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PREDICATE AGREEMENT WITH QUANTIFIER PHRASES CONTAINING THE WORDS POLOVINA OR TRET’ AND AN APPROXIMATIVE MARKER

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This paper focuses on predicate agreement with quantified phrases that include *bolee, okolo* (“about, more than”) and the nouns *polovina* (a half), *tret’* (a third), and numerals. This study based on data from the National Russian Corpus describe the modern standard of predicate agreement with quantified phrases containing *okolo, bolee + polovina/treti*. The data show that a predicate is most likely to occur in the singular with “bolee, okolo + numeral” and in the plural with “okolo, bolee + polovina/treti”. The author proposes an answer to the question of why the standards of agreement for quantified phrases with similar structures are different. The factors that influence the form of the predicate are also examined.

Key words: Russian morphosyntax, predicate agreement, quantifier expressions, corpus studies in linguistics.

JEL Classification: Z

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Introduction

This paper deals with Russian predicate agreement with prepositional and adverbial quantified phrases that are headed by the prepositions okolo (about), svyshe (more) and by the adverbs bolee (more), menee (less) and that express approximative quantitative meaning, for example: Okolo poloviny studentov prohodili stazirovku v inostrannyh universitetah. (About half of the students were trained in foreign universities).

In Russian, as in the other Slavic languages, predicate agreement with quantified noun phrases (NPs) and quantified prepositional phrases is characterized by variability. It is known that there are three agreement strategies likely to occur with quantified phrases:

- The predicate may agree with a quantifier heading the quantified NP and may take the singular of the relevant gender (if the quantifier is a noun): V etom godu polovina detej poseshchala kruzhi i sektsii. (“This year half of the children are attending classes and workshops”). This type of agreement is usually called either grammatical (Skoblikova 2005:175-179, Rozental 2010:257) or syntactic or, more exactly, full agreement (Corbett 1979:37-38, 88-89 etc.).
- The predicate may coordinate with a quantifier or with a numeral which has no features of gender or number and takes singular neuter: Na juge Rossiii bylo organizovano neskolko nauchnyh centrov. (“Some research centers were organized in the south of Russia”).

In such an example, gender is neutralized and the predicate number is made singular for purposes of agreement (Suprun 1965: 12-13, Corbett 1979:78).
- The predicate may take the plural, in which case we see agreement based on the meaning, or semantic agreement (Corbett 1979:37-38; Skoblikova 2005:175–179; Rozental 2010:257): Bolee sta prodyuserov rabotayut na rossijskom rynke. (“More than a hundred producers operate on the Russian market”).

The choice of agreement strategy depends on a number of factors and primarily on the morphosyntactic features and semantics of the quantified phrase, or more precisely, of the quantifier (or numeral) (Skoblikova 2005; Krasovitsky, Corbett et al. 2010). In particular, the predicate agrees semantically with quantified phrases, which include numerals (especially dva, tri or chetyre), while
with such quantifiers as *stolko, mnogo,* etc., it agrees mostly in the neuter singular (in default) (Corbett 1979; Krasovitsky, Corbett et al. 2010). Furthermore, as a whole series of studies has shown, the choice of the predicate form is determined by contextual factors such as word order, animacy of the subject, type of predicate, lexical content of predicate, and topic-focus structure, among others (Graudina et al., Skoblíkova 2005, Crockett 1976, Corbett 1979, Corbett 1998, Robblee 1993, Nikunlassi 2002, Kuvshinskaya 2013 etc).

Since the features of quantified phrases have a decisive influence on agreement, a description of the peculiarity of agreement of the predicate with each kind of quantified phrase seems to be necessary. An investigation of the rules of predicate agreement with different quantified phrases may let us find the probability of each agreement strategy in sentences containing quantified phrases and define the influence of different context factors.

Quantified prepositional and adverbial phrases (qPP, qAP), which have received little attention in connection with predicate agreement, will be the focus of analysis in this paper.

These constructions has been examined in several aspects in some prior research papers. The syntactic structure of such qPPs was studied by I.A. Melchuk (Melchuk 1985:363-375) and L. Babby and, later, by L. Billing, who follows Babby in analysis of these constructions (Babby 1985, Billing 1995). These researchers give a different interpretation of syntactic structure. Melchuk asserts that the phrases which consist of preposition with approximative meaning, numeral (or quantifier) and noun in genitive are prepositional quantified phrases and shows that the preposition with approximative meaning is a head of qPP (Melchuk 1985:363, 366-368). Babby analyzing preposition phrases with preposition *około,* distinguishes two meanings: a “proximate” (locative) meaning and an “approximative” (quantificational) meaning. In latter case Babby interprets the construction as a noun phrase, combining the preposition and a numeral in entire quantifier constituent of noun phrase (Babby 1985:96-99).

We believe that the question about the head of quantified prepositional or adverbial phrases remains controversial and requires more careful study. This paper is based on the interpretation given by Melchuk. We hope that the investigation of predicate agreement of quantified prepositional and adverbial phrases with approximative meaning will enable a better understanding of the syntactic structure of these phrases.

The analysis that both Melchuk or Babby or Billing provide does not include predicate agreement, but Melchuk notices some context factors that influence the choice of the predicate form, such as lexical features of the predicate and semantics of the qPP (Melchuk 1985:373).
L.K. Graudina, V.A. Itskovich and L.P. Katlinskaya describe statistics gathered on predicate agreement with quantified phrases such as “około milionu chelovek.” The authors conclude that in this case default agreement (in the neuter singular) is most likely, and indicate some contextual factors that influence predicate form (Graudina et al.1976:29-30). These results seem to focus more on predicate agreement with prepositional phrases which include numerals than on those with quantifier-nouns. So the ratio of singular to plural forms of the predicate is similar to that which the present author has found for sentences with prepositional phrases containing numerals [Kuvshinskaya 2013].

G. Corbett, looking at predicate agreement with various types of quantified phrases, analyzes an example with the qPP “około + numeral + countable noun” and points out that the preposition około at the head of a phrase, by blocking the influence of a countable noun, causes default agreement (Corbett 1979: 86). But our data show that a predicate can agree in the plural with qPPs like “około (or another preposition or adverb that has an approximate meaning) + numeral + countable noun” (Kuvshinskaya 2013).

