'

The assignment of GQ is possible in (12) because the NP that receives it is headed by a countable noun that has both lexical number forms. The availability of a singular lexical form ensures that there is no violation of (8), while the availability of a plural lexical form allows for the realisation of the genitive plural features; see (13).



In (13), the mass noun that cannot head NP<sub>1</sub>, which receives GQ from the numeral, can nevertheless head NP<sub>2</sub>, which is contained in the NumP and c-commanded by the numeral. The crucial hypothesis that I would like to put forward is that the same strategy is used in (9b) and (10c), as shown in (14).



In (14) the NP<sub>2</sub> headed by the noun that lacks a singular lexical form receives genitive plural from a phonologically null QUANTIFYING EXPRESSION (QE) that heads NP<sub>1</sub> carrying GQ.<sup>10</sup> The questions that will be addressed in this section

<sup>10</sup>The idea that numeral phrases may contain phonologically null nouns has also been proposed in Kayne (2005).



are the following. What is the nature of the QE in (14)? Can it be overt? What licenses its covert status?

I would like to propose that the head of NP<sub>1</sub> in (14) is the lexical variant of the noun ‘person/people’ that only has a singular lexical form, as in (15). (In the following examples, SMALL CAPS mark the focus of the sentence.)

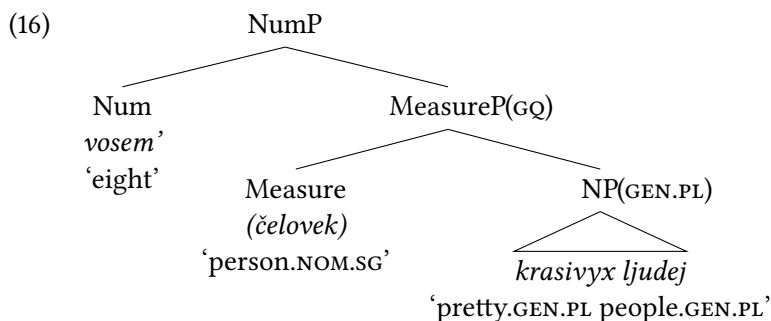
- (15) [Krasivyx ludej]<sub>1</sub> v komnate bylo VOSEM’  
 pretty.GEN.PL people.GEN.PL in room was.3SG.N eight  
 (čelovek) t<sub>1</sub>.  
 person.NOM.SG  
 ‘As for pretty people, there were eight of them in the room.’

The structure for (15) is given in (16). This construction has been referred to in the linguistic literature as the NUMERAL-CLASSIFIER CONSTRUCTION (NCC) (see Sussex 1976, Yadroff 1999 and Pesetsky 2013). It is forced in structures with approximate inversion involving modification of the type *čelovek pjat’ krasivyx ljudej* ‘approximately five pretty people’.<sup>11</sup> Following Yadroff (1999), I assume that the

<sup>11</sup>In the absence of modification, inversion can take place in a structure that does not contain the QE *čelovek*; see (i). However, if the noun is modified, any type of movement to pre-numeric position – be it just the noun inverted, as in (ii.b), just the adjective inverted, as in (ii.c), or both words inverted, as in (ii.d) and (ii.e) – is ungrammatical. In this case, the structure in (16) with the inverted pleonastic noun *čelovek* must be used, as in (iii) (see also Mel’čuk 1985 and Yadroff 1999).

- (i) a. pjat’ muzykantov  
 five musicians.GEN.PL  
 ‘five musicians’  
 b. muzykantov pjat’  
 musicians.GEN.PL five  
 ‘approximately five musicians’
- (ii) a. pjat’ talantlivyx muzykantov  
 five talented musicians.GEN  
 ‘five talented musicians’  
 b. \*muzykantov pjat’ talantlivyx  
 c. \*talantlivyx pjat’ muzykantov  
 d. \*talantlivyx muzykantov pjat’  
 e. \*muzykantov talantlivyx pjat’
- (iii) čelovek pjat’ talantlivyx muzykantov  
 person.NOM.SG five talented musicians.GEN.PL  
 ‘approximately five talented musicians’

QE in constructions of the type given in (16) is not a normal noun but a classifier and assign it to a category that Yadroff calls Measure. As can be seen from (15) and (16), the QE that heads the MeasureP can be overt. The option of being covert, on the other hand, is plausibly licensed by the limited semantic function and the semantic recoverability of the QE. To be precise, the QE in (16) has no other semantic function but to pick out a certain number of individuals from the set represented by its NP complement.<sup>12</sup>



The set denoted by the NP is a subset to the set denoted by the QE. In other words, the set denoted by the NP interpretively restricts the set denoted by the QE. Consequently, the QE consistently represents the superset to the set represented by its NP complement. Plausibly, the default superset construal is one of the factors contributing to the semantic recoverability of the QE. However, as we will see in §4, this is not a sufficient factor and additional restrictions on semantic recoverability apply.

