Russian predicates selecting remarkable clauses: Corpus-based approach and Gricean Perspective

Natalia Zevakhina & Alex Dainiak[*]

This paper reports upon the study of the lexico-grammatical distribution of Russian matrix predicates selecting *kakoj* remarkable clauses (or so-called 'embedded' exclamatives) in the Russian National Corpus, with some cross-linguistic parallels. It reveals that Russian matrix predicates belong to four conceptual classes: perceptual, mental, emotive, and speech. It shows that the phenomenon of 'embedded' exclamatives is irregular because: (1) matrix predicates seem to be lexically idiosyncratic and (2) the most frequent forms of matrix predicates (except for optatives) are on the way to be grammaticalized. The paper also suggests accounting for the observed distribution of predicates in terms of the Gricean maxims of conversation.

1 Introduction

To give an idea of the phenomenon under consideration, we present below some examples of 'embedded' exclamatives.

(1) Look what's happened to Rosemary's baby! (1975 TV movie)

(2) I'm amazed how tall John is! (Grimshaw 1979, p. 282)

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(3) You won't believe who Ed has married! (Huddleston 1993, p. 175)

Two opposite approaches to whether the structures in (1)–(3) are embedded exclamatives or embedded interrogatives have been proposed, see (Elliott 1974, Grimshaw 1979, Zanuttini & Portner 2003) vs. (Huddleston 1993, Abels 2005) among many others. There has been offered a number of arguments for and against each of these two views. However, for the current purposes, this debate seems to be irrelevant: both approaches are compatible with the view that we adhere in this paper. In what follows, we refer to the constructions under consideration as subordinate clauses with remarkable interpretation, or *remarkable clauses*.

Our goal in this paper is two-fold. The descriptive part reveals the lexical and grammatical distribution of matrix predicates which select remarkable clauses in the largest corpus collection of Russian texts, which is the Russian National Corpus (RNC). In particular, we discuss the following questions: what predicates select remarkable clauses as their complements; which semantic classes these predicates belong to; what lexical and grammatical properties they expose. The explanatory part accounts for the corpus findings in terms of the Gricean maxims of conversation.

The paper is structured as follows. Section 2 goes back to formal semantics studies which establish the taxonomy of English matrix predicates that embed exclamatives (remarkable clauses in our terms) only, interrogatives only, both or none. Section 3 presents cross-linguistic evidence for four conceptual classes of matrix predicates selecting remarkable clauses and reveals some lexico-grammatical peculiarities of such predicates. Section 4 discusses the lexico-grammatical distribution of *kakoj* 'what' (e.g., *Kakoj krasivyj dom* 'What a beautiful house!') remarkable clauses in the RNC. Section 5 accounts for the collected data in terms of the Gricean maxims of conversation. Section 6 concludes.

2   Exclamative-selecting vs. interrogative-selecting predicates

Studying exclamatives has commenced from studying so-called 'embedded' exclamatives.[1] To the best of our knowledge, the first prominent papers that shed light upon this issue were (Elliott 1974) and (Grimshaw 1979). The research question at that time (and later in (Abels 2004a, 2004b) among others) concerned the semantic

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[1]   In this section, we follow the authors' terminology and call remarkable clauses *embedded exclamatives*.

difference between matrix predicates embedding interrogatives and matrix predicates embedding exclamatives. Grimshaw (1979) pointed out that matrix predicates are semantically specified in the lexicon for whether they take interrogatives, exclamatives, both or none as their complements. In particular, she distinguished between semantic E and Q features, corresponding to exclamations and questions[2]: each predicate has zero, one or two of these features. Table 1, summarizing the data from these four sources, gives evidence for the distribution of matrix predicates embedding interrogatives and exclamatives. As we see, predicates like *believe* select neither interrogatives nor exclamatives, whereas predicates like *ask* and *wonder* allow for interrogatives but not for exclamatives. Emotive predicates take only exclamatives as their complements. Finally, verbs like *know*, *find out* and *realize* select both sorts of embedded clauses.

Table 1: Distribution of interrogative-selecting and exclamative-selecting predicates

	Embedded interrogative	Embedded exclamative
believe	#John believed how tall Mary is.	#John believed how (very) tall Mary is.
ask, *wonder*	John asked how tall Mary is.	#John asked how (very) tall Mary is.
emotive predicates[3]	#John was amazed how tall Mary is.	John was amazed how (very) tall Mary is.
know, *find out*, *realize*	John knows how tall Mary is.	John knows how (very) tall Mary is.

The explanation for the distribution proposed in (Elliott 1974) and (Grimshaw 1979) was that only factive predicates (originally introduced in (Kiparsky & Kiparsky 1970)) take exclamatives as their complements. This accounts for the fact that exclamatives, being complements of factives, are presupposed. Indeed, the sentence *John was amazed how tall Mary is* presupposes that Mary is tall. Moreover, factive uses of non-factive predicates, like *believe* in the form of *I can't believe* exemplified in (4), also allow for exclamatives.

(4) I can't believe how stupidly he's behaving. (Grimshaw 1979, p. 319)

Another implication is that non-factive predicates which do not allow for a factive reading (e.g., *claim*) do not select exclamatives, cf. (5).

(5) # I claim how very tall Bill is. (Elliott 1974, p. 239)

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[2] *Exclamations* and *questions* are utterances and typically (although not necessarily, at least in case of exclamations) correspond to *exclamatives* and *interrogatives*, which are clauses.