The factors influencing the choice of the predicate form in the sentences with construction “około / bolee / menee / svyshe + numeral + countable noun” in contemporary Russian have been considered in another paper by the present author (Kuvshinskaya 2013).

Thus, predicate agreement with qPPs containing preposition with an approximate meaning, numeral and countable noun has been partly examined. With regard to qPPs and qAPs with an approximate meaning containing the words polovina (a half) or tret (a third), predicate agreement has never been given particular attention. Nevertheless, these kinds of sentences provide examples of interesting and unexpected distribution of agreement strategies that differ from the distribution observed in sentences containing qPPs and qAPs with approximate meaning and containing numerals.

This paper studies the agreement of predicates with quantified prepositions and with the adverbia phrases “około / bolee / menee / svyshe + polovina / tret (in the genitive) + noun (in the genitive)” in comparison with predicate agreement with the qPPs and qAPs “około / bolee / menee / svyshe + numeral + noun in genitive.”

We will call the prepositions and adverbs (comparatives) with an approximate meaning “approximative markers,” using the term proposed by Melchuk (Melchuk 1985: 362).

Approximative markers, in addition to the prepositions and comparatives mentioned before, include such words as primerno, približitel’no, do, etc. (Melchuk 1985: 362). However, sentences with such words were not sampled in this paper, since in such phrases the quantifier is not in the
genitive, but in the nominative (for example: *primerno polovina studentov* [around half of the students]), and predicate agreement, as our observations show, does not differ from agreement with the same quantifier word in the nominative without an approximative marker (*polovina studentov* (half of the students)). This seems to be logical, since the syntactic structure of quantified phrases with *primerno* and *priblizitel’no*, as Melchuk argues, differs from that of quantified phrases with *około*, *bolee*, etc. According to Melchuk, an approximative marker like *primerno* or *priblizitel’no* depends on the numeral or quantifier, while the preposition or comparative (*około*, *bolee*) is the head of a quantified phrase (Melchuk 1985:362-363).

This paper is based on an analysis of 486 examples with qPPs and qAPs, consisting of the words *około* / *bolee* / *menee* / *svyshe* + *polovina* / *tret’*. In addition, for the purposes of comparison, we looked at 1,295 examples with qPPs and qAPs including *bolee* / *menee* / *około* / *svyshe* + cardinal numeral (e.g., *około pyati knig* [near five books]).

For our research we used material from the Main Corpus of the Russian National Corpus (RNC, www.ruscorpora.ru), specifically samples for the period 2000-2014. The data concerning predicate agreement with qPPs and qAPs containing numerals is taken from (Kuvshinskaya 2013) and covers a more narrow period, 2000-2012.

1. **Predicate agreement with NPs including the words *polovina* / *tret’* and an approximative marker, based on RNC data**

1.1. **Choice of predicate form in sentences with NPs including the words *polovina* / *tret’* and an approximative marker**

Predicate agreement with quantifier phrases headed by the words *około, boleje, meneje* and *svyshe* and including the words *polovina* or *tret’* may take both the forms of the singular neuter and plural and, in some cases, the singular feminine form (these forms are rare). Singular neuter and plural forms are almost equally likely to occur, while plural forms are more likely in sentences with particular qPPs and qAPs (See Table 1).


*More than half of all nestlings do not survive to the second year.*

So, about a third of our fellow citizens are ready to come to the land of the rising sun for restoration work.

About a third of the expenses of the system aren’t secured with currency.

Table 1. Predicate agreement with quantifier phrases containing an approximative marker and words polovina/tret’

<table>
<thead>
<tr>
<th>The predicate number</th>
<th>Singulare neuter</th>
<th>Singulare feminine</th>
<th>Plural</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Okolo poloviny</td>
<td>53.5% (53)</td>
<td></td>
<td>46.5%</td>
<td>100%</td>
</tr>
<tr>
<td>svyshe poloviny</td>
<td>23% (2)</td>
<td></td>
<td>77%</td>
<td>100%</td>
</tr>
<tr>
<td>bolee poloviny</td>
<td>43.7% (107)</td>
<td>0.4% (1)</td>
<td>55.9%</td>
<td>100%</td>
</tr>
<tr>
<td>menee poloviny</td>
<td>61.5% (16)</td>
<td></td>
<td>38.5%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Okolo treti</strong></td>
<td>39% (18)</td>
<td>2% (1)</td>
<td>59%</td>
<td>100%</td>
</tr>
<tr>
<td>bolee treti</td>
<td>45% (22)</td>
<td></td>
<td>55%</td>
<td>100%</td>
</tr>
<tr>
<td>menee treti</td>
<td>33% (4)</td>
<td>9% (1)</td>
<td>58%</td>
<td>100%</td>
</tr>
</tbody>
</table>
1.2. The value of the approximative marker in choosing the predicate form

The data given in Table 1 let us suggest that the choice of predicate seems to vary depending on the preposition or adverb in the sentences with qPPs and qAPs containing word polovina. The predicate more frequently agrees in the plural with bolee poloviny and svyshe poloviny, and is much more likely to take a singular neuter form in sentences with okolo poloviny and menee poloviny.

To estimate the statistical reliability of the data, Pearson's Chi-squared test with Yates' continuity correction and Fisher's exact test were used. The coefficients were counted using the calculator available at http://graphpad.com/quickcalcs/contingency2.

We compared the probability of plural and singular neuter form of the predicate in the sentences with okolo poloviny and bolee poloviny. The Pearson's Chi-squared test with Yates' continuity correction showed that the choice of predicate does not depend on the preposition or adverb that heads the qPP or qAP.

The Chi-squared value is 2.278 with 1 degree of freedom.

The two-tailed P-value is 0.1312. The associations between the qPP or qAP and the form of the predicate are therefore not statistically significant.

In sentences with svyshe poloviny and menee poloviny, as well as in sentences with okolo poloviny and bolee poloviny, there is no apparent connection between the preposition or adverb that heads the qPP or qAP and the choice of the form of the predicate, according to the results of the Fisher test, which yielded

a two-tailed P-value of 0.0599. The association between the qPP or qAP and the form of the predicate is therefore considered to be not statistically significant.