If we are right in assuming that the interpretation of the superset to the set represented by the NP is a crucial factor for the semantic recoverability of the QE, we expect that when *čelovek* does not take an NP complement, it must be overt and the set it represents is unrestricted. This is indeed the case in (7b), where

<sup>12</sup>If the QE is allowed to be covert due to its limited semantic function, we expect that when it performs an additional semantic function, it must be overt. This is indeed the case in structures involving approximate inversion, where the QE cannot be covert; see (i).

- (i)
- a. *čelovek*            *pjat'* *krasivyx ljudej*  
 person.NOM.SG five pretty people.GEN.PL  
 'approximately five pretty people'
- b. *pjat'* *krasivyx ljudej*  
 five pretty people.GEN.PL  
 'five pretty people' (not: 'approximately five pretty people')

*čelovek* takes no NP complement. It therefore refers to an open set of people and is obligatorily overt.

The analysis in (16) entails that Russian higher numerals consistently assign GQ to their complements and that (8) always holds, whereas the NP headed by the noun *ljudi* never ends up in the position receiving GQ. Instead, this NP is consistently selected by an optionally null QE that assigns genitive plural to it. This assumption captures the problematic data in (9) and (10). Yet, the reader might wonder why the structure in (16) is not used in (7a), which should make it well formed. I would like to argue that the structure in (16) is indeed available for (7a) but employment of this structure results in semantic oddness. Indeed, the structure in (7a) is as semantically odd as the one in (17), where the QE is overt, because in both examples the open set of people represented by the QE (covert or overt) is not restricted by a more specific subset of people denoted by its NP complement. The NP is interpreted as referring to an open set of people but an open set of people is already denoted by the QE. We have argued that the QE can only take an NP complement that restricts its set. That is, given that in (16) the QE denotes an open set of people, the NP must refer to a set of people with some specific features or qualities, such as ‘pretty people’ in (9b). Whenever the QE takes an NP complement that represents exactly the same open set, this results in redundancy and subsequent semantic oddness; see (7a) and (17).<sup>13</sup>

<sup>13</sup>As expected, (7a) improves when the set represented by the QE is semantically restricted, as in (i). The acceptability of (i) strongly suggests that (7) cannot be accounted for by assuming a morpho-phonological constraint that bans linear adjacency between *vosem’* and *ljudej*. Furthermore, linear adjacency is possible in a coordinate structure with the interpretation ‘a group of (approximately) 8 individuals some of which are men and some hobbits’; see (ii.a). As can be seen from (ii), when the QE selects a coordinate NP that represents two sets – a set of people and a set of hobbits, no semantic oddness obtains because the set denoted by the QE is restricted by a more specific subset of hobbits.

- (i) ? vosem’ ljudej            s    krasivymi licami  
       eight people.GEN.PL with pretty faces  
       ‘eight people with pretty faces’
- (ii) a. (čelovek)        vosem’ ljudej        i    hobbitov  
       person.NOM.SG eight people.GEN.PL and hobbits.GEN.PL  
       ‘(approximately) eight people and hobbits’
- b. (čelovek)        vosem’ hobbitov      i    ljudej  
       person.NOM.SG eight hobbits.GEN.PL and people.GEN.PL  
       ‘(approximately) eight hobbits and people’

- (17) \* vosem' človek            ljudej  
      eight    person.NOM.SG    people.GEN.PL