However, there are exceptions to this general rule. According to Grimshaw (1979) and Elliott (1974) not every factive predicate takes an exclamative as its complement. For instance, (6) illustrates infelicity of factive predicates *concede* and *admit* with embedded exclamatives. In (7), the two factive verbs are used with presupposed *that*-clause.

(6) # Bill will never concede/admit what a big salary he makes. (Grimshaw 1979, p. 323)

(7) Bill will never concede/admit that he makes a big salary. (ibid.)

Grimshaw (1979, pp. 323-324) adds other factive predicates to this list of exceptions: *be sufficient*, *make sense*, and *count*. As she points out, "it seems that while it is possible to predict the ill-formedness of exclamations with non-factives, the behavior of factives is to some extent idiosyncratic".[4]

   Furthermore, according to Grimshaw (1979) and Elliott (1974), not every form of a factive exclamative-selecting predicate takes an exclamative as its complement. On the one hand, the context of negated 1st person mental predicates called *a context of the speaker's ignorance* and exemplified in (8) does not allow for an exclamative. Compare contexts of non-negated 1st person form in (9) and of 3rd person form in (10) that take an exclamative.

(8) # I don't know what a fool Bill is. (Grimshaw 1979, p. 283)

(9) I know what a fool Bill is. (ibid.)

(10) John doesn't know what a fool Bill is. (ibid.)

On the other hand, as Elliott (1974) pointed out, impersonal negated forms of emotive predicates illustrated in (11) do not select exclamatives either. See a corresponding non-negated example (12) for comparison.

(11) # It is not amazing how beautiful this place is. (Elliott 1974, 241)

(12) It is amazing how beautiful this place is. (Googled)

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[4] Remarkably, literature sources show contradictory data with regard to some of the factive predicates. To illustrate, Zanuttini & Portner (2003, p. 46, ft. 11) points out that "*regret* does not allow wh-complements in general", whereas Elliott (1974, p. 237) presents the same predicate with a wh-complement, see (i).

(i) I regret how very much trouble I have caused you. (Elliott 1974, p. 237).

As an interim conclusion, factivity can explain only some of the data.

Abels (2004a, 2004b) argues against Grimshaw's semantic features E and Q and suggests that embedded exclamatives are of the same semantic type as interrogatives, that is of the type $\langle\langle s, t\rangle, t\rangle$. In doing so, he focused mostly on the distinction between emotive predicates embedding exclamatives (e.g., *be surprised*) and predicates embedding interrogatives (e.g., *wonder*).

There are three questions left after reading his papers. To begin with, among emotive exclamative-selecting predicates, only one of those (*be surprised*) is discussed throughout most of the paper, however, the conclusions are tentatively drawn for all emotive exclamative-selecting predicates, or *surprise*-predicates, by which the author meant all such predicates, see (Abels 2004b, p. 205), as well as for all their grammatical forms. To put it differently, exclamative-selecting predicates are treated indistinguishably; the same goes for their forms. However, as we show in Section 3, cross-linguistically, emotive predicates exhibit grammatical restrictions. To illustrate, (11) is infelicitous, whereas (12) is perfectly possible. Moreover, according to the Russian corpus data studied in Section 4, emotive predicates are diverse with respect to their lexico-grammatical distribution. Secondly, there is no discussion of non-emotive predicates like *know* and *find out*. Fortunately, we know from (Grimshaw 1979) among others that such predicates are specified for both interrogatives and exclamatives. Thirdly, *who*-exclamatives are mostly examined (with a few examples of *how*-exclamatives), however, the former are impossible in English main clause exclamatives: cf. (13).

(13) # Who Ed has married!⁵

To summarize, Abels (2004a, 2004b) mainly discusses *surprise* as a representative of the emotive predicate class regardless of lexico-grammatical restrictions among the predicates within this class, regardless of non-emotive exclamative-selecting predicate classes and with a strong emphasis on only one type of exclamative, *who*-exclamatives.

To conclude this section, factivity can only partly explain which predicates select remarkable clauses since not all factive verbs and not all grammatical forms of them allow for such clauses.

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⁵ English allows only for the following exclamative constructions: *what a* + NP, *how (very)* + adjective or adverb and *how many/much* + NP. Except for one example of *how*-exclamative briefly mentioned in Section 1, the rest of the exclamative constructions are not discussed at all by Abels.

3   Classes of predicates selecting remarkable clauses: Cross-linguistic perspective

To the best of our knowledge, no comprehensive cross-linguistic study which would determine the limits of variation among conceptual classes of matrix predicates selecting remarkable clauses in natural languages has beem undertaken. Judging by the data found in the literature, we tentatively distinguish among four such classes: perceptual, emotive, mental, and speech. This suggests that the variety of predicates selecting remarkable clauses is limited to these classes. Indeed, Ono (2006) reports on emotive predicates (e.g., 'be surprised'[6] and 'be amazed'), mental (e.g., 'think') and speech (e.g., 'say') in Japanese; Lipták (2006) mentions Hungarian emotive predicates; Potsdam (2011) gives evidence for Malagasy emotive predicates; Visan (2000) discusses mental and perceptual predicates in Mandarin Chinese, and De Urbana & Hualde (2003) exemplifies the use of Basque emotive and perceptual predicates, cf. (14) and (15).