The average value for data on the plural or singular neuter agreement with the qPPs and qAPs that include an approximative marker and the word polovina can be estimated. The average figures are represented in Table 2:

<table>
<thead>
<tr>
<th>Approximative marker + tret’</th>
<th>Singular neuter</th>
<th>Singular feminine</th>
<th>Plural</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>41 % (44)</td>
<td>2% (2)</td>
<td>57% (61)</td>
<td>100% (107)</td>
</tr>
</tbody>
</table>

Table 2. Predicate agreement with quantifier phrases containing an approximative marker and words polovina/tret’ (average value)
The probability of semantic agreement and default agreement for qPPs and qAPs that include the word *polovina* seems to be almost equal, with agreement in the plural being somewhat more likely. The probability of semantic agreement for qPPs and qAPs that include the word *tret’* is evidently higher than the default probability.

The Chi-squared test with Yates’ correction confirms that predicate agreement for qPPs and qAPs with both quantifiers shows the same tendency to plural forms. The Chi-squared value is 0.693 with 1 degree of freedom, and the two-tailed P value is 0.4051.

The association between, on the one hand, a quantifier with *polovina* or *tret’*, and the form of the predicate on the other, is therefore not statistically significant.

1.3. **Full agreement (in the singular feminine) with quantified prepositional and adverbial phrases containing the words *polovina* and *tret’***

There are rare instances in which the predicate takes the form of the singular feminine. This usage cannot be admitted as standard: the predicate agrees with the nouns *polovina* or *tret’*, but these words both depend on the preposition or adverb and take the genitive, not nominative. Thus predicate agreement with *polovina* and *tret’* in sentences with qPPs and qAPs like *około poloviny, bolee treti*, etc. seems to be non-standard.

At the same time, examples with singular feminine forms of the predicate are important for understanding regularities of predicate agreement with quantified phrases which include an approximative marker and a quantifier-noun.

Melchuk argues that the head of a quantified prepositional or adverbial phrase is the approximative marker (preposition, adverb etc.). But such quantified phrases, as Melchulk shows, have a peculiarity; namely, that the head (the approximative marker) can be omitted in the tree of the prepositional-case connection (Melchuk 1985: 368). The possibility of omission of the preposition “około” or the entire PP “około + numeral” in the phrase of the structure “około+numeral+ noun” that has quantitative meaning is asserted by Babby (Babby 1985:99-100).

Returning to the instances with the predicate in the singular feminine, we have reason to suppose that speakers seem to use the opportunity to omit the approximative marker. That is why the predicate agrees with *polovina* or *tret’* in the singular feminine.

Compare: *Tret’ rashodov systemy ne obespechena dengami*


*More than half of the transaction value was covered by Russian palladium supplies.*

Compare: *Polovina stoimisti sdelki byla pokryta postavkami rossijskogo palladija.*

The choice of the singular feminine form is also influenced by the word order. The precedence of subject favors semantic predicate agreement if semantic and default agreement are possible, as Corbett has proved [Corbett 1998]. Predicate agreement is syntactical (full) in instances (4, 5). It is obviously “more semantic” than the default agreement, which is also possible here. Semantic predicate agreement (in the plural) would be probable only in (4). In (5), the singular form of the noun *stoimost* in the qPP prevents plural agreement:

* Bolee poloviny stoimisti sdelki byli pokryty postavkami rossijskogo palladija

The word order is significant in these instances because of the “more semantic” choice of the predicate form rather than the default form, and because of the difficulty of syntactic agreement under inversion (precedence of predicate):

* Dengami ne obespechena okolo treti rashodov systemy

* Postavkami rossijskogo palladija byla pokryta bolee poloviny stoimisti sdelki

A predicate which precedes the qPP or qAP coordinates primarily with the nearest (i.e. the first) word of the quantified phrase, which is the approximative marker. Thus agreement in the singular feminine is not possible here. It should be noted that examples with a predicate in the singular feminine which precedes a qPP or qAP with the words *polovina* or *tret’* have not been detected in the NRC.

2. Predicate Agreement with qPPs or qAPs Including the Words *polovina* / *tret’* vs Predicate Agreement with Other Quantified Phrases

2.1. Predicate Agreement with qPPs or qAPs that contain the words *polovina* / *tret’* vs Predicate Agreement with qPPs or qAPs that contain numeral

The predicate agrees with qPPs or qAPs that contain a numeral (*okolo desjati chelovek/around ten persons*) in the default singular neuter form or in the plural. Unlike predicate
agreement with quantified phrases, such as *około poloviny, bolee tret’,* etc., in the sentences with qPPs or qAPs that contain a numeral, the predicate is more likely to take the singular neuter form.


*More than fifty specialists with the highest qualifications work for the racing department of “Gilera.”*

The singular neuter forms of predicate approximately twice more frequency that plurals (see Table 3).

**Table 3. Predicate Agreement with quantified phrases that include approximative marker**

<table>
<thead>
<tr>
<th>The predicate number</th>
<th>Singular neuter</th>
<th>Singular feminine</th>
<th>Plural</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td></td>
<td></td>
<td></td>
<td>100% (379)</td>
</tr>
<tr>
<td><em>The approximative marker + numeral</em></td>
<td>67% (944)</td>
<td>0</td>
<td>33% (464)</td>
<td>100% (1408)</td>
</tr>
<tr>
<td><em>The approximative marker + polovina</em></td>
<td>47% (178)</td>
<td>0,3% (1)</td>
<td>52.7% (200)</td>
<td></td>
</tr>
<tr>
<td><em>The approximative marker + tret’</em></td>
<td>41% (44)</td>
<td>2% (2)</td>
<td>57% (61)</td>
<td>100% (107)</td>
</tr>
</tbody>
</table>

The Pearson’s Chi-squared test shows that the difference in the ratio of plural and singular neuter predicate forms in the samples with the quantifiers *polovina, tret’* and numerals is significant.