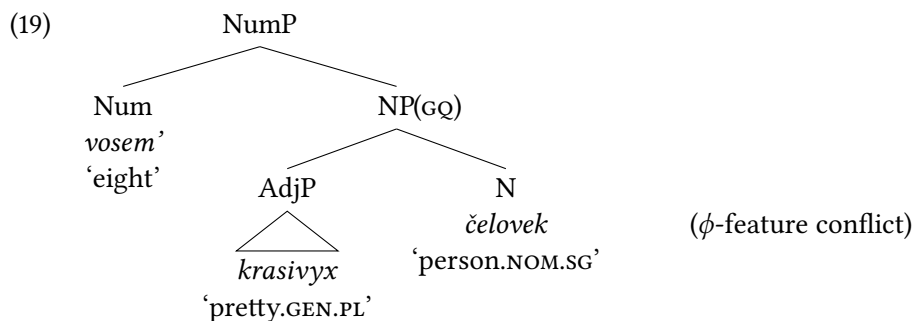
Crucially, whenever the NP that is complement to the QE is topicalized, as in (10c), semantic oddness disappears, strongly suggesting that the topicalized NP refers to a more specific set than the one denoted by the QE. In the next section, we discuss the nature of this set and discover why the structure in (16) is obligatory for (10c).

### 3 The plurality requirement

We have argued that modification makes it possible for higher numerals to take MeasureP complements headed by an optionally null classifier that in turn takes an NP complement that can be headed by the noun *ljudi*; see (9b) and (16). We have maintained that this option is determined by the semantics of the NP. In particular, the NP must restrict the set denoted by the classifier. In the absence of such a restriction, the NCC cannot be formed (see (7a) and (17)), whereas modification makes such a restriction possible. At the same time, we have seen that the structure with *človek* in (9a) is acceptable to some speakers but not others (see footnote 7). Let us consider the grammar of both types of speakers. Plausibly, speakers who (like myself) find (9a) ill formed interpret the noun *človek* in (9a) as a classifier due to its impoverished morphological form. This is because nouns that have both lexical number forms surface in the nominative singular form when used as classifiers (see (18a)) but in the plural genitive form required for agreement with the higher numeral when used as heads of NPs (see (18b)). When the noun is nominative singular and hence construed as a classifier, modification is impossible (see (18c)) in line with the observation that classifiers generally resist modification. By hypothesis, speakers of my variety transfer the classifier analysis to any noun that surfaces in the nominative singular form in the context of a higher numeral and analyse (9a) in parallel with (18c).

- (18) a. vosem' kilogramm            jablok  
      eight    kilogram.NOM.SG    apples.GEN.PL  
      'eight kilograms of apples'
- b. vosem' polnovesnyx            kilogrammov  
      eight    full-weight.GEN.PL    kilograms.GEN.PL  
      'eight full-weight kilograms of apples'
- c. \* vosem' polnovesnyx            kilogramm  
      eight    full-weight.GEN.PL    kilogram.NOM.SG

The fact that nominative singular classifiers generally resist modification is plausibly due to a  $\phi$ -feature conflict that results from the adjective realising the case and number features required for agreement with the higher numeral and the classifier being unable to realise them, as in (19).<sup>14</sup>



Since the adjective in (9a) and (19) is part of the NP that enters into an agreement relation with the numeral, it must realise the genitive plural features. Incidentally, no other morphological form of the adjective but genitive plural can surface in NPs receiving GQ from a higher numeral.<sup>15</sup> The classifier, conversely, surfaces in what appears to be the default nominative singular form. This, in turn, generates a conflict within the NP resulting from a mismatch in the case and number features between the head and the modifier; see (19).<sup>16</sup> Plausibly, it is this mismatch that results in the ill-formedness of (9a) for speakers of my variety. Naturally, a

<sup>14</sup>The ungrammaticality of (9a) cannot be due to modification as such, as modifiers that do not enter into an agreement relation with *čelovek* can surface in this type of construction; see (i) below.

- (i) vosem' čelovek      s      krasivymi licami  
 eight person.NOM.SG with pretty faces  
 'eight people with pretty faces'

<sup>15</sup> Unlike Serbo-Croatian, Russian does not have uninflected 'indeclinable' modifiers.