(14) Basque

Arrituko   zinake,   ezer-en indarr-ik   gabe   eta esku
be.surprised.PROSP 2SG.AUX.POT any-GEN force-PART without and hand
bat-ekin   zer   gauza-k   egi-ten ditu-en!
one-COM what thing-PL do-IPF AUX.TR-COMPL

'You would be surprised what things he can do without any force and with the help of only one hand!' (De Urbana & Hualde 2003, p. 565-566)

(15) Basque

Beha za-zu   nola ari d-en!
look AUX.IMP-2SG.A how act AUX-COMPL

'Look at the way he plays!' (ibid.)

The emotive class seems to be the most frequently mentioned. According to Michaelis (2001), emotive predicates are one of the cross-linguistic features of exclamatives: they are witnessed, e.g., in Palestinian Arabic, Mandarin Chinese, Croatian, French, Italian, Malay, Setswana, Turkish.

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[6]   We give only English translations here and further.

However, for the time being, it is hard to infer whether all the four classes of predicates are necessarily present in a given language. It goes without saying that a thorough cross-linguistic investigation is needed.

Moreover, the classes of predicates exhibit lexical variation: not all predicates of a given class select remarkable clauses. To illustrate, Ono (2006) points out that Japanese distinguishes between mental predicates like 'think' and like 'know': the former are felicitous, whereas the latter are not, cf. (16) and (17).[7]

(16) Japanese

John wa Mary ga   nante takusan no   hon o   yon-da   no
John TOP Mary NOM what many   GEN book ACC read-PST NML

da-roo   ka to   omotte-iru.
COP-PRSM Q COMP think-PROG

'John thinks how many books Mary has read.' (lit., Japanese corpus "Kotonoha")

(17) Japanese

#John wa   Mary ga   nante takusan no   gakusee ni   okotta no
John   TOP Mary NOM what many   GEN student DAT angry NML

da-roo   koto to   sitte-iru.
COP-PRSM NML COMP know-PROG

'John knows how very many students Mary got angry at.' (Ono 2006, p. 51)

Also, Japanese distinguishes between speech predicates like 'say' and like 'claim': again, the former are felicitous, in contrast to the latter.

Conceptual classes of predicates that select remarkable clauses are subject to not only lexical but also grammatical variation. For instance, Castroviejo (2006) points out that Catalan perceptual predicates are used only in the forms of imperatives, yes-no interrogatives and future tense declaratives, cf. (18)–(20) respectively.

(18) Catalan

Mira   quin home tan graciós que   surt   per   la   tele!
look.IMP what man   so   funny COMP go.3SG PREP DF television

'Look, what a funny man is on TV!' (Castroviejo 2006, p. 16)

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[7] Remarkably, in English, it is the other way round.

(19) Catalan

> *Has   vist   quin noi tan alt que   van   amb bici?*
> AUX.2SG see.PASS.PTCP what boy so   tall COMP go.3SG PREP bicycle

> 'Have you seen what a tall boy is riding a bike?' (ibid.)

(20) Catalan

> *Ja   veuràs   que   bé   que   ens   ho   passarem.*
> already see.FUT.2SG COMP good COMP REFL.1PL this.ACC spend.FUT.1PL

> 'You'll see what a great time we'll have.' (ibid.)

Visan (2000) points out that Mandarin Chinese perceptual predicates solely allow for imperatives.

To recapitulate, firstly, cross-linguistically, the semantic diversity of matrix predicates that select remarkable clauses seems to be limited to four conceptual classes: perceptual, emotive, mental, and speech. Secondly, the felicitousness of lexical items that belong to these four classes and their grammatical forms is subject to typological variation. In what follows, we regard frequency distributions of lexemes of the four predicate classes and their forms in the RNC and explain their behavior in terms of the Gricean maxims of conversation.

4   Russian predicates selecting remarkable clauses: Corpus perspective

Russian allows for the following wh-words in main clause exclamatives: *kakoj* 'what' + NP (in an attributive position) and *kakov* 'what' (in a predicative position), *kak* 'how', *skol'ko* 'how many/much', *kto* 'who', *čto* 'what' (in an argument position), *gde* 'where' (location), *kuda* 'where' (direction), *kogda* 'when' and *počemu* 'why'.[8] Amongst this diversity, we limited our research to *kakoj* remarkable clauses and leave the rest for future investigation.

We studied the predicates that select *kakoj* remarkable clauses in the Main corpus of the RNC. The RNC is an open and constantly updated internet resource that contains a considerable collection of written and oral Russian texts (http://www.ruscorpora.ru/en). The Main corpus consists of 230m tokens and

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[8] The latter two are possible in main clause exclamatives if they are somehow contextually supported: e.g., with help of the particle *nado že*.

includes written prose texts of various genres and styles from the mid-18th century to the present.

The search query in the Main Corpus of the RNC was as follows. Since we did not know which predicates select *kakoj* remarkable clauses and our goal was to collect most, if not all, of them, we searched for a verb at a distance of 1 word before *kakoj* that was at a distance from 1 to 20 words before an exclamation mark (it has a special label "bexcl" in the RNC).

We found 1 213 contexts and browsed through all of them selecting manually relevant contexts with a remarkable interpretation of *kakoj*. Afterwards, we intended to examine other contexts of each found matrix verb; in that case, the search query was identical to the previous one, except that the matrix predicate had to be at a distance of 2–5 words to *kakoj*.