The Chi squared value with Yates’ correction is 68.6, with 2 degrees of freedom, and the two-tailed P value is less than 0.0001. The association between the type of quantified phrase and the choice of the form of the predicate is considered to be statistically significant.

The strategy of agreement noticeably depends on type of quantified phrase.

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2 Table 3 shows the average values for samples with the words *polovina* and *tret’* (see Table 2).

3 The statistics were obtained using the calculator which is available at: [http://statpages.org](http://statpages.org)
2.2. The problem of predicate agreement with quantified phrases that include an approximative marker

Intuitively, the predicate seems to be required to agree in default with a quantified phrase that includes an approximative marker, since the head of the quantified phrase is a preposition or a comparative adverb which has no grammatical forms of number or gender. Thus it would be expected that the choice and the distribution of the agreement strategies should be the same with any quantified phrase that contains an approximative marker. But in reality the picture is more complicated. According to the data of the National Russian Corpus, the predicate more likely displays default agreement with qPPs and qAPs that include a numeral (see above the Table 3):

The predicate is more likely to take the plural (that is, be in semantic agreement) in sentences with qPPs and qAPs that contain the words polovina, tret’ (see Table 3 and Table 1).

The question is: why are the tendencies in predicate agreement with similar quantified prepositional and adverbial phrases so different?

Researchers agree that the syntactic structure of a quantified phrase with an approximative marker is complex. As mentioned above, Melchuk has convincingly shown that the feature of these quantified phrases is that the approximative marker can be omitted despite the fact that it is a head of quantified phrase (Melchuk 1985: 366-368). As well Babby argues that the preposition or the preposition and quantifier (numeral) can be omitted in noun phrase (in Babby terms) which has quantitative meaning (Babby 1985:99-100). An ambiguous structure in the quantified phrase can cause fluctuations in the choice of the form of the predicate. An example of omission of the approximative marker, in our opinion, is provided by sentences with a predicate that agrees in the singular feminine with qPPs and qAPs, including the words polovina and tret’ (see 1.3). In these cases the predicate coordinates with a quantifier (polovina or tret’) that is in the singular feminine. On this basis it can be argued that the quantifier as well as the approximative marker influences the choice of the predicate.

Thus, there are reasonable grounds to believe that the difference in the choice of agreement strategies in the sentences with qPPs and qAPs okolo/bolee/menee poloviny, okolo/bolee/menee treti, okolo/bolee/menee + numeral, etc., can be attributed to the properties of the quantifier.

In referring to the connection between predicate agreement and the type of quantifier, we should consider predicate agreement with noun phrases headed by polovina, tret’ or a numeral, for example:

7. Polovina studentov ujehala/ujehali na kanikuly
Half of students left for holidays

8. Tret’ stihotvorenij ne byla/ne byli izdana/izdany.
A third of the poems were not published.

9. V sorevnovani uchastvovali/uchastvovalo pjatnadcat’ sportmenov
Fifteen athletes took part in the competition.

Researchers indicate that the particular features of predicate agreement with a noun phrase which is headed by or includes a quantitative word is conditioned by the mixed morphosyntactic properties of such words [Suprun 1965, Corbett1979]. Krasovitsky, Corbett et al., expanding on Suprun’s ideas, have convincingly shown that numerals have features of both adjectives and nouns and, depending on the degree to which adjectival or noun features come into play, the predicate’s form is determined by the semantics of the whole NP “quantifier word + noun” and either takes the plural form (as is the case with numerals that are close to adjectives, such as dva, tri, chetyre) or coordinates the form with the quantifier and takes the singular form (the case for numerals relating to numbers greater than five, pjat’, the words neskol’ko, mnogo, malo and, particularly, nouns such as chast’, rjad, etc.) (Krasovitsky, Corbett et al. 2009:117-118; also Corbett 1979:71, 80).

The adjective-like behavior of the quantifier weakens its ability to serve as the head of a noun phrase (Corbett 1979:80).

It is exactly because quantifier words are grammatically heterogeneous that the syntactic structure of noun phrases which include a quantifier is so complicated. Without going into the details of the issue of the still-controversial issues regarding the head of a quantifier (for modern approaches see [Melchuk 1985, Corbett 1993]), we follow Corbett, whose point of view seems to be the most balanced and relevant to our research:

“We must, however, recognize that the head-position is a gradient notion, since case affects the degree to which the head shows head-like properties” (Corbett 1979:80).

As applied to the issue of predicate agreement, this means that “their behavior [i.e., that of numerals and other quantifiers] depends on the degree of “noun-ness;” the three main types are those that behave like adjectives (odin, nekotoryje), intermediate quantifiers (pjat, neskol’ko), and noun-like quantifiers (tysjacha, rjad)” (Corbett 1979:80).

This is fully confirmed by our observations regarding predicate agreement with many quantified subjects.
In this regard, the quantified prepositional and adverbial phrases *około/bolee/menee poloviny*, *około/bolee/menee treti*, *około/bolee/menee + numeral* are different. The quantifiers which are included in qPPs and qAPs have different morphosyntactic properties. The words *polovina* and *tret’* are nouns, and determine the form of the predicate to a «greater degree» than do numerals, as numerals have no number and gender and combine features of nouns and adjectives.

The differing properties of the nouns *polovina* and *tret’* on the one hand, and numerals on the other hand, are apparent in the rules of predicate agreement with these quantified phrases.

The predicate agrees mostly with noun phrases headed by *polovina* or *tret’* in the singular feminine (grammatical, full agreement). According to the National Russian Corpus, in samples of sentences with the word *polovina* for the period 2000 – 2014, the probability of a plural predicate is 89%, and the probability of a singular feminine predicate is 11%. In sentences with the word *tret’* the probability of a plural predicate is 76%, and the probability of a singular feminine predicate is 24% (Kuvshinskaya 2016, in press).


*So, half of the families in the village Asino lives on profits from the sale of birch workpieces.*

11.… **Tret’ studentov kinofaculteta nikogda ne slyshala o Tarkovskom ili Paradzanove!** (Izvestia, 2001.10.17).