<sup>16</sup> It appears that the crucial violation here is the case feature mismatch, as a number feature mismatch is tolerated in Russian NPs that are complements to lower numerals. Pesetsky (2013) accounts for the number feature mismatch found in contexts of paucals by assuming that the adjective merges with N or a projection of N and agrees with the closest number-bearing element, which is the [−singular] paucal. The noun, on the other hand, enters syntax bearing no number feature (NBR) and immediately merges with the paucal, which is a free-standing instance of NBR rather than a numeral. As a result, the adjective is [−singular], whereas the noun is not specified for the [−singular] feature.

structure with a plural noun, as in (9b), does not suffer from a  $\phi$ -feature conflict. However, the NP in (9b) cannot carry GQ as it is headed by a noun that lacks a singular lexical form; see (8). Hence, the NCC in (16) must be formed for (9b). To rephrase, (16) is licensed by the plurality requirement placed on the noun by the adjective in my variety of Russian.<sup>17</sup>

Conversely, speakers that accept (9a) must be insensitive to the aforementioned  $\phi$ -feature conflict. This might be because, even in the absence of modification, such NumPs involve a  $\phi$ -feature violation that is tolerated, i.e., the noun in (7b) does not realise the genitive plural features required for the agreement with the higher numeral. By hypothesis, insensitivity to the  $\phi$ -feature conflict between the adjective and the noun allows these speakers to interpret *čelovek* as a full noun rather than a classifier despite its impoverished morphological form. If so, the structure in (4) is generated in the grammar of these speakers for the numeration in (9a), while the NCC in (16) is generated whenever the simpler structure in (4) is unavailable, as in (9b). We would, then, expect to find speakers that favour (9a) over (9b) due to its simplicity along with speakers that accept both structures to a certain degree but assign distinct contextual interpretations to them. This prediction appears to be borne out (see footnote 7).

Since for speakers of my variety, (9a) is ill formed due to a plurality requirement placed on the noun, which in turn triggers the structure in (16), it is not completely outlandish to assume that (10b) is ill formed for a similar reason. Namely, a plurality requirement is placed on the topic NP, which rules out the structure with a noun that lacks a plural lexical form. I would like to propose that the relevant plurality requirement follows from the interpretive properties of NumPs that contain a trace of a topic NP. Let us consider these properties. The sentence in (10c) has a typical Top/Foc structure, with the topic NP construed as a CONTRASTIVE TOPIC (CT) and the numeral constituting the NARROW FOCUS of the

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<sup>17</sup>In the absence of a plurality requirement, the formation of the NNC is possible only when the QE is overt, as in (i) and (ii).

(i) *čelovek vosem' talantlivyx muzykantov*  
 person.NOM.SG eight talented.GEN.PL musicians.GEN.PL  
 'approximately eight talented musicians'

(ii) *V orkestre rabotajet pjat' čelovek skripačej, i šest' čelovek*  
 in orchestra work.3SG five person.NOM.SG violinists.GEN.PL and six person.NOM.SG  
*duxovikov.*  
 wind-players.GEN.PL  
 'In the orchestra work five violinists and six wind-players.'

sentence. Thus, (10c) most naturally occurs in a context that asks about the quantity of individuals present in the room and therefore licenses narrow focus on the numeral, as in (20). It is, however, incompatible with a context that licenses focus on the entire NumP, as in (21). (Sentences marked with ‘#’ are grammatical but incompatible with the given context.)

(20) Q: Skol’ko ljudej bylo v komnate?  
 how.many people.GEN was.3SG.N in room.PREP  
 ‘How many people were there in the room?’

A: Ljudej<sub>1</sub> v komnate bylo VOSEM’ t<sub>1</sub>.  
 people.GEN.PL in room was.3SG.N eight  
 ‘As for people, there were eight of them in the room.’

(21) Q: Kto byl v komnate?  
 who was.3SG.M in room.PREP  
 ‘Who was in the room?’

A: # LJUDEJ<sub>1</sub> v komnate bylo VOSEM’ t<sub>1</sub>.  
 people.GEN.PL in room was.3SG.N eight  
 ‘As for people, there were eight of them in the room.’

The question (20Q) can be answered by a simpler sentence that does not contain a CT; see (22).

(22) Q: Skol’ko ljudej bylo v komnate?  
 how.many people.GEN was.3SG.N in room.PREP  
 ‘How many people were there in the room?’

A: V komnate bylo VOSEM’ čelovek.  
 in room was.3SG.N eight person.NOM.SG  
 ‘In the room there were five people.’

However, the replies (20A) and (22A) are not only structurally different, their interpretation is also distinct: while (22A) merely answers the question about the quantity of people in the room, (20A) additionally conveys that people were not the only individuals present in the room that are relevant for the discussion at hand but they were the only individuals for whom the quantity (i.e., the focus value) is known. Since for other individuals in the room the quantity is unknown, the sentence is perceived as providing incomplete information. The interpretation of incompleteness is what characterizes the information-structural (IS) category of CT (Büring 2003), strongly suggesting that the topic NP in (20A)

and (10c) is a CT.<sup>18</sup> This conclusion is further supported by the observation that (10c) has the prosodic pattern typical of CT/Foc sentences, with the rising topic contour IK3 on the topicalized NP and the falling contour IK1 on the focused numeral (Bryzgunova 1971; 1981, Titov 2013).

