



Russian prefixed verbs as constructional schemas

Русские приставочные глаголы в свете грамматики конструкций

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Abstract This study tests the morphological gradience theory on Russian prefixed verbs. With the help of a specially designed experiment, in which participants were asked to evaluate the semantic transparency of a prefixed nonse verb given in minimal context, as well as to semanticise it by suggesting an existing Russian verb with the same prefix, we offer evidence that these verbs can be analysed as constructional schemas and that the degree of their morphological decomposition depends upon the different levels of activation of their sequential and lexical links. We prove that speakers of Russian are very sensitive to the etymological connection between verb prefixes and the prepositions they are related to. Thus, prefix-stem constructions with prefixes that correspond to prepositions are more likely to be morphologically decomposed, while prefix-stem constructions with prefixes that do not relate to prepositions tend to be regarded as single lexical units. Moreover, the general, highly abstract semantics of Russian prefix-stem constructions, especially of those that retain their ‘prepositional’ meaning, is undoubtedly accessible to language users, which is confirmed by the fact that the interpretability of these constructions is affected by priming.

Аннотация Целью настоящего исследования является проверка теории морфологической градиентности на материале русских приставочных глаголов. С помощью эксперимента, в котором участникам было предложено оценить семантическую прозрачность глаголов с реальными приставками и вымышленным корнем, а также семантизировать их, подобрав им на замену существующие русские глаголы с теми же приставками, мы показываем, что эти глаголы могут анализироваться как морфологические конструкции (в смысле грамматики конструкций), легкость декомпозиции которых зависит от уровня контекстной активации их синтагматических и парадигматических связей. В статье приводятся доказательства того, что конструкции с приставками, совпадающими по форме с предлогами, с большей легкостью подвергаются декомпозиции, тогда как конструкции с приставками, не имеющими предложных аналогов, как правило, воспринимаются в качестве цельных лексических единиц. Экспериментальные данные свидетельствуют, что носителям русского языка доступна в высшей степени

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абстрактная семантика этих морфологических конструкций, в первую очередь тех, которые сохраняют свое унаследованное от предлогов пространственное значение. Последнее подтверждается тем фактом, что на степень интерпретируемости приставочных глаголов с выдуманым корнем влияет прайминг.

1 Introduction

In 1928, the prominent Russian writer and literary critic Kornej Čukovskij argued that there existed no word in the Russian language that a child could not turn into a verb. In his ([1928]2001) book *Ot dvux do pjati* ‘From Two to Five’, he cited a great number of such coinages that he encountered in the speech of his grandchildren. Among them were, for example:

(1) Ot-skorlupa-j mne jajco.
from-eggshell-IMP.2SG for me egg
‘Peel me an egg.’

(2) Za-molotoč-’ étot gvozdik.
at-hammer-IMP.2SG this nail
‘Slam this nail.’

(3) Ja na-makaroni-l-sja.
I on-noodle-PST.MASC-REFL
‘I have eaten enough noodles.’

(Čukovskij [1928]2001, p. 31)

The mechanism of this word formation is the same: verbal derivational (prefix) and inflectional (suffix) morphemes are combined with noun stems. Čukovskij contended that children are equally productive in forming both prefixed and non-prefixed verbs; however, the former constitute the majority of his examples. That should come as no surprise to any speaker of Russian, who will agree that the meaning of *na-makaronsja* is somehow more intuitively clear than the meaning of *makaronsja*—a verb with the same stem but without a prefix.¹

These patterns of verb formation are in no way confined to the language of early childhood. Such examples abound throughout Russian history, the most successful of them even became part of the standard language. In fact, the creative potential of these patterns is so great that they allow the incorporation not only of common nouns but also proper nouns, which is a common way of making Russian *bon-mots*. Such novel prefixed verbs are created to describe an action that is considered characteristic of a certain person. When English journalists were disappointed by the performance of the Russian striker Alexander Keržakov during the 2012 UEFA European Football Championship, they coined the verb *to keržakov* ‘to miss a wide-open goal, especially in a situation in which it is almost impossible to miss’. It was translated into Russian as *s-keržakov-it’*, aligning with many other verbs of the same constructional schema: *s-glup-it’* ‘to make a fool of oneself’, *s-plox-ovat’* ‘to blunder’ etc.

Going all the way down this path brings us to the possibility of coining prefixed verbs with stems that are semantically void and, when considered apart from their prefixes, have no meaning at all. For example: *za-findilit’* ‘to land a blow’ ← **findil*, *u-xajdokat’* ‘to bring to an end of existence’ ← **xajdok*, and so on.

Russian verb prefixes (more precisely, the use of prefixes, since most of them are polysemous) are usually divided into two types: ‘external / superlexical’ and ‘internal / lexical’.

¹By being ‘more’ or ‘less intuitively clear’, we mean being able or not being able to be interpreted without a context.

They are distinguished by a whole range of semantic and formal properties, specifically, with regard to their linear position. The prefixes of the first type are said to express modes of action, such as the inchoative (*za-igrat* ‘start playing’, *za-prygat* ‘start jumping’), the delimitative (*po-igrat* ‘play for some time’, *po-begat* ‘run for some time’), and the distributive (*pere-igrat* ‘vo vse igry’ ‘play all games’, *pere-lovit* ‘vsex myšej’ ‘catch all mice’). They are more compositional in terms of interaction with the semantics of the stem than the prefixes of the second type and usually precede them. The prefixes of the second type encode mostly spatial meanings (*v-bežat* ‘run into’), they tend to be closer to the stem and show a greater degree of semantic cohesion with it. Importantly, one prefix can convey both types of meaning, cf. *za-igrat* ‘start playing’ and *za-bežat* ‘za ugol’ ‘run around the corner’ (Babko-Malaya 1999; Ramchand 2004; Romanova 2004; Tatevosov 2008).

Regardless of the prefix category, traditional grammar has always propagated the idea of the ‘semantic double-centeredness’ of Russian prefixed verbs, treating them as syntagmas consisting of two structural components of which the stem bears the main burden of lexical meaning, while the prefix shapes and categorises this meaning in terms of some primitive semantic concepts (Miloslavskij 1980; Aminova 1988; Voloxina and Popova 1993; Varaksin 1996; Biskup 2019). As for examples like *zafindilit*’ or *uxajdokat*’ and other similar constructions, they are traditionally dismissed as occasionalisms that are created and understood due to an analogy with fully semanticised prefixed verbs.

There have been attempts to shift the burden of meaning of Russian prefixed verbs from stems to prefixes, most notably that of Krongauz (1998), who clearly understood the vulnerability of the traditional approach but, regrettably, did not come up with an appropriate methodological framework to convey his ideas and discredited them through some overly simplistic argumentation. Thus, he claimed that the meaning of a prefix is the general meaning of a group of all synonymous verbs with this prefix, which, for example, led him to contend that the prefix *s-* has the meaning ‘to steal’ (because of the verbs with the same meaning: *s-tyrit*’, *s-ljamzit*’, *s-peret*’, *s-tjanut*’, etc.) and the prefix *ot-* has the meaning ‘to beat’ (because of the verbs with the same meaning: *ot-kološmatit*’, *ot-dubasit*’, *ot-pizdit*’, *ot-mudoxat*’ etc.). Naturally, explanations of that sort were deemed incongruous and criticised (Beliakov 1999, pp. 215–216).