*A third of the students of the film department has never heard about Tarkovskij or Paradzanov.*

The predicate predominantly agrees in the plural with numerals (semantic agreement) (Corbett 1998, Graudina et al., 1976:28 etc). According to the National Russian Corpus, in the samples with numerals for the period 2000 – 2012, the predicate takes the plural in 71% of the instances and takes the singular neuter in 29% of instances (Kuvshinskaya 2013).

12. **Segodnja v SSHA uze zivut sorok millionov nezastrahovannyh grazdan iz srednyh slojev** (Ekspert, 2004.12.20)*Today, in the USA, already four million citizens from the middle class live uninsured.*

Thus, grammatical (full) agreement is typical with the noun phrases headed by *polovina* and *tret’*, but semantic agreement is possible in rare contexts. Semantic agreement is typical for noun phrases with numerals, but default agreement is possible as well.
To understand the rules for determining the choice of predicate agreement according to various properties of the quantifier, we have assembled a chart showing the changes of the predominant type of agreement – moving from sentences with quantified phrases headed by the nouns *polovina* and *tret’* or numerals, to sentences with quantified phrases headed by *około, bolee*, etc.:

<table>
<thead>
<tr>
<th>Polovina, tret’</th>
<th>Bolee / svyshe poloviny, okolo / bolee / menee</th>
<th>Okolo / menee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntactic / semantic</td>
<td>semantic/default</td>
<td>semantic/default</td>
</tr>
<tr>
<td>Numeral</td>
<td>Okolo / bolee / svyshe + numeral</td>
<td></td>
</tr>
<tr>
<td>Semantic / default</td>
<td>Semantic / default</td>
<td></td>
</tr>
</tbody>
</table>

The bold face is used in this chart to indicate the predominant agreement type.

The chart shows that the following sequence of agreement type is observed, depending on the grammatical features of the head (distinguishing primarily on the level of gender and number characterization and whether grammatical behavior approximates that of nouns or adjectives and allows a word to serve as a phrase head with all the relevant functions):

1. syntactic;
2. semantic (if for some reason there is no syntactic agreement or if semantic agreement is required to express certain types of meaning);
3. default (if syntactic or semantic agreement is impossible or if it is required to express certain types of meaning).

Overall, this sequence is in line with the core patterns of predicate agreement in Russian: the typical pattern is alignment of the dependent word to the head word in terms of gender and number (and person) (Skoblikova 2005: 175-176, Corbett 1998: 3), i.e. syntactic/grammatical agreement (based on form). For cases in which the form is less clear, the predicate agrees based on the semantic meaning. The default agreement is agreement based on form in those cases where agreement is impossible due to the lack of the necessary characteristics of the subject (Corbett 1986:1003-1005). Thus the predicate takes the most specified form if the agreement is grammatical (full), and the unspecified form if the agreement is in default.
This means that in sentences including qPPs and qAPs with the words okolo/bolee/menee poloviny and okolo/bolee/menee treti, semantic agreement is chosen as the less definite type of predicate agreement in contrast with the syntactic (grammatical) agreement that is typical for noun phrases headed by the words polovina or tret’. Semantic agreement with noun phrases headed by polovina or tret’ is possible as well, but less probable. So the default agreement, i.e. a less-specified type than semantic agreement, is possible with qPPs and qAPs including the words polovina or tret’.

In sentences where the subject includes a numeral, such as bolee desjati studentov, due to the fact that the head of the quantifier phrase is not characterized in terms of gender or number, the singular neuter predicate is usually chosen, being a less specified form than the plural form that is typical for sentences with quantified phrases headed by a numeral (prishli desjat’ studentov).

Actually the rules that are described above are tendencies whose occurrence may be supported or prevented by any number of contextual factors.

3. Factors influencing the choice of predicate form in sentences with quantifier phrases containing an approximative marker and the words polovina and tret’

There are a number of contextual factors that impact the choice of the number of the predicate for sentences in which the subject is represented by quantifier phrases. Corbett convincingly shows that the most important factors are the animacy of the referent of the NP and word order (Corbett 1998). Other significant influencing factors are the meaning of the predicate (Skoblikova 1969:467-470; Robblee 1993; Golub 2008:372, Rozental 2010:260), the presence of conjoined (homogeneous) subjects and/or predicates in a sentence (Golub 2008:372, Rozental 2010:259), etc. (for more details about context factors see [Skoblikova 2005, Golub 2008:372, Rozental 2010:260, Belchikov 2012, Corbett 1998, Nikunlassi 2002, Kuvshinskaya 2013]).

According to NRC data, the choice of the form of the predicate in sentences with qPPs and qAPs which include the words polovina and tret’ is influenced by the same factors as in other sentences with quantified phrases, i.e. the factors listed above. In this paper we describe the effect of some of them, such as animacy, word order and topical (theme – rheme) structure.
3.1. Animacy

As the data from the RNC show, if the referent of a quantifier phrase is animate, the predicate is most likely to be in the plural, and if the referent is inanimate, we may in most cases expect the singular neuter or feminine (see Tables 4 and 5).


According to the fund “Public Opinion,” more than a third of Russian citizens fear that they could lose their job.


In the mid-60s, more than half of all air passenger traffic in the country was carried by the IL-18.

The rare occurrences of the predicate in the singular feminine in the past tense were not included in these statistics; we should, however, mention that in all such occurrences we saw an inanimate subject.