In both corpus search queries, we looked at the sentences with exclamation marks. Generally, remarkable clauses do not require the use of an exclamation mark *per se*.[9] Also, they do not require the use of a dot either. The examples of remarkable clauses in the literature do not follow the same pattern: some of them end with a dot, whereas the others contain an exclamation mark (e.g., (3) vs. (4) with quite similar forms of the same predicate in the very same language). The advantage of considering solely sentences with an exclamation mark is that it helped us narrow down the set of relevant constructions in the corpus. The study of only such contexts does not seem to skew the results. To illustrate, the search query with an exclamation mark revealed a relatively small number of emotives (unexpected for the general theory of exclamatives), with *udivitel'no* as the most frequent item. However, their behaviour does not considerably differ in case of a dot at the end of a sentence: again, *udivitel'no* was the the most frequently occurring item in the corpus search (cf. Figures 4 and 5 in the Appendix). In other words, contexts with an exclamation mark reveal general tendencies of item frequencies that become more salient in dot-contexts. This certainly does not exclude studying dot-contexts. We only predict that such a study will not reveal an entirely new picture of the lexico-grammatical distribution of predicates. A more general research goal is to reveal (prosodic) conditions of which punctuation mark to use.

Having supplemented our collection of relevant contexts, we calculated instances per million (IPMs) for each witnessed grammatical form of each matrix lexeme

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[9] We thank an anonymous reviewer for this comment.

using the following formula:

$$\frac{\text{number of the item instances in the search}}{\text{number of tokens in the corpus}}$$

In what follows, we present the results of our corpus study. We successively discuss the lexico-grammatical distribution of the predicates which belong to the four conceptual classes: perceptual, mental, emotive, and speech.

4.1 Perceptual predicates

The data (IPM rates) for perceptuals exemplified in (21) and (22) selecting *kakoj*-remarkable clauses as their complements are in Figure 1 in Appendix.

(21) Russian

Smotrite,   *kakie*
look.IMP.2PL what.NOM.PL
u   *menja*   *v etom*   *godu*   *tykvy*   *vymaxali!*
PREP 1SG.GEN in this.DAT.SG year.DAT.SG pumpkin.NOM.PL grow.PST.PL

'Look what pumpkins grew in my garden!' (RNC)

(22) Russian

Vidiš,   *kakuju*   *xorošuju*   *kvartiru*   *nam*
see.PRS.2SG what.ACC.SG good.ACC.SG appartment.ACC.SG 1PL.DAT
Serjožen'ka   *našol!*
Serjožen'ka.NOM find.PST.SG

'Do you see what a good apartment Serjožen'ka has found us!' (RNC)

As can be seen from Figure 1, the most frequent grammatical forms of perceptual predicates are as follows: imperatives (*smotri* (IPF) / *posmotri* (PF) 'look!', *slušaj* (IPF) / *poslušaj* (PF) 'listen!'), optatives in the form of subjunctive mood (*esli by ty videl / videl by ty* 'if you had seen!'), 2nd person interrogative (*vidiš?* 'can you see?').[10]

The most frequent lexical items are verbs of vision and hearing, namely *smotret'* (IPF) / *posmotret'* (PF) 'look', *videt'* 'see' (but not its perfective counterpart). They are stylistically neutral and very frequent in everyday discourse.

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[10] Here we give examples in singular forms. However, plural forms are also felicitous.

4.2 Mental predicates

Figure 2 in Appendix graphically displays IPM rates for mentals and *kakoj* remarkable clauses exemplified in (23)–(26).

(23) Russian

Vy   ne   predstavljaete   sebe, kakoe   zrelišče
2PL.NOM NEG imagine.PRS.2PL self   what.NOM.SG spectacle.NOM.SG
predstalo   pered   nami!
appear.PST.SG in.front 1PL.INSTR

'You can't imagine what appeared in front of us!' (RNC)

(24) Russian

Predstavljaju,   kakie   budut   probki!
imagine.PRS.1SG what.NOM.PL be.FUT.PL traffic.jams.NOM.PL

'Imagine what the traffic will be like!' (Newspaper "Arguments and Facts", 2001)

(25) Russian

Znaeš,   kakaja   očered'   byla!
know.PRS.2SG what.NOM.SG queue.NOM.SG be.PST.SG

'Can you imagine what a queue there was!' (RNC)

(26) Russian

Esli by   vy   znali,   kakie my   s   nim
if   SUBJ 2PL.NOM know.PST.PL what 1PL.NOM with 3SG.INSTR
druz'ja!
friend.NOM.PL

'If only you knew what close friends we are!' (RNC)

As Figure 2 clearly shows, the most frequent grammatical forms are optatives (*esli by ty znal / znal by ty* 'if you knew!'), 1st person positive and negative declaratives (*predstavljaju* 'I can imagine', *ne predstavljaju* 'I can't imagine'), 2nd person negative declaratives (*ne predstavljaeš* 'you can't imagine'), 2nd person interrogatives (*znaeš?* 'do you know?', *ponimaeš?* 'do you realize?').[11]

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[11] Here we give examples in singular forms. However, plural forms are also felicitous.