We believe that there is now a linguistic theory allowing us to analyse Russian prefix-stem constructions in a more logical and effective way. That theory is Construction Grammar, the study of symbolic pairings of form and meaning that are characterised by structural or semantic/pragmatic idiosyncrasies and/or a high level of entrenchment in language (Diessel 2019; Hilpert 2014; Langacker 2009; Goldberg 2006; Croft 2001). Construction Grammar has recently become one of the most prominent frameworks of linguistic research. Since 1995, when Goldberg’s seminal book outlined the theoretical underpinnings of Construction Grammar, significant progress has been made. Linguists proceeded from compiling an inventory of the different possible types of constructions to charting an entire network of constructions that is arguably capable of embracing the whole language domain and explaining every phenomenon within it.

As bilateral linguistic signs, constructions are believed to form a cline stretching from morphological units consisting of at least one bound morpheme and one slot for a free morpheme to syntactic units consisting of two or more slots for free lexemes. In relation to complex words, an important part of the Construction Grammar framework is the idea of morphological gradience. It implies that complex words can be accessed in discourse either via a route of morphological decomposition or via a direct-access, nondecomposed route, depending on their absolute frequency and the relative frequency of their parts (Baayen and Schreuder 2000; Hay 2001).

According to this view, the processing of complex words is determined by two types of links. On the one hand, it involves a sequential (syntagmatic, combinatorial) link between a free and a bound morpheme. On the other hand, it activates lexical (paradigmatic, categorising) links to similar words within the network of constructions. It has been demonstrated that the more frequently a word is used, the more automatised and predictable a sequential link between its parts becomes. As a consequence, frequent complex words tend to be structurally and semantically less transparent than infrequent words (Bybee 1985, 2007; Hay 2003).

To the best of our knowledge, the theory of morphological gradience has been evaluated predominantly (if not exclusively) against English data. Russian language and specifically Russian prefixed verbs seem to constitute an interesting case in this regard. First, prefixation is very productive in Russian. Some studies demonstrate that up to 90% of all Russian verbs are derived by this means (Tixonov 1998, p. 17). Second, it is well known that in Russian and many other Indo-European (especially Slavic) languages, some prefixes are related to prepositions and retain much of their spatial meaning, while others have a different etymological background (Matushansky 2002; Richardson 2007; Lehmann 2009; Markova 2011; Biskup 2012; Wiland 2012).

Provided that a usage-based constructionist approach to Russian prefixed verbs is justified and they can be analysed as prefix-stem constructions, one expects to find two things. First, verbs with prefixes which have prepositional counterparts and verbs with prefixes which exist only as bound morphemes should reveal significant difference in terms of their morphological decomposition and degree of semantic transparency. While earlier studies had shown that the total frequency of complex words strengthens their status as lexical units (Bybee 1985, pp. 117–124), Hay (2003, pp. 88–95) argued that the processing of lexical units is also influenced by the relative frequency of a complex word and its parts.

Secondly, the meaning of verbs with prefixes related to prepositions should be accessible to speakers of Russian as a general constructional meaning characterised by a high degree of abstraction, while the meaning of verbs with prefixes unrelated to prepositions should be contextually inferred as a meaning of a particular lexical item. In other words, prefix-stem constructions should constitute cognitive entities in their own right, i.e., their general meanings should be to a certain degree semantically independent from the sum of the meanings of their parts. This notion can be illustrated with a very simple example of coercion. Let us take a famous sentence (4) from Goldberg (1995, p. 29) showing that constructional schemas can override the argument structures of verbs; see (5) for a translation into Russian:

(4) John sneezed the napkin off the table.

(5) John *s-čixnul* salfetku *so* stola.

The English sentence is traditionally explained as follows: the meaning of the caused motion construction [X cause Y to move Z] interacts here with the semantics of the verb so that the verb contributes the agent role while the construction contributes the theme and the goal. The Russian sentence differs from the English original in that it does not simply contain a word that has never been used in this context (*sneeze*), but actually creates a verb that might not have been used before in any context at all (*s-čixnut*). In other words, an English syntactic construction is rendered in Russian as a morphological construction PREFIX-[_____]stem of the same meaning with the goal encoded by a prefix. This is confirmed by the fact that while the English sentence **John sneezed the napkin* is ungrammatical, the Russian sentence *John s-čixnul salfetku* is not.

Given all of the above, this study tests the morphological gradience theory on Russian prefixed verbs. With the help of a specially designed experiment, in which participants were asked to evaluate the semantic transparency of a prefixed nonse verb given in a minimal

context, as well as to semanticise it by suggesting an existing Russian verb with the same prefix, we offer evidence that these verbs can be analysed as constructional schemas and that the degree of their morphological decomposition depends upon the different levels of activation of their sequential and lexical links.

2 Data and methods

Prefix-stem constructions, like any other constructions, must be stored and processed in a network of associations, and access to them must be determined by the activation level of a construction at a particular moment in time (cf. Diessel 2019, pp. 24–25, 44). One easy method for activating a construction is through the structural priming of it by means of the same or a similar element in the discourse preceding it (Bock 1986; Pickering and Ferreira 2008). With this in mind, we designed and conducted our experiment.

The Russian Grammar of the Russian Academy of Sciences (Švedova 1980, §850) lists 28 verbal prefixes:

- 17 prefixes are not only historically related to prepositions, but also have prepositional counterparts in modern Russian: *v-* (*v* ‘in, at’), *do-* (*do* ‘to, before’), *za-* (*za* ‘for, behind’), *iz-* (*iz* ‘from, out of’), *na-* (*na* ‘on’), *nad-* (*nad* ‘over, above’), *o-* (*o* ‘about’), *ob-* (*ob* ‘about’), *ot-* (*ot* ‘from’), *po-* (*po* ‘along, by’), *pod-* (*pod* ‘under’), *pred-* (*pered* / *pred* ‘before, in front of’), *pri-* (*pri* ‘by, at’), *pro-* (*pro* ‘about, of’), *s-* (*s* ‘with’), *so-* (*so* ‘with’), and *u-* (*u* ‘from, by’);
- 11 prefixes have no prepositional counterparts in modern Russian; this group encompasses morphemic borrowings, prefixes that have non-prepositional origin and prefixes derived from prepositions that are no longer part of the Russian language: *de-*, *dis-*, *vz-*, *voz-*, *vy-*, *nedo-*, *niz-*, *pere-*, *pre-*, *raz-*, and *re-*.

Almost all Russian verbal prefixes, both prepositional and non-prepositional, are polysemous with the number of meanings ranging from 1 (for example, *de-*) to 10 (for example, *pere-*). For the experiment, all meanings of all prefixes listed by the Russian Grammar were taken into consideration (91 meanings for prepositional prefixes and 34 meanings for non-prepositional prefixes, 125 in total). For each meaning, one sentence containing a respective verb was obtained from the Russian National Corpus, all sentences being approximately of the same length. In each of these sentences, the root of the target prefixed verb was substituted with the nonse root *banksi*.

Next, two experimental conditions were designed. In the first condition, each of the 125 target sentences was preceded by another sentence obtained from the Russian National Corpus in which the same prefix of the same meaning was used with a different verbal stem. In the second condition, the preceding sentences were chosen so that they contained verbs that had different prefixes, or no prefixes at all, but were contextually synonymous to the coded target verb. This procedure is illustrated below with the help of an example. The whole array of target and priming verbs as well as all the meanings of the prefixes can be found in the appendix.