The set introduced by the CT in (20A) and (10c) is a subset of a set of individuals that were present in the room. That is, even when the CT refers back to an identical discourse-antecedent, as in (20), the sentence itself activates the superset construal, as it conveys that just a subset of the set of individuals in the room that are relevant for the discourse at hand are people. This means that the superset for the set of people becomes salient at the point the sentence is uttered.

The above observation provides an answer to the question we posed in the previous section. Recall that while the sentences in (7a) and (17) are semantically odd because the QE in these examples takes an NP complement that represents exactly the same open set, the sentence in (10c) does not suffer from semantic oddness. We have suggested that this is because the topicalized NP refers not to an open set of people but to some other set that restricts the set introduced by the QE. Indeed, contrastive construal of the topicalized NP in (10c) results in the interpretation according to which this NP belongs to a contextually closed set of individuals that were present in the room, for some of whom the quantity is unknown. In other words, the CT in (10c) does not represent an open set of people but a subset of individuals that were present in the room. Plausibly, this contextual restriction of the set to which the NP belongs eliminates redundancy and semantic oddness that we observe in (7a) and (17).

Another crucial observation as regards the interpretive properties of (10c) is that the NumP here is obligatorily non-referential. This is because the verb here is in the default third person singular form. The availability of default agreement is due to NumPs in Russian being construed by syntax either as NPs or QPs (Pesetsky 1982). In the former case, the verb agrees with the nominative NP, as in (23a), and the NP allows for definite/specific reading, while in the latter case, agreement cannot take place and the QP is interpreted as a non-specific indefinite (see (23b)) (Titov 2012).<sup>19</sup>

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<sup>18</sup>To be interpreted as a CT, the relevant NP must linearly precede the focus in Russian (Titov 2013).

<sup>19</sup>The fact that NumPs in sentences with default agreement cannot be referential is further supported by the observation that they cannot take an apparent wide scope typical of specific indefinites; compare (i) and (ii) below. While the sentence in (ii) allows for the reading where two specific students failed all of the exams, (i) can only mean that for each exam there were two students that failed it.



- (23) a. V komnatu vošli (èti) vosem' čelovek.  
in room entered.3PL these eight person.NOM.SG  
'(These) eight people entered the room.'
- b. V komnatu vošlo (\*èti/ètix) vosem' čelovek.  
in room entered.3SG these.NOM/GEN eight person.NOM.SG

We have seen that the sentence in (10c) has narrow focus on the numeral. Plausibly, this IS partitioning forces syntax to interpret the NumP as a QP rather than an NP, as the sentence in (10c) cannot contain an agreeing verb (see (24)), resulting in the obligatorily non-specific indefinite construal of the NumP (see (25)).

- (24) \*Ljudej<sub>1</sub> v komnate byli vosem' t<sub>1</sub>.  
people.GEN.PL in room was.3PL eight
- (25) Ljudej<sub>1</sub> v komnate bylo (\*èti/ètix) vosem' t<sub>1</sub>.  
people.GEN.PL in room was.3SG.N these.NOM/GEN eight  
'As for people, there were (\*these) eight of them in the room.'

Due to the non-specific construal, the NumP in (10c) cannot refer to a specific set of eight people. Instead the focused numeral selects a subset of eight people from the set introduced by the CT (i.e., the NP), strongly suggesting that we are dealing with the so-called set partitive interpretation of the NumP.<sup>20</sup> Given that only NPs that can denote sets of entities are allowed in set partitives, such NPs must contain plural nouns (de Hoop 1997). Hence, it is the set partitive construal of the NumP that places a plurality requirement on the topic NP in (10c), rendering (10b) ungrammatical.<sup>21</sup>

It has been suggested that the quantifier in partitive constructions is followed by an empty noun (Milner 1978, Bonet & Solà 1986, Abney 1987, Hernanz & Bru-

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- (i) Govorjat, čto každyj examen provalilo dva studenta. [V > ∃; \*∃ > V]  
they-say that every exam.ACC failed.3SG two students  
'They say that every exam was failed by two students.'
- (ii) Govorjat, čto každyj examen provalili dva studenta. [V > ∃; ?∃ > V]  
they-say that every exam.ACC failed.3PL two students  
'They say that every exam was failed by two students.'