The most frequent lexical items are *predstavljat'* (IPF) / *predstavit'* (PF) 'imagine', *znat'* (IPF) 'know' (but not its perfective counterpart *uznat'* 'find out') and *podumat'* (PF) 'think' (but not its imperfective counterpart *dumat'* 'think').

Comparing perceptual and mental predicates, we can conclude that they behave differently: perceptuals primarily occur in imperatives, whilst mentals principally take the forms of optatives, 2nd person interrogatives and 2nd person or 1st person declaratives. Notably, the perceptual verb *videt'* 'see' semantically behaves like a mental predicate since it mostly occurs in optatives and 2nd person interrogatives. A possible explanation can be that this verb, denoting perception, implies information processing in the receiver's mind.

4.3   Emotive predicates

The next class is emotives illustrated in (27) and (28). The data (IPM rates) for them with *kakoj* remarkable clauses are given in Figures 3 and 4.

(27) Russian

Udivljajus',   s   kakoj   ostrotoj   i   kak polno
surprise.PRS.1SG with what.INSTR.SG sharpness.INSTR.SG and how fully

pronjos   čerez   žizn'   vsjo   bogatstvo   svoix
carry.PST.SG through life.ACC.SG all.ACC.SG richness.ACC.SG 3.GEN.PL

detskix   vpečatlenij!
child.GEN.PL experience.GEN.PL

'I am surprised of the sharpness and integrity that he carried his childhood experience through his whole life with.' (RNC)

(28) Russian

Udivitel'no, kakoe   u   nego   tončajšee
surprising   what.NOM.SG PREP 3SG.GEN subtle.NOM.SG

vosprijatie   intonacii,   vyraženija   lica,
perception.NOM.SG intonation.GEN.SG expression.GEN.SG face.GEN.SG

žestov!
gesture.GEN.PL

'It's surprising how fine his perception of intonation, mimic and gestures is.' (RNC)

Initially, we calculated IPM rates for emotives in exclamation mark contexts. The fact that they were relatively few was unexpected for the theory of exclamatives since it predicts that embedding under emotives is a characteristic of exclamatives (cf. Michaelis (2001), among others). Therefore, we calculated IPM rates for emotives in dot contexts. Interestingly, their frequencies did not considerably change and generally they are still lower than those of perceptuals and mentals. Moreover, both sorts of contexts (and Figures 3 and 4 demonstrate that) reveal the same pattern: the most frequent emotive embedding remarkable clauses is *udivitel'no* 'it's surprising'.[12]

4.4 Speech predicates

Finally, let us look at speech predicates embedding *kakoj* remarkable clauses illustrated in (29). It is important to note that remarkable clauses do not encode direct speech. Figure 5 presents IPM rates for each speech predicate.

(29) Russian

Nado   li govorit', v kakom   nastroenii   ja   pela
necessary Q say.INF in what.DAT.SG mood.DAT.SG 1SG.NOM sing.PST.SG
spektakl'   dal'še...?!
performance.ACC.SG further

'Do I need to say in what kind of mood I was singing in the rest of the performance...?!' (RNC)

Figure 5 shows that speech predicates occur in contexts of remarkable clauses, however, they are the least frequent items among all of the studied predicate classes.

4.5 Towards grammaticalization of predicates

As stated, the most frequent grammatical forms of predicates are as follows: imperatives *smotri* (IPF) / *posmotri* (PF) 'look!', *slušaj* (IPF) / *poslušaj* (PF) 'listen!', 2nd person declaratives *podumaeš* 'you think', 2nd person interrogatives *vidiš?* 'do you see?', *znaeš?* 'do you know?', *ponimaeš?* 'do you understand?', 1st person

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[12] Morphologically, this predicate is an adjective (short form, neutral gender), like some other items from Figures 3 and 3 that have "it's" component in their English translations (e.g., *neverojatno* 'it's unbelievable', *porazitel'no* 'it's astonishing'). Therefore, for such predicates, the forms 1st and 2nd person are non-applicable.

positive and negative declaratives (*predstavljaju* 'I can imagine', *ne predstavljaju* 'I can't imagine'), 2nd person negative declaratives (*ne predstavljaeš* 'you can't imagine'), optatives *esli by ty znal/ znal by ty* 'if only you knew!', *esli by ty videl / videl by ty* 'if you had seen!', *udivitel'no* 'it's surprising'.

We assume that most of them (probably except for optatives) are on the way to be grammaticalized for 5 reasons. First, their grammatical variation seems to be limited to the listed forms (both singular and plural), except for *podumaeš*, which is grammaticalized to a higher degree than the rest (it allows only a singular form), and *udivitel'no*, which morphologically does not have a plural form. Second, their semantics is not transparent; e.g., the questions expressed by interrogatives can be answered neither positively nor negatively. Third, they are used without personal pronouns. Fourth, their position just before a remarkable clause seems to be the most natural (positions inside or after a clause are less felicitous).[13]

Cross-linguistically, a similar phenomenon is witnessed in Archi and Agul (< East-Caucasian). According to Kalinina (2011), in these languages, verbal predicates 'look' and 'see' function as discourse markers,[14] cf. Archi example (30) for 'look'. Notably, in contexts of remarkable clauses, 'look' always has the imperative form and 'see' always has the past (aorist) form.