One of the meanings of the prefix *pro-* is ‘to perform (bring to fruition) an action identified by the base verb’. As a target sentence, we chose *Ja takim obrazom pro-demonstrirovala, čto legkodostupna!* ‘I have thus demonstrated that I am easily accessible!’. This sentence contains the prefixed verb *prodemonstrirovala* ‘demonstrate-PST.FEM’ with the aforementioned general meaning. This verb was coded in the experiment in both conditions as the nonse verb *probanksila*. Two different sentences were chosen as primes in experimental conditions 1

Table 1 Design of experiment

Experimental condition	Priming sentence		Target sentence
1	Golos Lidii Timofeevny <i>pro-zvučal</i> otkuda-to iz ugla <...> 'Lidia Timofeyevna's voice <i>sounded</i> from somewhere round the corner <...>'	+	Ja takim obrazom <i>pro-banksila</i> , čto legkodostupna! 'I have thus [<i>demonstrated</i>] that I am easily accessible!'
2	Sadis', ja tebe <i>po-kažu</i> . Ja sela rjedom, čuvstvujja sebja po-glupomu <...> 'Sit down, I'll <i>show</i> you. I sat down next to him, feeling stupid <...>'	+	Ja takim obrazom <i>pro-banksila</i> , čto legkodostupna! 'I have thus [<i>demonstrated</i>] that I am easily accessible!'

and 2. The former contained the verb *pro-zvučat* 'to sound' with the same prefix *pro-* and the same constructional meaning, but with a different lexical meaning. The latter contained the verb *po-kazat* 'to show', which is synonymous with *prodemonstrirovat* 'to demonstrate' in its lexical meaning, but includes a different prefix *po-* (Table 1).

In both experimental conditions, in all 125 contexts, priming sentences preceded the target sentences and were separated from them with a <...> sign.

The instructions for the participants of the experiment were written so as not to reveal the true purpose of study.² The contexts were randomly shuffled, so that different meanings of the same prefix did not follow each other. Given the abundance of sentences, we decided not to add any filler contexts.

²See the full text translated from Russian:

Hello! Thank you for agreeing to participate in our experiment. The experiment does not require any special knowledge; the only requirement is to be a native Russian speaker. The purpose of the experiment is to investigate the conditions of semanticisation (inference of meaning) of Russian verbs through their immediate context. The experimental material includes short excerpts from works of different genres and different time epochs extracted from the Russian National Corpus. In each excerpt, several parts of the original text were deleted. The places of deletion are marked with this sign: <...>. The stems of the target verbs were consistently replaced with the same nonse stem -banksi-.

You are asked to do the following:

Part A. Rate on a scale of 1 to 4, how intuitively well you understand the meaning of the nonse word (it is CAPITALISED):

- 1—the meaning is absolutely incomprehensible,
- 2—the meaning is rather more opaque than clear,
- 3—the meaning is rather more clear than opaque,
- 4—the meaning is absolutely comprehensible.

Part B. Substitute the nonse word, as you understand it, with any existing Russian verb, replacing the nonse stem -banksi- and preserving all other elements (beginning and end) of the verb. For example: *protivobanksit* – *protivodejstvovat* 'counteract' OR *protivostojat* 'resist' etc.

In most cases, it is possible to opt for several different words at once. Please choose the one that, in your opinion, is most appropriate in this context. Please note that your answer must contain the same prefix as the nonse word! If the meaning of the nonse word is absolutely unclear to you and you choose '1' in Part A, please still suggest the first verb that comes to your mind with the corresponding prefix in Part B.

Please rely only on your language competence when performing the task; do not use any information sources (corpora, dictionaries, etc.). It is advisable to carry out the tasks quickly, without thinking about your answers for long periods—your natural reaction to the proposed stimulus is important.

Once you have started the task, please complete it. You should not skip sentences. Please bear in mind that tasks that have been completed in a shorter time than it takes to read them will not be accepted. Answers with non-existing verbs or verbs with prefixes different from those of the nonse word will also be considered inappropriate.

To conduct the experiment, we used Yandex.Toloka,³ a Russian crowdsourcing service analogous to Amazon Mechanical Turk that allows the analysis of large volumes of data in a short time. For example, one can ask users to categorise the wide variety of items in an online store into groups, find or verify specific information, translate texts, and so on. First, we created a special template so that each task included one of the 125 pairs of sentences as input data, as well as two fields for output data: 1) an integer varying from 1 to 4 to rate the 'clearness' (comprehensibility) of a nonse verb and 2) a string field to substitute the nonse word with an existing Russian verb with the same prefix. For each task, a time limit of 10 minutes was imposed.

Second, we assembled four pools of users who met the following criteria: 1) they were native speakers of Russian; and 2) they belonged to the top 10% of all rated active users. Participants of each pool were assigned to one of the four groups of tasks: experimental condition 1 (code 1_1) and 2 (code 1_2) for verbs with prepositional prefixes and experimental condition 1 (code 2_1) and 2 (code 2_2) for verbs with non-prepositional prefixes. Each task had to be performed by 33 different users, and no user could see any tasks other than those assigned to their pool.

The null hypothesis H_0 of the experiment was that there would be no significant difference between the two experimental conditions both in terms of comprehensibility and interpretability of the coded verbs. The alternative hypothesis H_1 was that verbs with prefixes related to prepositions would reveal significantly higher scores than verbs with non-prepositional prefixes.

3 Results and discussion

3.1 Clearness scores

The total number of submissions was 8,250 (125 meanings x 2 experimental conditions x 33 participants); on average, each participant performed 9 tasks.⁴ Out of those submissions, 1,856 were erroneous due to one of the following reasons: either no substitute verb at all was provided (818) or the provided verb had a prefix which did not match that of the nonse verb (1,038). We found a significant association between the experimental condition and the number of right, wrong, and no answers: $\chi^2(6) = 371.99$, $p < 0.001$, Cramer's $V = 0.15$ (R Core Team 2013).

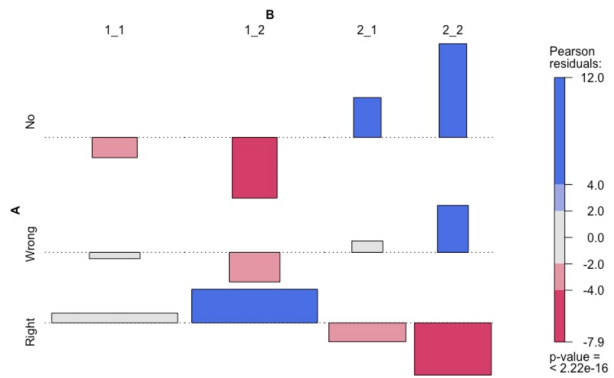
On average, tasks with non-prepositional prefixes (2_1 and 2_2) produced significantly greater numbers of blanks and wrong submissions than prepositional ones. Conversely, the odds of obtaining a correct answer from a test participant were 2.42 times greater if a task included a prepositional verb (especially in experimental condition 1_2) than those if it did not (Fig. 1).

Firstly, we analysed the distribution of clearness scores provided by the participants in two experimental conditions, having preliminarily excluded the ratings that were given alone, without a substitute verb, as this type of submission is indicative of answering a question without proper consideration. The scores were given on a scale of 1 to 4, where 1 indicated absolute incomprehensibility and 4 perfect comprehensibility of a nonse verb in a given con-

³<https://toloka.yandex.com/>.

⁴The whole dataframe is available at https://drive.google.com/file/d/19xkhc44_zTxm8B9hX86Htfb5W7wOEjgo/view?usp=sharing.

Fig. 1 Association plot of experimental condition and correctness of answer



text. Our alternative hypotheses were that 1) the median clearness score for prepositional prefix-stem constructions would be significantly greater than the median clearness score for non-prepositional constructions regardless of the experimental condition; and 2) the median clearness score in experimental condition 1 with its structural priming of prefix-stem constructions would be significantly greater than the median clearness score in experimental condition 2 with its ‘lexical boost’ (Pickering and Branigan 1998) regardless of the type of construction.