Table 4. Influence of animacy on predicate agreement with quantifier phrases, containing an approximative marker and “polovina”

<table>
<thead>
<tr>
<th>Subject</th>
<th>bolee poloviny</th>
<th>menee poloviny</th>
<th>około poloviny</th>
<th>svyshe poloviny</th>
</tr>
</thead>
<tbody>
<tr>
<td>The predicate number</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singular</td>
<td>Animate</td>
<td>Inanimate</td>
<td>Animate</td>
<td>Inanimate</td>
</tr>
<tr>
<td></td>
<td>21% (25)</td>
<td>81% (81+1 sing. fem. gender)</td>
<td>50% (9)</td>
<td>92% (11)</td>
</tr>
<tr>
<td>Plural</td>
<td>79% (104)</td>
<td>29% (32)</td>
<td>50% (9)</td>
<td>8% (1)</td>
</tr>
<tr>
<td>Total</td>
<td>100% (118)</td>
<td>100% (100+1)</td>
<td>100% (18)</td>
<td>100% (12)</td>
</tr>
</tbody>
</table>

Throughout the rest of this paper we will use the term “animate subject” to indicate that the QP’s referent is animate.
Table 5. Influence of animacy on predicate agreement with quantifier phrases containing an approximative marker and “tret”

<table>
<thead>
<tr>
<th>Subject</th>
<th>bolee treti</th>
<th>menee treti</th>
<th>oko lo treti</th>
</tr>
</thead>
<tbody>
<tr>
<td>The predicate number</td>
<td>Animate</td>
<td>Inanimate</td>
<td>Animate</td>
</tr>
<tr>
<td>Singular</td>
<td>30.4% (17)</td>
<td>66.7% (28)</td>
<td>29% (1+1 sg.f.)</td>
</tr>
<tr>
<td>Plural</td>
<td>69.6% (39)</td>
<td>33.3% (14)</td>
<td>71% (5)</td>
</tr>
<tr>
<td>Total</td>
<td>100% (56)</td>
<td>100% (42)</td>
<td>100% (7)</td>
</tr>
</tbody>
</table>

In sentences with the word polovina the association between the animacy of the noun in qPP or qAP and the form of the predicate is considered to be statistically extremely significant according to the Chi-squared with Yates’ correction and Fisher's exact test. For the samples containing bo lee poloviny the Chi-squared value is 64.829 with 1 degrees of freedom, and the two-tailed P value is less than 0.0001. For the sample with menee poloviny, Fisher's exact test shows a two-tailed P value of 0.0235, which is statistically significant. For the sentences with oko lo poloviny the two-tailed P value is less than 0.0001, which is extremely significant as well.

As for sentences including the word tret’, an extremely statistically significant correlation was found for the sample with bolee treti. Fisher's exact test shows a two-tailed P value of 0.0005.

The other samples, with menee treti and oko lo treti, do not contain enough data to allow a conclusion about statistical significance for the correlation between animacy and the choice of the form of the predicate.

Despite the obvious influence of animacy on the choice of the form of the predicate, it is possible that a non-typical predicate form will be chosen (e.g., singular forms if the quantified phrase includes an animate noun):

---

5 The statistics were obtained using the calculator which is available at http://graphpad.com/quickcalc/contingency2
15. … *Bolee poloviny truboprovodov prosluzili uze bolee 20 let.* (Gazovaja promyshlennost’, 2004.08.25).

*(More than half of the pipelines have served more than 20 years).*


*(So, around a third of our fellow citizens are willing to go to the Land of the rising sun for restoration work).*

### 3.2. Word Order

Statistical data convincingly demonstrate that the choice of the form of the predicate depends on word order in sentences with quantifier phrases including *bolee / menee / svyshe + polovina or tret’* (See Tables 6 and 7).

The correlation between word order and the choice of the form of the predicate is statistically significant in the sentences with the word *polovina*. For the sample with *bolee poloviny*, the Cchi-squared value is 21.082 with 1 degree of freedom, and the two-tailed P-value is less than 0.0001. Fisher's exact test shows a two-tailed P value of 0.0053 for the sample with *menee poloviny*, and for sentences with *okolo poloviny* – the two-tailed P-value is less than 0.0001.

Regarding the instances with the word *tret’*, Fisher's exact test confirms that the association between the word order and the choice of the form of the predicate is extremely statistically significant for the samples with *bolee treti* and *okolo treti*. The two-tailed P-value is 0.0071 for the sample with *bolee treti* and 0.0002 for the sample with *okolo treti*. As for sentences with *menee treti*, the data are insufficient to allow a statistical conclusion.
Table 6. Influence of word order on the predicate agreement with quantifier phrases, containing the word *polovina*:

<table>
<thead>
<tr>
<th>Subject</th>
<th>bolee poloviny</th>
<th>menee poloviny</th>
<th>okolo poloviny</th>
<th>svyshe poloviny</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicate number</td>
<td>Subject - predicate</td>
<td>Predicate</td>
<td>Subject - predicate</td>
<td>Subject - predicate</td>
</tr>
<tr>
<td>Singular</td>
<td>35% (64 sg.SG.n N.+1 SGsg.Ff.)</td>
<td>70% (40)</td>
<td>36% (5)</td>
<td>91.7% (11)</td>
</tr>
<tr>
<td>Plural</td>
<td>65% (121)</td>
<td>30% (17)</td>
<td>64% (9)</td>
<td>8.3% (1)</td>
</tr>
<tr>
<td>Total</td>
<td>100% (185 sg.n. +1 sg.f.)</td>
<td>100% (57)</td>
<td>100% (12)</td>
<td>100% (72)</td>
</tr>
</tbody>
</table>

Table 7. Influence of word order on predicate agreement with quantifier phrases, containing the word *treti*:

<table>
<thead>
<tr>
<th>Subject</th>
<th>bolee treti</th>
<th>menee treti</th>
<th>okolo treti</th>
</tr>
</thead>
<tbody>
<tr>
<td>The predicate number</td>
<td>Subject - predicate</td>
<td>Predicate - Subject</td>
<td>Predicate - Subject</td>
</tr>
<tr>
<td>Singular</td>
<td>34% (13)</td>
<td>81% (9)</td>
<td>43% (3 sg.n. +1 sg.f.)</td>
</tr>
<tr>
<td>Plural</td>
<td>66% (25)</td>
<td>19% (2)</td>
<td>57% (4)</td>
</tr>
<tr>
<td>Total</td>
<td>100% (38)</td>
<td>100% (11)</td>
<td>100% (7 sg.n. + 1 sg.f.)</td>
</tr>
<tr>
<td>-------</td>
<td>-----------</td>
<td>-----------</td>
<td>-------------------------</td>
</tr>
</tbody>
</table>

In inverted sentences, the predicate precedes the subject, i.e. it is followed directly by an approximative marker, which is followed by *polovina* or *tret’* and a countable noun. As a result, the choice of the predicate form is predominantly driven by the approximative marker that is the head of the quantified phrase. This drives a tendency to choose the singular neuter form for the predicate:

**17. Vprochem, akcii protesta podderzivajet bolee treti grazdan.** (Neprikosnovennyj zapas, 2003.03.16).

*(However, more than a third of the citizens support the protests).*

In sentences with direct word order, the countable noun immediately precedes the predicate, which probably makes it more likely that the verb form will be influenced by the meaning of plurality expressed by the quantified phrase as a whole and, in particular, by the countable noun:


*(More than half of the elderly face financial difficulties...)*

It is important to point out that, for the kind of sentences we are examining, direct word order is more typical: 75% of examples including the word *polovina* and 72% of examples including the word *tret’* have direct word order, which should favor the plural (semantic) agreement in the sentences under consideration. Precedence, appears here to be a non-typical form of sentence organization.