(30) Archi

    Wajo,   os   sa<r>k:e,   godo-w lo   χab-kul   uw-na
    INTERJ once F.look.IMP this-M child fast-NML M-do-PF-CONV.IRR

    heˤršur-t:u!
    run.IPF-ATTR.M

    'Oh, just look, the boy is running so fast!' (Kalinina 2011, p. 162)

5 Russian data
through the prism of the Gricean maxims of conversation

This section describes the conceptual semantics and lexico-grammatical frequencies of Russian matrix predicates in terms of the Gricean maxims of conversation.

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[13] On the contrary, optatives still seem to be semantically transparent; personal pronouns are obligatory in their case; they are used not only in the forms of the 2nd person (singular and plural) but also in the forms of the 3rd person, although the 2nd person forms are much more frequent than the 3rd person.

[14] Although (Kalinina 2011) describes this phenomenon differently, we still think it is quite similar to ours.

For both main clause exclamatives and their subordinate counterparts, we introduce a speaker-dependent pair of mappings $(g_{\text{expected}}, g_{\text{real}})$, each of which assigns a degree on a scale shared by these mappings. g_{expected} stands for the speaker's expectation of the degree of the gradable feature of object x, whereas g_{real} denotes the speaker's evaluation of the degree. The exclamative utterance meaning can be modelled by the relation $g_{\text{real}}(x) \gg g_{\text{expected}}(x)$.[15]

To illustrate, consider the sentence *What a tall man I saw yesterday!*. The real value of tallness of x (x is a member of some ontological category and this category implies particular norms of the expressed gradable feature – in the example, this is the particular man the speaker saw yesterday) is greater than the expected norm for this category.

By gradable feature we mean not merely a predicate that has to be gradable but also any implicit gradable aspect of a situation. For example, if a language allows for predicate-elliptical constructions like *What a man I saw yesterday!*, relying on the context of utterance, the hearer has to decode the particular feature of a person under consideration: cleverness, braveness, tallness, etc.

From the point of view of pragmatics, we employ the expressive illocutionary force operator introduced in (Rett 2008), (Rett 2011) which was originally defined in terms of gradable predicates and can be reformulated in our terms as follows:

(31) E-Force(p), for proposition p uttered by a speaker, is appropriate in a given context C if inequality $g_{\text{real}}(x) \gg g_{\text{expected}}(x)$ holds for the speaker's expected degree of a given gradable feature of x in C and the speaker's evaluation of the real degree of x's feature.

Furthermore, for remarkable clauses, the presence of the E-Force operator is a necessary condition. It means that speaker's surprise always holds, even when the grammatical subject of a given sentence with an embedded remarkable clause is 2nd or 3rd person. In other words, we might say that the speaker somehow assigns her belief to the hearer or to the person being talked about. To illustrate, whilst

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[15] g_{expected} is not always what can be called a speaker's direct expectation, but rather a representation of common knowledge shared between the speaker and the hearer. E.g., in *Look how high John can jump!* we would say that g_{expected} can reflect speaker's direct expectation if the speaker is unaware of John's ability, but we cannot consider so if the speaker is John's close friend who has seen this kind of jumping many times before and only made his utterance to attract hearer's attention to the difference between John's ability and that of an ordinary man. In the latter case, expected in g's subscript actually refers to speaker's expectation of the hearer's state of knowledge.

uttering sentences *You won't believe what a tall man I saw yesterday!* or *She won't believe what a tall man I saw yesterday!*, the speaker is surprised at some degree and shares, or perhaps better to say, aligns her knowledge with the hearer's or with the 3rd person's.

Moreover, we might think of the Gricean maxims as regulators of the tendency of the predicate class use. In what follows, we only discuss the use of those grammatical forms which reflect (in)direct speaker-hearer interaction, namely the use of imperatives, optatives, 2nd person interrogatives and 2nd person negative declaratives. Hence, we do not account for the speaker's own beliefs expressed by virtue of 1st person declaratives and for speaker-hearer established mutual knowledge conveyed with help of positive 2nd person declaratives.

We argue that the frequency distribution of forms of mental and perceptual predicates depends on the possibility of witnessing in a given context. By the possibility of witnessing we mean that at the moment of the utterance the hearer can witness the degree of object's feature. E.g., in *Look how tall my house is!*, there is the presupposition of the hearer's possibility of seeing the house, whereas in *If you only knew how tall my house is!*, it is presupposed that the hearer cannot witness the height of the house at the moment of utterance.

The following analysis is based upon the assumption that the speaker's primary goal of using a remarkable clause is to change the hearer's mental state and upon the scheme "actions $\xrightarrow{\text{cause}}$ mental states" (that is, the speaker's belief that some hearer's actions imply a change in the hearer's mental state). Moreover, we assume that the probability that the hearer will change her mental state is higher if she witnesses the object herself.

As the Brevity submaxim (of the Manner maxim) states not to be verbose, it is sufficient for the speaker only to prompt the hearer's action (in a witnessing-possibility situation), and the most common way is to use imperative. To give an example, if the speaker exclaims *Look how funny she is!* or *Listen how beautifully she is singing!*, she induces the hearer to perceptually evaluate the given situation and, consequently, encourages the hearer to share her attitude towards that. This accounts for why there is a high frequency in the corpus for using imperatives in case of perceptual predicates. The exception is *videt'* 'see' that is used in the form of optatives and interrogatives rather than in the form of imperatives. This is partially explained by the fact that in the studied sentences, *videt'* functions as a mental rather than perceptual predicate ('see' ≈ 'understand').