For each context, we calculated the sum of the clearness scores of all participants, which gave us four numeric vectors, two of 91 numbers for prepositional prefixes in experimental conditions 1_1 and 1_2 and two of 34 numbers for non-prepositional prefixes in experimental conditions 2_1 and 2_2, each number ranging between 33 (a hypothetical situation in which each participant submitted a score of 1) and 132 (a hypothetical situation in which each participant submitted a score of 4). The overall distribution of median values can be seen in Fig. 2: $M_{1_1} = 84$, $M_{1_2} = 87$, $M_{2_1} = 74$, $M_{2_2} = 72$.

Since our data fall into four groups and are ordinal-scaled, we used a nonparametric ANOVA based on permutation to compare the medians of all groups (Sheskin 2011, p. 1002). This was achieved with the help of the `oneway_test()` function from the package `coin` for RStudio and verified by the Kruskal-Wallis one-way ANOVA by ranks implemented in the `stats` package. Both tests showed that the null hypothesis of the true differences of relative effects being equal to 0 can be safely rejected (Approximative K-Sample Fisher-Pitman Permutation Test: $\chi^2(3) = 46.86$, $p < 0.001$; Kruskal-Wallis rank sum test: $\chi^2(3) = 44.42$, $p < 0.001$).

To find out which groups differ significantly, we performed a post hoc nonparametric test of relative contrast effects implemented in the `nparrcomp` package for RStudio.

The results provided in Table 2 can be interpreted as follows. Each estimator represents the probability that a randomly chosen subject in treatment group 1 reveals a smaller response value X than a randomly chosen subject from treatment group 2 with response value Y . If this probability is less than 0.5, then the values in group 1 tend to be larger than those in group 2. If the probability equals 0.5, none of the observations tend to be smaller or larger (Konietschke et al. 2015, p. 2).

It can be observed that of our two initial hypotheses, only the first one has been confirmed. The median clearness score for prepositional prefix-stem constructions is indeed significantly greater than the median clearness score for non-prepositional constructions in both experimental conditions (see contrasts 1_1—2_2, 1_2—2_1, and 1_2—2_2 in Table 2). However, the difference between experimental conditions 1 and 2 for both prepositional and non-prepositional prefixes is negligible (as confirmed both by the p -values above the thresh-

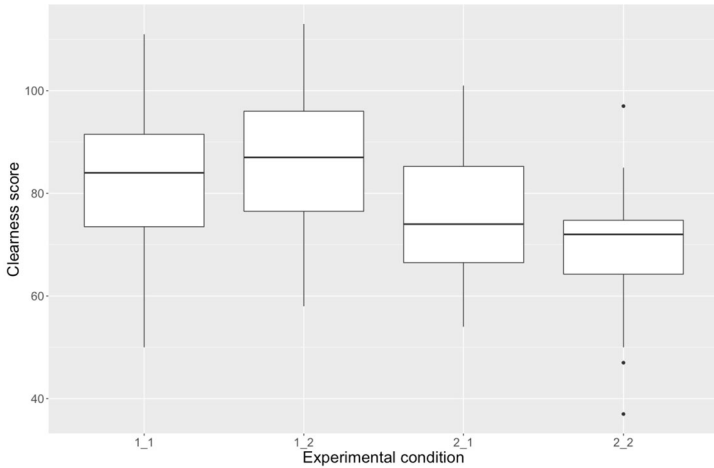


Fig. 2 Boxplot of clearness scores

Table 2 Nonparametric relative contrast effects (clearness scores)

Contrast	Difference in medians	Statistic	95% CI		
			Lower	Estimator	Upper
1_1—1_2	84-87	2.00	0.47	0.58	0.68
1_1—2_1	84-74	-2.44	0.22	0.35	0.50
1_1—2_2	84-72	-5.09***	0.12	0.21	0.34
1_2—2_1	87-74	-3.68***	0.16	0.28	0.43
1_2—2_2	87-72	-6.08***	0.08	0.15	0.27
2_1—2_2	74-72	-1.89	0.21	0.36	0.54

Significance codes: *** — $p < 0.001$, * — $p < 0.05$

old of statistical significance and the fact that the confidence intervals for respective estimators contain 0.5), and, in fact, seems to be quite the opposite of what we had expected. Prepositional prefixes are characterised by higher clearness scores in experimental condition 2, in which a priming sentence contains a verb with a different prefix or no prefix at all, albeit one which is synonymous in meaning to the target verb. In contrast, non-prepositional prefixes slightly favour experimental condition 1, in which a priming sentence contains a verb with the same constructional but different lexical meaning.

One could hypothesise that seeing a verb with the same non-prepositional prefix in a priming sentence helped participants of the experiment to ‘constructionalise’ the respective nonse verb, that is, detach the prefix from the stem and thus make the word more semantically transparent. On the other hand, with regard to prepositional prefixes, such a prop turned out to be superfluous or even misleading since the respective prefix-stem constructions are easily decomposable as such and have a variety of possible constructional meanings; however, seeing a verb with a different prefix but with a similar lexical meaning helped participants to arrive at an interpretation.

Both the nuisance of structural priming for prepositional constructions and its importance for non-prepositional ones result in the fact that the difference between clearness scores in

Table 3 Distribution of answers in different experimental conditions (prefix *vy-*)

Meanings of substitutes provided for the nonce verb	Priming verb	
	<i>vy-stradat'</i>	<i>po-jmat'</i>
'to get, obtain, find something'	13	16
'to move away, to direct out'	15	6
no answer	5	11

$$\chi^2(2) = 6.41, p < 0.05$$

experimental conditions 1_1 and 2_1 is not significant at the conventional 0.05 level ($p = 0.06$).

There is some anecdotal evidence in our data supporting this claim. One of the target sentences for the prefix *vy-* was:

- (6) mestnye rybaki vybanksili v more ne myšonka
 local fishermen vybanksili in the sea not a mouse
 ne ljažušku a nevedomu zverušku.
 not a frog but an unknown animal.

The coded verb was *vy-lovit'* 'catch, fish out'. However, due to the homonymy of locative and accusative case forms of the Russian noun *more* 'sea', the construction could be analysed as meaning both 'to get, obtain, find something by means of an action identified by the base verb' (*vy-lovit'* v *more* 'catch in the sea', locative form) and 'to move away, to stand out from something, to direct out by means of an action identified by the base verb' (*vy-brosit'* v *more* 'throw into the sea', accusative form). There were two priming sentences, one of them containing the verb *vy-stradat'* 'achieve through suffering', another one the verb *po-jmat'* 'catch'. The results obtained in the two experimental conditions were illuminatingly different (Table 3).

Table 3 shows that though the context suggests the default meaning 'to get, obtain, find something' (after all, fishermen are more likely to be occupied catching something in the sea rather than disposing of something brought there), the *vy-*construction by itself, when activated in the discourse, is primarily connected to the opposite meaning 'to move away, to direct out'.

3.2 Correctness scores

It is evident that psychological scaling may be problematic. We cannot be sure that participants treat the distances between the points at the ends of the scale in the same way as the distances between the points in the middle of the scale. Hence, we need a quantitative measure of how well participants actually interpreted the prefix-stem constructions. This goal was achieved by manually coding the data and calculating what can be called a 'correctness score'.

The correctness score was designed so that it most closely matched the scale of the clearness score. Each submission was ranked on a scale from 1 to 4 according to the schema provided in Table 4; cases of no answer were assigned a '1'.