### 3.3. Theme-Rheme-structure

The influence that word order exercises on predicate agreement indicates that strategies of predicate agreement tend to be determined by pragmatic and communicative factors, primarily by the topical (theme – rheme) structure of a statement, as word order is one of the principal means by which topical structure is expressed.
The impact of communicative sentence structure on predicate agreement in sentences with numeral phrases was investigated by E.S. Sokolova, who proved that the predicate takes the plural if the quantified phrase is “characterized” (topic, theme), but that there are fluctuations in the choice of the predicate form if the quantified phrase is “characterizing” (rheme, focus). In these cases the predicate can take either the singular or plural (Sokolova 1998).

Our analysis of the role played by the communicative structure in the choice of predicate form in sentences with the words neskol’ko, stolko, mnogo, nemalo confirms that the topical structure of sentences influences predicate agreement. It has been found that, in general, the topical position (i.e. in the theme) of the subject favors plural agreement, while the focus position (i.e. in the rheme) favors – singular agreement (Kuvshinskaya 2015).

Below we will consider the influence of the topical structure on predicate agreement in sentences with prepositional and adverbial quantified phrases with an approximative meaning.

We use the terms “theme” and “rheme” as they are accepted in the Russian linguistic tradition, firstly in the works of T.E. Yanko, as well as in the works of I.I. Kovtunova et al. (Kovtunova 1976: 44-47; Yanko 2001: 23-34). Rheme is understood, after Janko, as a constituent component of a statement that is reported about the topic, and theme is thought to be a non-constituent component, the starting point. So “theme” and “rheme” are similar to, but do not completely coincide with, the concepts “the known” and “the new,” “topic” and “focus,” and “topic” and “comment” (see more details in [(Yanko 2001)]). There is moreover some difference in how the terms “topic” and “focus,” and, “topic” and “comment,” are interpreted by different researchers. In this paper we use terms “theme” and “topic” and, “rheme” and “focus” as synonyms, implying that the theme is a starting point and the rheme is a reported component of a statement.

The analysis of the theme-rheme structure involves examination of context and intonation and the determination of which word bears accent in a statement, so it is difficult to work with large amounts of data. Therefore the field of our study was limited to two samples: sentences with bolee poloviny and with bolee treti. First we considered the position of the quantified phrase in the topical structure, in the field of theme or rheme, and the dependence of the form of the predicate on the position of the subject in the theme-rheme structure.

The data from the NRC show that the theme-rheme structure of statements with the quantified phrases bolee poloviny and, bolee treti influences the predicate agreement (see Table 8).
Table 8. Influence of theme-rheme-structure on predicate agreement with quantified phrases, containing the word *tret’*:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Bolee poloviny</th>
<th>Bolee treti</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theme</td>
<td>Rheme</td>
</tr>
<tr>
<td>Predicate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singular neuter</td>
<td>36.5% (66)</td>
<td>64% (41)</td>
</tr>
<tr>
<td>Singular feminine</td>
<td>0.5% (1)</td>
<td></td>
</tr>
<tr>
<td>Plural</td>
<td>63% (114)</td>
<td>36% (23)</td>
</tr>
<tr>
<td></td>
<td>100% (181)</td>
<td>100% (64)</td>
</tr>
</tbody>
</table>

Fisher's exact test shows that the correlation between the position of the quantified phrase *bolee poloviny* and the choice of the predicate form is extremely statistically significant, with a two-tailed P-value of 0.0002. As for the sentences with *bolee treti*, the association is not statistically significant, with a two-tailed P-value of 0.0681. The amount of data seems to be insufficient to allow reliable statistical conclusions, however, and the percentage ratio tends to suggest that the choice of predicate depends on the subject position in the theme-rheme structure of statement.

The percentage ratio further shows that the influence of the position of the quantified phrase in the theme or rheme of a predicate agreement is polar: the frequency of plural agreement with a thematic subject is almost equal with the frequency of singular agreement with a rhematic subject (see Table 8).

If the quantified phrase is the rheme, i.e. focus or, center of a statement, then the statement reports the number of objects (see sentences 19 and, 20 below). The predicate mainly takes the singular neuter (default form) because it syntactically coordinates with the quantified phrase, headed by an approximative marker.
19. В этих девяти странах, таким образом, представлено более половины языков, существующих сейчас на нашей планете. (Nauka I Zizn’”, 2007).

(In these nine countries, therefore, more than half of all the languages now existing on our planet are represented).

20. Например, в системе британского Forin offisa на участках, связанных с торгово-экономическим сотрудничеством, трудится более трети от общего числа за границей рабочих. (Diplomaticheskij vestnik, 2004.06.29).

(For example, more than a third of the total number of foreign workers are employed in the British Foreign Office in the areas related to trade and economic cooperation).

If the quantified phrase is a theme, then the predicate often is a rheme, so that the action or the properties of the number of objects are in the focus. The predicate semantically agrees with the quantified phrase in such cases (see 21, 22 below).

21. За последние десять лет парк автобусов сократился в Самарской области почти на 20%. По данным экспертов, к настоящему времени более трети автобусов в Самарской области подлежат списанию, а минимальная потребность в новых машинах составляет 250-300 единиц. (Delo [Samara], 2002.10.23).

(Over the past ten years the bus fleet in the Samara region declined by almost 20%. According to the experts, by now more than a third of the buses in the Samara region are to be withdrawn, and the minimum requirement for new vehicles is 250-300 units).