In witnessing-impossibility situations, the speaker cannot provide a witness for her belief but, nonetheless, wishes the hearer to align her mental state with that of the speaker's, which correlates with using optatives. As a direct perceptual action in such a context is impossible, the use of perceptual predicates is ruled out. In this case, the scheme "actions $\xrightarrow{\text{cause}}$ mental states" lacks the first element and the most natural way of conveying mental states is using mental predicates. Consequently, we are left with mental predicates in optative forms. Mental predicates also exist in two other forms, which are 2$^{\text{nd}}$ person interrogatives and 2$^{\text{nd}}$ person negative declaratives; however, their total frequency rate is much lower than that of optatives.[16]

Emotive predicates[17] violate the Brevity submaxim (of the Manner maxim) since the speaker-hearer alignment of information involves duplicate communication of expressive content in the case of emotive predicates (i.e., main clause predicates). Hence, the use of emotive predicates seems to be redundant.

Finally, we hypothesize that main clause exclamatives do not necessarily imply the hearer (i.e., they can be uttered in case of the hearer's absence). However, subordinate remarkable clauses always involve the hearer, with whom the speaker wants to share her emotion. This can serve as a plausible explanation for why the 2$^{\text{nd}}$ person sentences in the forms of imperatives, optatives, declaratives, interrogatives are much more frequently employed than the 3$^{\text{rd}}$ person sentences (1$^{\text{st}}$ person sentences do occur but not as frequently as the 2$^{\text{nd}}$ person ones).

6   Conclusion

In this paper, firstly, we show that the existing formal semantic accounts can only partially explain the distribution of matrix predicates embedding remarkable clauses. Relying on cross-linguistic data, we tentatively suggest distinguishing among four conceptual classes of matrix predicates — perceptual, mental, emotive, and speech.

Secondly, on the basis of corpus data from the RNC, we study lexico-grammatical distribution of Russian matrix predicates selecting remarkable clauses. The most

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[16] However, there is an exception to this general trend. It concerns the imperative *predstav'* 'imagine' that directly stimulates the hearer to obtain a particular mental state. This can be explained by the fact that almost anything can be imagined directly without any help from the senses. So imagining something can be thought of as a direct mental action.

[17] We do not account for speech predicates in this paper since their semantics is mostly idiosyncratic.

frequent grammatical forms (except for the optatives of *znat'* 'know' and *videt'* 'see') have started losing the status of matrix predicates and are on the way to be grammaticalized, with *podumaeš* being at the final stage of this process. Generally, the phenomenon of 'embedded' exclamatives is irregular (compared to, e.g., embedded interrogatives): matrix predicates that select exclamatives demonstrate lexical and grammatical idiosyncrasy and low corpus frequencies.

Thirdly, we argue that the conceptual semantics and lexico-grammatical peculiarities of matrix predicates can be accounted for in terms of the Gricean maxims of conversation.

Abbreviations

2 — 2nd person, 3 — 3rd person, A — Agent, ACC — Accusative case, ATTR — Attributive, AUX — auxiliary verb, COM — comitative affix, COMP — complementizer, COMPL — marker of subordinate clause, CONV — Converb, COP — copula, DAT — Dative case, DF — Definite, FUT — Futurum, GEN — Genitive case, IMP — Imperative mood, INF — Infinitive, INSTR — Instrumentalis, INTERJ — Interjection, IPF — Imperfective, IRR — Irrealis, M — Masculine gender, NEG — Negation, NML — Nominalizer, NOM — Nominative case, PASS.PTCP — Passive Participle, PF — Perfective, PL — Plural, POT — Potential mood, PREP — Preposition, PROG — Progressive aspect, PROSP — Prospective tense, PRS — Praesens, PRSM — Presumptive, PST — Past, REFL — reflexive marker, SG — Singular, SUBJ — Subjunctive, TOP — Topicalizer, TR — Transitive marker.

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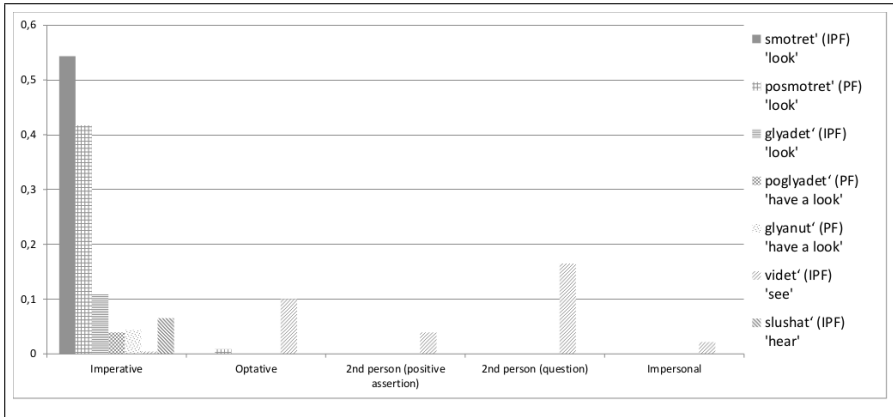
Appendix