Again, for each context, we calculated the sum of the correctness scores of all participants, which provided four numeric vectors, two of 91 numbers for prepositional prefixes in experimental conditions 1_1 and 1_2 and two of 34 numbers for non-prepositional prefixes

Table 4 Correctness scoring schema

Score	Same prefix	Same general meaning	Same verb
1	–	–	–
2	+	–	–
3	+	+	–
4	+	+	+

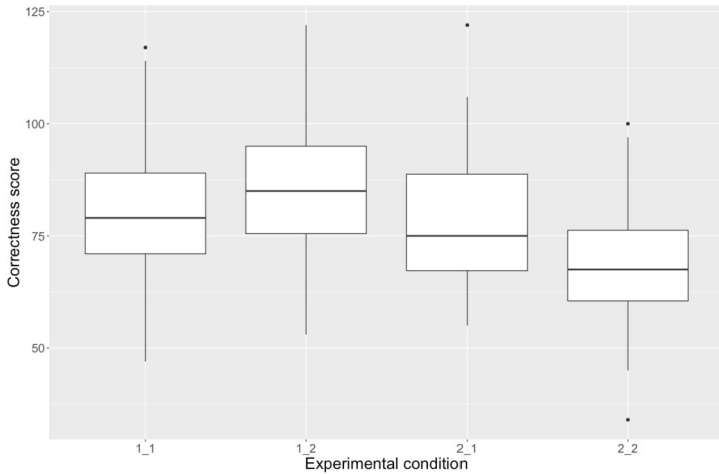


Fig. 3 Boxplot of correctness scores

in experimental conditions 2_1 and 2_2, each number ranging from 33 (a hypothetical situation in which each participant provided no answer) to 132 (a hypothetical situation in which each participant provided the exact word from the original context). The overall distribution of values can be seen in Fig. 3: $M_{1_1} = 79$, $M_{1_2} = 85$, $M_{2_1} = 75$, $M_{2_2} = 67$.

The same tests as with the clearness scores were performed, and both of them showed that the null hypothesis of the true differences of relative effects being equal to 0 can be safely rejected (Approximative K-Sample Fisher-Pitman Permutation Test: $\chi^2(3) = 32.32$, $p < 0.001$; Kruskal-Wallis rank sum test: $\chi^2(3) = 30.49$, $p < 0.001$). The results of a post hoc nonparametric test of relative contrast effects are given in Table 5.

The numbers provided in Table 5 should be interpreted in the same manner as those in Table 2. One can see that the distribution of correctness scores is very similar to that of clearness scores, which means that psychological scaling fairly closely mirrored the actual complexity of the situation. The only difference is that the contrast between prepositional and non-prepositional prefixes is now restricted to the conditions 1_1—2_2 and 1_2—2_2. As for the pair 1_2—2_1, though the participants marked lexically boosted prepositional constructions as more semantically transparent than structurally primed non-prepositional constructions, the difference between the numbers of correct substitutions was found insignificant at the conventional 0.05 level ($p = 0.07$). All observed significant contrasts are summarised in Table 6.

We can deduce several conclusions from the above observations. Regardless of experimental condition, prepositional prefixes are distinguished from non-prepositional ones. They

Table 5 Nonparametric relative contrast effects (correctness scores)

Contrast	Difference in medians	Statistic	95% CI		
			Lower	Estimator	Upper
1_1—1_2	79-85	2.32	0.49	0.60	0.70
1_1—2_1	79-75	-0.85	0.30	0.44	0.60
1_1—2_2	79-67	-3.83***	0.16	0.27	0.41
1_2—2_1	85-75	-2.41	0.22	0.35	0.50
1_2—2_2	85-67	-4.94***	0.10	0.19	0.33
2_1—2_2	75-67	-2.39	0.18	0.32	0.51

Significance codes: *** — $p < 0.001$

Table 6 Summary of significant contrasts for clearness and correctness scores

	1_1	1_2	2_1	2_2
1_1		-	-	Clearness + Correctness
1_2	-		Clearness	Clearness + Correctness
2_1	-	Clearness		-
2_2	Clearness + Correctness	Clearness + Correctness	-	

were rated by the participants as significantly more semantically transparent than their counterparts ($M_{1_1+1_2} = 84 > M_{2_1+2_2} = 72$). They also produced a greater number of correct substitutions of coded words ($M_{1_1+1_2} = 82 > M_{2_1+2_2} = 71$). However, the priming mechanism works very differently with these two types of constructions. The interpretation of the nonce verbs with prepositional prefixes is significantly facilitated by lexical boost (in pairs like *do-bavit' → v-banksit'*), while the interpretation of the nonce verbs with non-prepositional prefixes is mostly affected by structural priming (in pairs like *pere-kroit' → pere-banksit'*).

The latter finding is contrary to what we expected and reveals a less straightforward dependence between types of Russian verbal prefixes and complex words' routes of accessibility. A seemingly reasonable explanation for this dependence was provided above, let us reiterate it in more details. When we performed our small surgery on prefixed verbs, removing their actual stems and implanting the same nonce stem into them, we effectively blocked the direct-access, nondecomposed route for these words.

In agreement with our hypothesis, this operation had more dire consequences for verbs with non-prepositional prefixes because it turned them into charades that had to be guessed from the context. It is, then, of little surprise that lexical boost in this situation could not provide the participants of the experiment with sufficient information: they must have experienced trouble even matching the priming verb to the target verb. On the other hand, the structural priming of the verbs with non-prepositional prefixes helped to constructionalise them, opening up the route of morphological decomposition and providing participants with a hint at an interpretation.

Conversely, the verbs with prepositional prefixes did not really require any structural prop because their prefixes, which coincide in form with very frequent prepositions, are easily de-

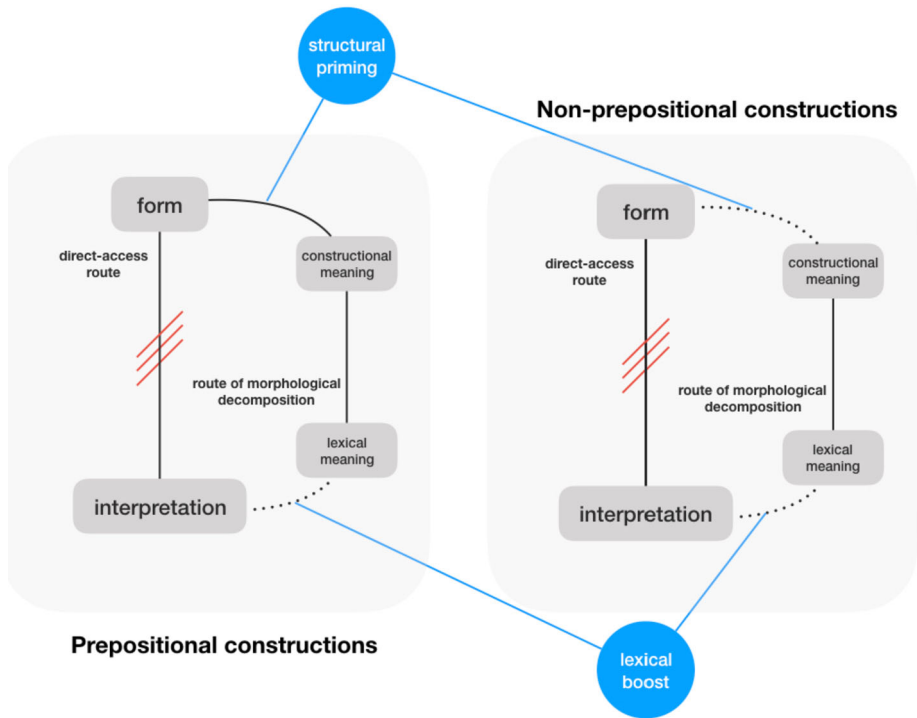


Fig. 4 Scheme of Russian prefix-stem constructions’ routes of accessibility under two types of priming. Notes: 1) three long red dashes symbolise the blocking of a direct-access route during the experiment; 2) black dotted lines represent weak accessibility along respective lines under experimental conditions; 3) black solid lines represent strong accessibility along respective lines; 4) blue solid lines point at the links that different types of priming reinforce

tachable from the stems on their own. Lexical boost, on the other hand, helped the participants to strengthen the link between the general constructional and specific lexical meaning of respective verbs, thus limiting the space of possible interpretations. All of the above can be visualised with the help of the scheme in Fig. 4.