<sup>20</sup>Numerals cannot occur in entity partitives.

<sup>21</sup>Following Barker (1998), I assume that partitives are ANTI-UNIQUE. Due to anti-uniqueness, partitives are inherently non-specific indefinites, resulting in DP partitive constructions being unable to be headed by a definite determiner. The data in (25) can be seen as supporting this idea.

cart 1987, Delsing 1988; 1993, Ramos 1992, Cardinaletti & Giusti 1992; 2006, Sleeman 1996, Doetjes 1997, Barker 1998, Brucart & Rigau 2002, Ionin et al. 2006). This assumption is motivated by the observation that a partitive construction of the type given in (10c) denotes two sets (here it is a general set of people and a set of eight people present in the room). The Catalan example in (26a), where *e* is lexically identical to *homes* ‘men’, illustrates this idea.

- (26) Catalan (Martí i Girbau 2010: 27)
- a. tres e d'aquells homes d'allà  
three of-those men over-there  
'three of those men over there'
  - b. tres homes d'aquells homes d'allà  
three men of-those men over-there
  - c. tres homes d'aquells e d'allà  
three men of-those over-there

In (26a), the partitive construction refers to two sets of men: the set of those men and the set of three men, the latter being a subset of the former. The NumP in (26b) has an overt noun inserted between the quantifier and the PP and is grammatical, albeit odd and redundant to a native speaker. The NumP in (26c) has an empty noun holding the final noun position. Overall, this is taken as evidence that an empty noun category should be posited to license a partitive meaning. In line with this observation, the present analysis assumes the structure in (16) for the partitive NumP in (10c), where an optionally null classifier occurs between the numeral and the genitive NP.

In this section, we have argued that a plurality requirement placed on a noun forces the structure in (16) whenever this noun lacks a singular lexical form and can therefore not head an NP that receives GQ from a higher numeral; see (8). Economy considerations predict that the more complex NCC is generated for NumPs that do not have an overt QE if and only if a plurality requirement forces plural features on the noun but the NP this noun heads fails to be generated in the complement to the numeral position, for instance because of (8). In this case, and this case alone, the simpler structure in (4) is not available for the given numeration. In all other cases, (4) is chosen by the grammar as the more economical structure.

#### 4 Franks & House (1982)

Further evidence for the NCC analysis comes from the data discussed in Franks & House (1982) that involve topicalization of an NP in the genitive plural form

that appears to take place from a position to which genitive singular is assigned; see (27).

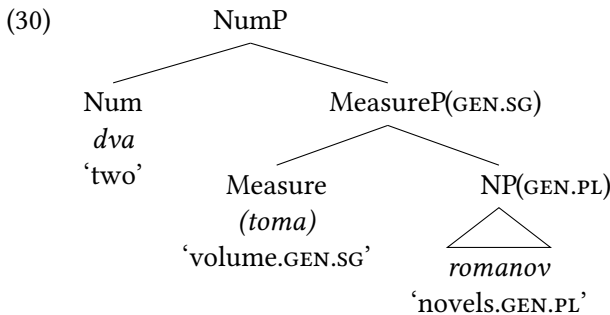
- (27) Romanov<sub>1</sub> na stole bylo dva t<sub>1</sub>. (Franks & House 1982: 157)  
 novels.GEN.PL on table was.3SG.N two  
 ‘As for novels, there were two of them on the table.’
- (28) a. Na stole bylo dva romana.  
 on table was.3SG.N two novel.GEN.SG  
 ‘On the table there were two novels.’
- b. \*Na stole bylo dva romanov.  
 on table was.3SG.N two novels.GEN.PL

The head of the numeral phrase in (27) is a lower numeral that consistently takes a genitive singular NP complement, as in (28a). A genitive plural NP cannot be licensed in the complement to lower numeral position; see (28b). Yet, while the topicalized NP *romanov* ‘novels’ in (27) carries a genitive case marker, it is, surprisingly, in a plural form. Franks & House maintain that the topic NP cannot have been extracted from the argument *dva* ‘two’ because the latter assigns the genitive singular, not the genitive plural. Hence, they propose that the genitive NP is an external topic that forms a constituent with a covert quantifier, which accounts for the genitive case marking. The overt quantifier raises at LF, licensing the null quantifier of the genitive constituent. However, as Franks & House point out, the genitive topic in (27) is different from other attested external topics in Russian (i.e., nominative topics) in that the former is not obligatorily followed by a pause. Moreover, the genitive topic in (27) requires a numeral in the clause that refers back to the genitive NP. This, of course, cannot be said about other external topics. And finally, Franks & House’s analysis of the number agreement mismatch in (27) cannot be applied to the cases of number agreement inconsistencies discussed above that do not involve topicalization.