Figure 1: *kakoj* remarkable clauses with perceptual predicates (sentences ending with exclamation mark)
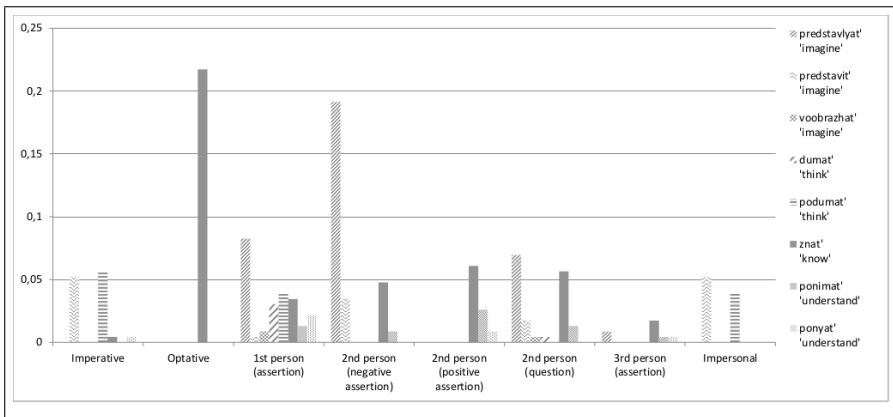

Figure 2: *kakoj* remarkable clauses with mental predicates (sentences ending with exclamation mark)
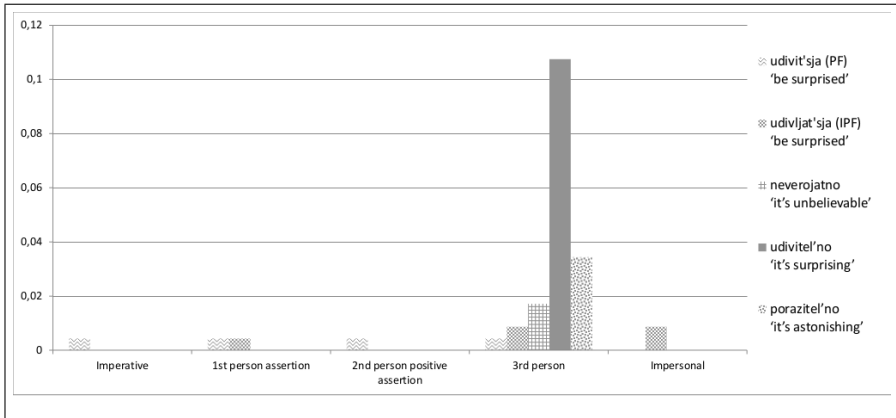
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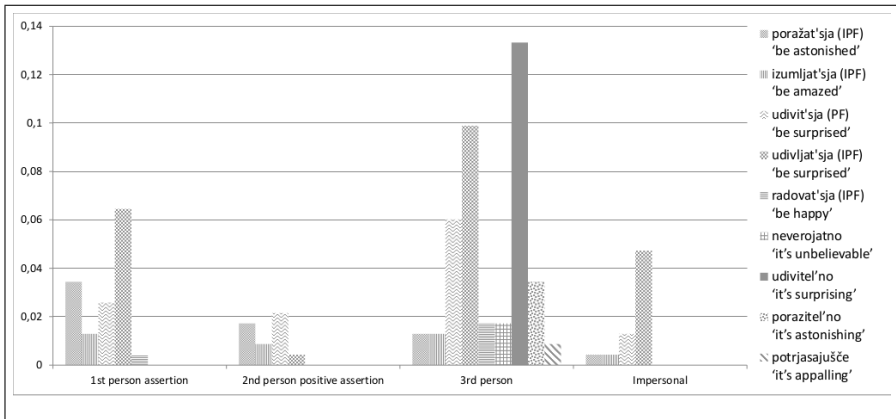Figure 3: *kakoj* remarkable clauses with emotive predicates (sentences ending with exclamation mark)

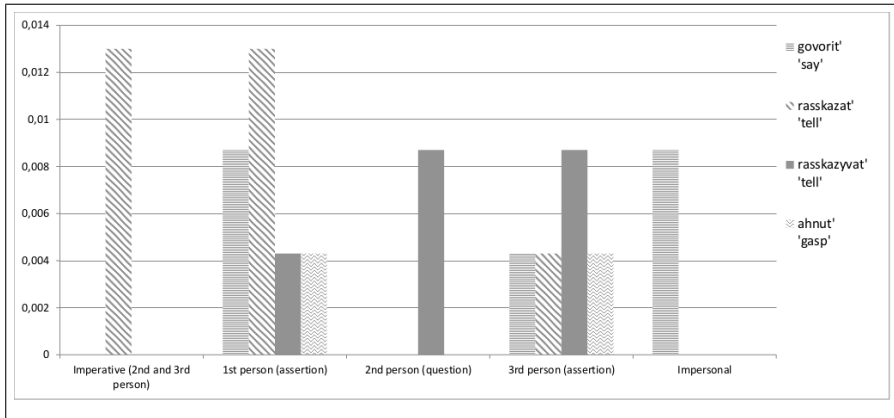Figure 4: *kakoj* remarkable clauses with emotive predicates (sentences ending with dot)

Figure 5: *kakoj* remarkable clauses with speech predicates (sentences ending with exclamation mark)

Authors

Natalia Zevakhina
National Research University Higher School of Economics
Moscow
nzevakhina@hse.ru

Alex Dainiak
Moscow Institute of Physics and Technology
dainiak@phystech.edu