This information seems to provide reliable evidence that priming affects the interpretability of Russian nonse verbs with prepositional prefixes and non-prepositional prefixes in different ways. This confirms our hypothesis that the former should be considered constructional schemas with a fixed element and a slot that can be filled with certain other elements, that is, prefix-stem constructions that are stored and processed in a network of associations, while the latter should be analysed as one-chunk lexical units whose constructional nature is opaque to language users if not activated in the context.

3.3 Idiosyncratic behaviour of prefixes

An important question to answer is whether an interaction exists between a prefix and the type of priming, in other words, whether any prefixes reveal idiosyncratic behaviour under different experimental conditions. The interaction plots for clearness and correctness scores are presented in Fig. 5 for prepositional prefixes and in Fig. 6 for non-prepositional prefixes.

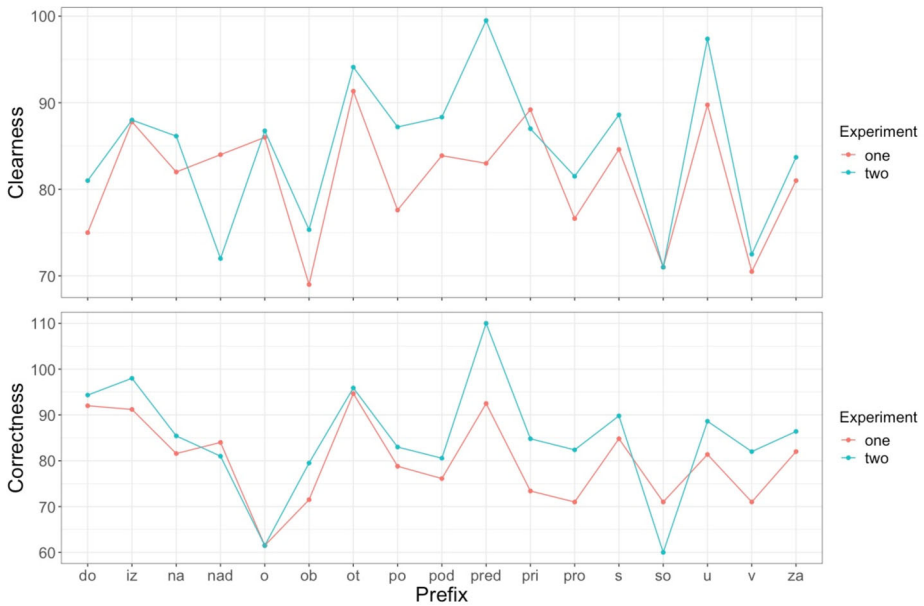


Fig. 5 Interaction plot of clearness and correctness scores in experimental conditions 1 and 2 (prepositional prefixes)

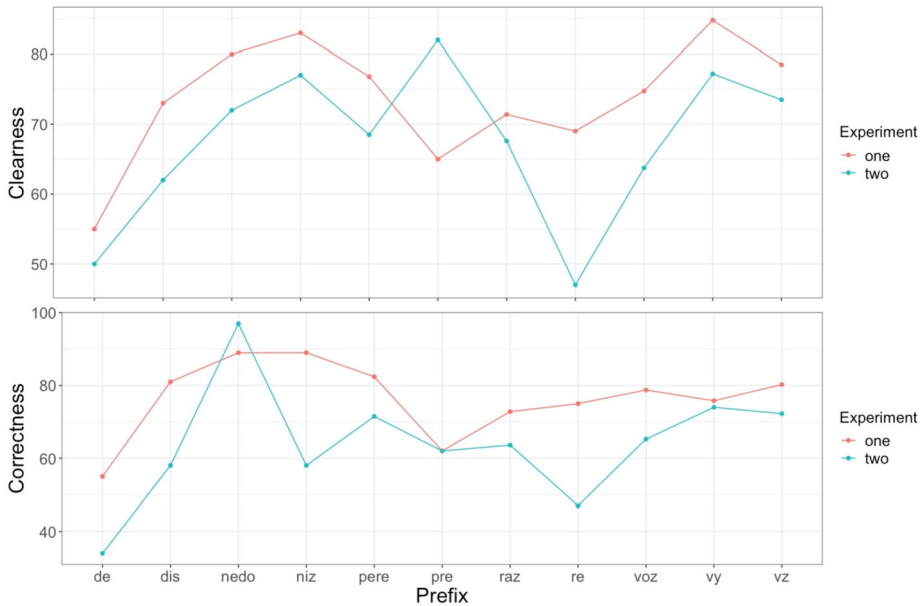


Fig. 6 Interaction plot of clearness and correctness scores in experimental conditions 1 and 2 (non-prepositional prefixes)

A characteristic criss-cross pattern suggests that there is an interaction. As we have observed earlier, prepositional prefixes provide, on average, higher clearness and correctness scores under the experimental condition 2, in which a priming sentence contains a verb with a dif-

Table 7 Results of factorial ANOVA for clearness scores

	Prepositional prefixes			Non-prepositional prefixes		
	Sum of squares	df	F	Sum of squares	df	F
Intercept	835833	1	6296.75 ^{***}	172006	1	1160.22 ^{***}
Prefix	6978	16	3.28 ^{***}	2405	10	1.62
Experiment	350	1	2.63 ^{**}	357	1	2.4
Prefix: Experiment	749	16	0.35	486	10	0.32
Residuals	19646	148		6820	46	

Table 8 Results of factorial ANOVA for correctness scores

	Prepositional prefixes			Non-prepositional prefixes		
	Sum of squares	df	F	Sum of squares	df	F
Intercept	823610	1	4643.8 ^{***}	170193	1	764.03 ^{***}
Prefix	12674	16	4.46 ^{***}	3651	10	1.63
Experiment	754	1	4.25 [*]	1368	1	6.14 [*]
Prefix: Experiment	826	16	0.29	945	10	0.42
Residuals	26249	148		10247	46	

Significance codes: ^{***}— $p < 0.001$, ^{*}— $p < 0.05$

ferent prefix, or no prefix at all, but which is synonymous in meaning to the target verb, while non-prepositional prefixes, in contrast, slightly favour experimental condition 1, in which a priming sentence contains a verb with the same constructional but different lexical meaning.

However, we can now see that this trend does not hold for all prefixes. The difference in both clearness and correctness scores, for some of them, almost disappears (prepositional *o-* and *ot-*; non-prepositional *pre-* and *vy-*) and for some, it is reversed (prepositional *nad-*, *pri-*, and *so-*; non-prepositional *nedo-* and *pre-*). In order to establish whether the differences between the prefixes and experimental conditions, as well as their interaction, are statistically significant, we employed a two-way (factorial) ANOVA. Although our data are quasi-interval and thus violate the interval data assumption, many studies have shown that the F-test is entirely robust to these violations and can be used to perform a statistical analysis of data collected using a Likert-type response format with no resulting bias (Glass et al. 1972; Carifio and Perla 2007; Boone and Boone 2012).