Hence, the NCC analysis appears to be better suited for (27). On this account, the sentence in (27) contains an optionally null QE whose semantic set is restricted by the topic NP, as in (29) and (30). The structure in (30), just like the one in (16), is licensed by two conditions: (i) the plurality requirement placed on the CT (i.e., NP) that moves out of a non-specific NumP with a set partitive construal, and (ii) the impossibility of reconstruction of the plural NP to the complement to Num position. In the case of (16), the latter condition results from (8). In the case of (30), it results from the fact that a lower numeral cannot take a plural NP complement; see (1) and (28b). Importantly, the generation of the more complex NCC is possible only when the two conditions prevent the generation of the simpler

structure in (4). In all other cases, economy rules out the NCC and the structure in (4) is used.

- (29) Romanov<sub>1</sub> na stole bylo DVA (toma) t<sub>1</sub>.  
 novels.GEN.PL on table was.3SG.N two volume.GEN.SG  
 ‘As for novels, there were two volumes on the table.’



By analogy with (16), the head of the MeasureP in (30) is optionally null. As the set represented by the QE is consistently a superset to the set introduced by its NP complement, the QE is semantically recoverable, in the sense that when it is null, it can be interpreted as representing any set of which the set denoted by the NP is a subset. In (30) the overt QE denotes a set of volumes on the table out of which a set of novels is a subset, but the set represented by the QE can be even more open and denote a set of books on the table out of which a set of novels is a subset, as in (31).

- (31) Romanov na stole bylo DVE knigi.  
 novels.PART/GEN.PL on table was.3SG.N two book.GEN.SG  
 ‘As for novels, there were two books on the table.’

Typically, the set represented by the QE is contextually specified, as in (32) where it is given as the superset in the contextual question. That is, depending on whether the items on the table out of which the set of novels is selected are books or different kinds of reading materials (e.g. novels, newspapers, magazines, journals etc.) or different kinds of unrelated items (e.g. novels, apples, plates, flowers etc.), the set can be as open as to include all inanimate entities, as long as the context (linguistic or extra-linguistic) warrants such a construal.

- (32) Q: Skol’ko knig bylo na stole?  
 how.many books.GEN was.3SG.N on table.PREP  
 ‘How many books were there on the table?’  
 A: Romanov na stole bylo DVE knigi,  
 novels.PART/GEN.PL on table was.3SG.N two book.GEN.SG

stixov (na stole bylo) TRI (knigi), a  
 poems.PART/GEN.PL on table was.3SG.N three book.GEN.SG and  
 slovarej (na stole bylo) ČETYRE (knigi)  
 dictionaries.PART/GEN.PL on table was.3SG.N four book.GEN.SG  
 ‘There were two books of novels on the table, three (books of) poems  
 and four (books of) dictionaries.’

It is, however, plausible that when the QE in (30) is phonologically null and the context does not specify the nature of the set it denotes, it is interpreted as representing the most open set out of which the set denoted by its NP complement is a subset. We have seen that the most open superset for individuals is a set of people represented by the noun *čelovek*. Similarly, in (30) the most open superset for the set of inanimate entities is the set of items, represented by the noun *štuka*, as in (33).<sup>22</sup>

(33) Romanov na stole bylo DVE štuki.  
 novels.PART/GEN.PL on table was.3SG.N two item/thing.GEN.SG  
 ‘As for novels, there were two items on the table.’

In (33), the noun *štuka* ‘item/thing’ selects a certain number of entities from a set of novels in exactly the same fashion as the noun *čelovek* ‘person’ selects a number of individuals from a set of pretty people in (15) so that the only difference in the construal of the QEs in (33) and (15) lies in the features [ $\pm$ animate] and [ $\pm$ human].<sup>23</sup> In other words, *štuka* represents the most open set of entities, while *čelovek* denotes the most open set of individuals. Plausibly, in the absence of a contextual disambiguation, the null QEs in NCCs are interpreted as referring to these open sets.