22. Корпус бюрократов растет из года в год. На начало нынешнего года армия чиновников составляла 1 миллион 340 тысяч (без силовых ведомств). Более половины федеральных министерств имеют филиалы по всей стране. (Izvestia”, 2001.06.27).

(The number of bureaucrats is growing from year to year. At the beginning of this year the army of officials amounted to 1.34 million (excluding security agencies). More than half of the federal ministries have branches all over the country).

The subject of the sentence with a singular feminine predicate was the theme. Here plural agreement is not possible as the noun stoimost is singular. So the author of the text preferred full agreement to default agreement.
23. *Bolee poloviny stoimosti sdelki* byla *pokryta* postavkami rossijskogo palladija.


*(More than half of the transaction value was covered with Russian supplies of palladium).*

Statistics related to the effect of word order on the choice of predicate form seem to be similar to those characterizing the influence of theme-rheme structure of the statement on predicate agreement. For instance, the predicate generally agrees with the topical quantified phrase *bolee poloviny* in either the singular neuter (36.5% of instances) or in the plural (63% of instances). An analogous ratio of singular neuter and plural forms of the predicate is found in the sample of sentences in which *bolee poloviny* precedes the predicate (with 35% of examples agreeing in the singular neuter and: 65% in the plural). Conversely, the predicate agrees with the rhematic quantified phrase *bolee poloviny* in the singular neuter (64%) or in the plural (36%) and the ratio of the forms of the predicate is statistically close to that which is found in the sample in which the predicate precedes the quantified phrase *bolee poloviny* (70% of examples agreeing in the singular neuter and: 30% in the plural). But there is not complete statistical coincidence. There are cases in which the theme-rheme structure is expressed not by word order, but by intonation:

24. *Sejchas usloviya restrukturizacii ne vypolnjaut te kompanii, kotoryje uze fizicheski ne mogut pogasit sobstvennyje dolgi,* - govorit “Izvestijam” generalnyj director kompanii “Patera” Sergey Parhomenko. – *Blagodarya bolee mjagkim uslovijam* | *ne bolee treti predprijatij* vyberutsja is ekonomicheskaj jamy. (Izvestia, 2002.11.28.).

*(Now those companies that are already physically unable to repay their own debts do not fulfill the conditions of the restructuring, - the CEO of “Patera” Sergei Parkhomenko told Izvestiya. - Due to the softer conditions no more than one third of enterprises will get out of the economic hole).*

The subject is the rheme in this instance.

At the same time the word order not only conveys the communicative structure of the statement but also has independent significance for the predicate agreement. The speech is arranged linearly, so that the word order conditions the impact of that part of the quantified phrase that is the nearest to the predicate, on the form of the predicate.

In general the tendency is to plural agreement in sentences in which the quantified phrases *bolee poloviny* and, *bolee treti* are the theme, and to singular agreement in sentences in which the rhematic subject is consistent with what is observed in sentences with other quantifiers, particularly
in instances with prepositional and adverbial phrases which include an approximative marker and a numeral (for example, bolee desjati studentov – more than ten students).

We have analyzed the theme-rheme structure of 372 sentences with the adverbial quantified phrase bolee + numeral, drawn from the NRC. The data show that theme-rheme structure greatly influences the choice of predicate form in these sentences. Fisher's exact test confirms that the association between the position of a subject in the theme or the rheme and the choice of the form of the predicate is extremely statistically significant. The two-tailed P value is less than 0.0001.

If the quantified phrase is a rheme, the predicate tends to take the singular neuter and, moreover, the ratio of singular to plural forms of the predicate is very close to what we see in the samples with bolee poloviny and bolee treti.

If the quantified phrase “bolee + numeral” is a theme, the predicate tends to take the plural. Plural forms of the predicate are more frequent than in sentences in which bolee poloviny and bolee treti are the theme. This tendency is probably conditioned by the behavior of numerals and by the rules of predicate agreement with quantified phrases containing numerals. More precisely, there is a trend to plural predicate agreement with numeral phrases (Graudina et al.1976, Corbett 1998 etc) and, according to Sokolova (Sokolova 1998), the predicate takes only the plural when agreeing with a thematic numeral phrase. There is a good reason to believe that an adverbial quantified phrase with the approximative marker bolee and a numeral partly retains the features of a numeral phrase as an approximative marker can be omitted (see section 3) and it influences predicate agreement.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Bolee + numeral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicate</td>
<td>S -- rheme</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Singular neuter</td>
<td>70% (232)</td>
</tr>
<tr>
<td>Plural</td>
<td>30% (98)</td>
</tr>
<tr>
<td>Total</td>
<td>100% (330)</td>
</tr>
</tbody>
</table>

Table 8. Influence of theme-rheme-structure on predicate agreement with quantified phrase bolee + numeral
Conclusion

Thus, three strategies of predicate agreement (full syntactic, semantic and default) are possible in sentences with quantified prepositional and adverbial phrases which contain the words *polovina* and *tret’*. Semantic agreement is most probable, but, default agreement is frequent as well.

The choice of predicate form is determined primarily by morphosyntactic features of the quantified phrase. It is important to note that both the head of the quantified phrase (the approximative marker) and the quantifier influence predicate agreement. The approximative marker determines default agreement. The quantifier (more precisely, the quantifier phrase *poloviny/treti* [gen.sing.] + noun) favors a more specified predicate agreement than default agreement, but less specified than the type of agreement that prevails in sentences where this quantifier is the head of a quantified phrase (*Polovina studentov uehala na kanikuly [A half of the students have gone on holidays]*)).

The morphosyntactic features of quantified prepositional and adverbial phrases determine predicate agreement. At the same time the likelihood of the choice of a singular or plural form of the predicate is influenced by contextual factors. For the choice of predicate form in sentences with an approximative marker and the word *polovina* or, *tret’* the same factors are significant as in the sentences with other quantifiers, including: animacy, word order, and topical structure.

In the sentences considered in this paper, the high probability of semantic agreement is supported by the prevalence of “subject – predicate” word order and, accordingly, the position of the subject in the theme (topical position).

References


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