The assumption of homogeneity of variance for both prepositional and non-prepositional prefixes was met, as confirmed by the Levene test performed with the help of the *leveneTest()* function in the package *car* for RStudio ($F = 0.63$, $p = 0.93$ for clearness scores of prepositional prefixes; $F = 0.97$, $p = 0.51$ for clearness scores of non-prepositional prefixes; $F = 0.74$, $p = 0.51$ for correctness scores of prepositional prefixes; $F = 0.61$, $p = 0.83$ for correctness scores of non-prepositional prefixes). The orthogonal Helmert contrasts for the prefixes and experimental conditions variables were calculated with the help of the *contr.helmert()* function in RStudio. The results of a factorial ANOVA for the clearness and correctness scores of prepositional and non-prepositional prefixes are provided in Tables 7–8.

Since some researchers will argue that the data collected using a Likert-type response format cannot be analysed by means of a factorial ANOVA, we double-checked our findings by performing Kruskal-Wallis one-way ANOVAs by ranks for each variable and each type

Table 9 Results of Kruskal-Wallis one-way ANOVAs by ranks for prepositional and non-prepositional prefixes

	Prepositional prefixes		Non-prepositional prefixes	
	Clearness scores	Correctness scores	Clearness scores	Correctness scores
Prefix	$\chi^2(16) = 44.66^{***}$	$\chi^2(16) = 51.49^{***}$	$\chi^2(10) = 16.97$	$\chi^2(10) = 13.76$
Experiment	$\chi^2(1) = 4.05^*$	$\chi^2(1) = 5.47^*$	$\chi^2(1) = 3.71$	$\chi^2(1) = 5.9^*$

Significance codes: *** $-p < 0.001$, * $-p < 0.05$

of scores. The results, presented in Table 9, are absolutely compatible with those obtained from two-way ANOVAs.

One can see that prepositional and non-prepositional prefixes, when viewed as separate groups, display very different properties. Thus, with prepositional prefixes, both independent variables (prefix and experimental condition) have highly significant effects on both clearness and correctness scores. However, for non-prepositional prefixes, neither of the independent variables affects the clearness scores and, for the correctness scores, only a change in experimental conditions evokes significant differences, while a change in prefix does not.

An important deduction which can be made from the aforementioned results is that non-prepositional prefixes were considered to be homogeneous by the participants of the experiment, while at least some pairs of prepositional prefixes revealed statistically significant idiosyncratic behaviour under both experimental conditions.

3.4 Meaning of prefixes

To determine which prefixes differ significantly in terms of both clearness and correctness scores, we performed a post hoc Tukey Honest Significant Difference test. The results for those pairs of prefixes for which the test provided significant adjusted p -values and 95% confidence intervals not crossing zero are given in Table 10.

We can observe a striking contrast between the interpretations of some prefixes. The reason for this can be uncovered through examining the arrays of meanings of the prefixes *ot-* and *ob-* since this pair is marked off by both clearness and correctness scores. If we label each meaning as ‘prepositional’ or ‘non-prepositional’, based on whether the corresponding preposition can or cannot be used in a paraphrase of the target verb in accordance with the procedure proposed by Bergsma et al. (2010) and modified and extended by Biskup (2015),⁵ we obtain the results provided in Table 11.

The difference is clear. The meaning of the prefix *ob-* has undergone a long development moving away from the meaning of its corresponding preposition (6 out of 6 meanings are ‘non-prepositional’), while the prefix *ot-* has remained fairly close to its preposition (5 out of 9 meanings are ‘prepositional’). Even with verbs like *otvezti* and *otblagodarit’*, for which our paraphrases may seem artificial, the directedness of action away from the deictic center is evident.

To assess whether this is truly a factor in the distribution of clearness and correctness scores, we coded all 91 meanings of prepositional prefixes as ‘prepositional’ (30 meanings) or ‘non-prepositional’ (61 meanings). The interaction plots for clearness and correctness scores can be found in Fig. 7. Since our data were found to violate the assumption of homogeneous

⁵Our ‘prepositional’ label corresponds to Biskup’s classes 1 and 2, while the ‘non-prepositional’ label corresponds to Biskup’s classes 3 and 4.

Table 10 Tukey multiple comparisons of clearness and correctness scores' means for different prepositional prefixes

Clearness scores				
Pair of prefixes	Estimate	95% CI lower	95% CI upper	Adjusted <i>p</i> -value
<i>ot- - ob-</i>	20.6	5.44	35.7	< 0.001
<i>u- - ob-</i>	21.4	5.91	36.9	< 0.001
<i>u- - pro-</i>	14.5	0.16	28.8	< 0.05
Correctness scores				
Pair of prefixes	Estimate	95% CI lower	95% CI upper	Adjusted <i>p</i> -value
<i>o- - do-</i>	-31.7	-57	-6.35	< 0.01
<i>o- - iz-</i>	-33.1	-55.3	-10.9	< 0.001
<i>o- - na-</i>	-22	-42.8	-1.22	< 0.05
<i>ot- - o-</i>	33.8	13.9	53.7	< 0.001
<i>pred- - o-</i>	39.8	11	68.5	< 0.001
<i>s- - o-</i>	25.8	3.56	48	< 0.01
<i>u- - o-</i>	23.5	3.20	43.8	< 0.01
<i>za- - o-</i>	22.7	3.09	42.3	< 0.01
<i>ot- - ob-</i>	19.8	2.31	37.2	< 0.05
<i>pod- - ot-</i>	-16.9	-32.6	-1.32	< 0.05
<i>pro- - ot-</i>	-18.6	-34.7	-2.48	< 0.01

variance as confirmed by the Levene test, and the sample sizes are not equal, we resorted to a nonparametric ANOVA based on permutation. The summary is provided in Table 12.

Interestingly, the change in type of meaning from non-prepositional to prepositional most significantly boosted the number of correct interpretations of the nonse verbs with prepositional prefixes under experimental condition 1 with its structural priming. In other words, when a construction is activated in discourse (experimental condition 1), the difference in the helpfulness of 'prepositional' versus 'non-prepositional' clues is much greater than when a construction is not activated (experimental condition 2). In summary, we can confirm a significant difference in the accessibility of Russian prefix-stem constructions that have 'prepositional' and 'non-prepositional' meaning. This is what one would intuitively expect because the former type of construction is more naturally morphologically decomposed than the latter.

4 Conclusion

This study has yielded a number of important results that can be summarised as follows. Speakers of Russian are very sensitive to the etymological connection between verb prefixes and the prepositions they are related to. Thus, prefix-stem constructions with prefixes that correspond to prepositions are more likely to be morphologically decomposed, while the prefix-stem constructions with prefixes that do not relate to prepositions tend to be regarded as a single lexical unit. Moreover, the general, highly abstract semantics of Russian prefix-stem constructions, especially of those that retain their 'prepositional' meaning, is undoubtedly accessible to language users, which is confirmed by the fact that the interpretability of these constructions is affected by priming.