<sup>22</sup>The QE in (31)–(33) cannot be phonologically null when Num carries feminine gender features required for agreement with the feminine MeasureP. When the QE is null, Num agrees in gender with the masculine NP. As the MeasureP and the NP in (31)–(33) have distinct gender features, the constructions with an overt and a covert QE have distinct agreement features on the numeral.

<sup>23</sup>Yadroff (1999) analyses the nouns *štuka* and *čelovek* used in NCCs as pleonastic noun classifiers. He argues that the class of classifiers found in NCCs is closed, with *štuk* ‘items.GEN.PL’ replaced with *ěkzempljárov* ‘copies.GEN.PL’ in formal register, and *čelovek* ‘person.NOM.SG’ replaced with *duš* ‘souls.GEN.PL’ in archaic texts. However, as can be seen from (29)–(32), it is possible to have other nouns performing the role of the QE as long as they represent a superset to the set denoted by the NP complement. Just like any other classifier mentioned by Yadroff, the QEs in (29)–(32) can occur in a construction involving approximate inversion, as in (i).

(i) knig / tomov pjat’ istoričeskix romanov  
 books.GEN.PL volumes.GEN.PL five historical.GEN.PL novels.GEN.PL  
 ‘approximately five books/volumes of historical novels’

Above, we mentioned that the superset construal of the QE is not sufficient for it to remain null and that additional restrictions on semantic recoverability apply. To be precise, while QE in (30) can remain covert in structures involving contrastive topicalization, as in (27), in the absence of topicalization, it must be overt; see (34).

- (34) a. Na stole bylo dva toma romanov.  
on table was.3SG.N two volume.GEN.SG novels.PART.PL  
'There were two books of novels on the table.'
- b. \*Na stole bylo dva romanov.  
on table was.3SG.N two novels.PART.PL

Plausibly, the option of remaining covert in (27) is due to the IS partitioning of the non-referential NumP into focus on the Num and CT on the NP, which results in a set partitive construal of the NumP, which in turn requires the presence of the QE (null or overt) in order for the partitive construction to denote two sets. It follows, then, that partitive construal itself presupposes the NCC containing the QE. Conversely, in (34b), it is impossible for the NumP to have the corresponding CT/Foc partitioning because the NP does not move across the numeral (Titov 2013). Hence, in the absence of contrastive topicalization, the QE must be overt. Yet, there is one exception to this rule, i.e., the QE can stay covert and be recovered when it refers to the same set as denoted by the head of its NP complement, as in (9b) where both heads select out of a set of people; see (16). This rare occurrence is due to the deficient lexical number forms of the two nouns, which allows them to co-occur as long as there is a restriction of the set represented by the QE by the set denoted by its NP complement that can be achieved either via modification or topicalization. Since both heads in (16) denote the same set, the referent of the QE is recoverable from the referent of the head of the NP.

## 5 Conclusion

In this paper, we have discussed two types of number agreement mismatch in Russian numeral phrases. We have proposed a unified syntactic account for both phenomena that assumes the NCC in (16) and (30) where the plural NP is a complement to an optionally null QE. We have argued that the structure is forced by a plurality requirement placed on the head of the NP, and either the selectional requirement of a lower numeral, as in (27), or by (8), as in (9) and (10). We have maintained that the optionally covert status of the QE results from its limited semantic function, and its semantic recoverability. The latter obtains in two cases,

the most common of which involves contrastive topicalization and partitive construal that results in the salience of the set represented by the QE. The other case is restricted to nouns that lack one of the lexical number forms, in which case the referent of the QE is identical to the referent of the head of its NP complement, allowing for its semantic recoverability.

## Abbreviations

3	third person	NCC	numeral-classifier construction
ACC	accusative		
CT	contrastive topic	NOM	nominative
GEN	genitive	PART	partitive
GQ	genitive of quantification	PL	plural
IS	information structure/al	PREP	prepositional case
M	masculine	QE	quantifying expression
N	neuter	SG	singular

## Acknowledgements

Many thanks to the audience of FDSL 12 and the anonymous reviewers for useful comments on the material presented here. I would also like to thank my language consultants for grammaticality judgments and the editors for their invaluable work.

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