Table 11 ‘Prepositional’ and ‘non-prepositional’ meanings of prefixes *ob-* and *ot-*

Prefix	Prefix meaning	Target verb	Paraphrase with the corresponding preposition	Type of meaning
ob-	‘to surpass another performer of an action identified by the base verb’	<i>ob-igrat</i> ‘outplay’	–	non-prepositional
	‘to extend an action identified by the base verb to many objects (or to many places within a single space)’	<i>ob-ezdit</i> ‘go everywhere’	–	non-prepositional
	‘to direct an action identified by the base verb around an object in the path of movement’	<i>ob-exat</i> ‘drive around something’	–	non-prepositional
	‘to perform (bring to fruition) an action identified by the base verb’	<i>ob-venčat</i> ‘wed’	–	non-prepositional
	‘to direct an action identified by the base verb around something or towards all sides of something’	<i>ob-žarit</i> ‘fry’	–	non-prepositional
	‘to harm someone (sometimes, cheat someone) through an action identified by the base verb’	<i>ob-vorovat</i> ‘rob of’	–	non-prepositional
ot-	‘to perform an action identified by the base verb intensively, completely, and finally’	<i>ot-repetirovat</i> ‘rehearse’	–	non-prepositional
	‘to separate something that was previously attached as a result of an action identified by the base verb; to annul of the result of such action’	<i>ot-lepit</i> ‘detach’	<i>ot-delit’ ot</i> ‘separate from’	prepositional
	‘to head somewhere by means of an action identified by the base verb’	<i>ot-vezti</i> ‘drive to’	<i>ot-dalit’ [ot etogo mesta]</i> ‘move to [from the deictic center]’	prepositional
	‘to perform an action identified by the base verb in response to another action’	<i>ot-blagodarit</i> ‘give credit’	<i>ot-platit’ [ot polučatelja]</i> ‘pay back [from the deictic center]’	prepositional
	‘to refuse or to force the refusal of something by performing an action identified by the base verb’	<i>ot-govorit</i> ‘talk out’	<i>ot-sovetovat’ ot</i> ‘advise against’	prepositional
	‘to bring to an undesirable state (of damage, fatigue) as a result of an action identified by the base verb’	<i>ot-davit</i> ‘tread on one’s foot’	–	non-prepositional
	‘to perform (bring to fruition) an action identified by the base verb’	<i>ot-iskat</i> ‘find after some searching’	–	non-prepositional
	‘to remove, to separate from something by means of an action identified by the base verb’	<i>ot-brosit</i> ‘throw away’	<i>ot-švyrnut’ ot</i> ‘hurl away from’	prepositional
‘to end an action identified by the base verb that has lasted for a certain period of time’	<i>ot-gremet</i> ‘stop rumbling’	–	non-prepositional	

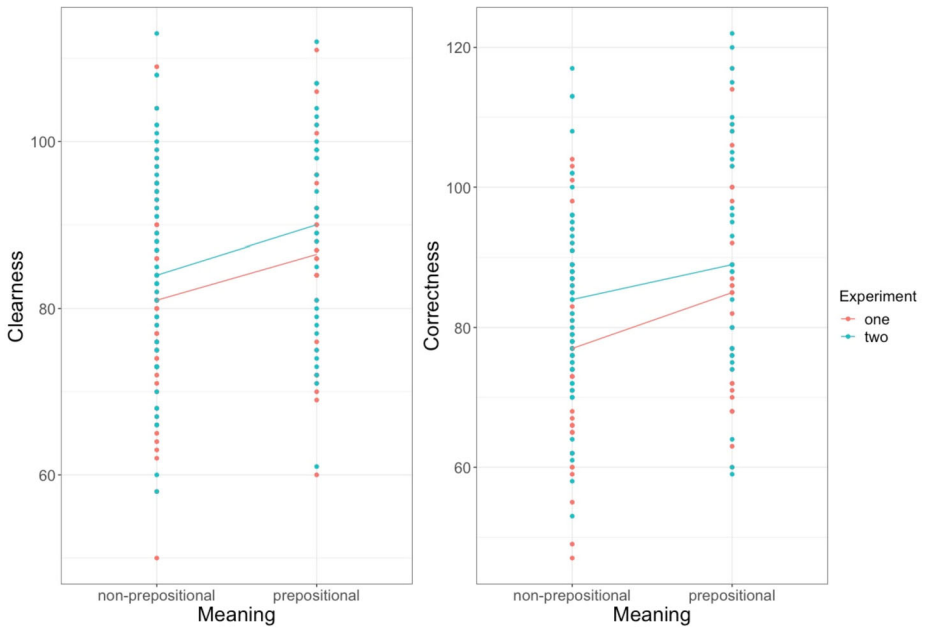


Fig. 7 Interaction plot of the clarity and correctness scores in experimental conditions 1 and 2 (meanings of prepositional prefixes). Notes: dots represent prefix-specific scores, lines connect the median scores for two types of meaning

Table 12 Results of nonparametric ANOVA based on permutation for ‘prepositional’ and ‘non-prepositional’ meanings of prepositional prefixes

	Clarity scores	Correctness scores
Meaning (nonprep, prep)	$Z = -2.12^*$	$Z = -3.37^{***}$
Experiment (one, two)	$Z = -2.09^*$	$Z = -2.47^*$

Significance codes: *** $-p < 0.001$, * $-p < 0.05$

All of this can be presented in the form of a hierarchy: borrowed prefixes and native prefixes unrelated to prepositions → native prefixes related to prepositions with ‘non-prepositional’ meaning → native prefixes related to prepositions with ‘prepositional’ meaning. The closer a prefix is to the left extremity of the scale, the higher the chances that the respective prefix-stem construction is accessed via lexical link, that is, directly as one chunk. Similarly, the closer a prefix is to the right extremity of the scale, the higher the chances that the respective prefix-stem construction is accessed via a sequential link between its morphological parts. Thus, our findings speak strongly in favour of the idea that morphological structure is gradient and shaped by language use and that morphological decomposition is a matter of degree.

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Appendix. Target and priming verbs in the experiment

No.	Prefix	Prefix meaning	Target verb	Priming verb (Condition 1)	Priming verb (Condition 2)
Prepositional prefixes					
1	<i>v-</i>	'to place something somewhere by means of an action identified by the base verb'	<i>v-lit'</i> 'pour in'	<i>v-katit'</i> 'roll in'	<i>do-bavit'</i> 'add'
2	<i>ob-</i>	'to surpass another performer of an action identified by the base verb'	<i>ob-igrat'</i> 'outplay'	<i>ob-skakat'</i> 'outdo'	<i>po-bedit'</i> 'win'
3	<i>na-</i>	'to accumulate in a certain amount by means of a surface-oriented action identified by the base verb'	<i>na-sorit'</i> 'litter on'	<i>na-lipnut'</i> 'stick to'	<i>iz-gvazdat'</i> 'make a mess of'
4	<i>ot-</i>	'to perform an action identified by the base verb intensively, completely, and finally'	<i>ot-repetirovat'</i> 'rehearse'	<i>ot-delat'</i> 'decorate'	<i>raz-učit'</i> 'prepare, read through'
5	<i>na-</i>	'to accumulate in a certain amount by means of an action identified by the base verb'	<i>na-lovit'</i> 'catch'	<i>na-cedit'</i> 'pour in slowly'	<i>po-jmat'</i> 'take hold of'
6	<i>pod-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>pod-sčitat'</i> 'calculate'	<i>pod-mesti'</i> 'sweep'	<i>pri-kinut'</i> 'figure out'
7	<i>pro-</i>	'to miss something while performing an action identified by the base verb'	<i>pro-karaulit'</i> 'miss while watching out'	<i>pro-spat'</i> 'oversleep'	<i>u-pustit'</i> 'fail to catch'
8	<i>za-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>za-gustet'</i> 'thicken'	<i>za-minirovat'</i> 'lay mines'	<i>o-krepnut'</i> 'get stronger'
9	<i>ot-</i>	'to separate something that was previously attached as a result of an action identified by the base verb; to annul the result of such action'	<i>ot-lepit'</i> 'detach'	<i>ot-kolot'</i> 'break off; come up with'	<i>u-brat'</i> 'remove'
10	<i>pro-</i>	'to direct an action identified by the base verb through something inward'	<i>pro-gryzt'</i> 'gnaw through'	<i>pro-lezt'</i> 'crawl through'	<i>iz-rešetit'</i> 'riddle'
11	<i>pod-</i>	'to get closer, to join something with an action identified by the base verb'	<i>pod(o)-dvinut'</i> 'move closer'	<i>pod-sest'</i> 'sit near'	<i>pri-blizitsja'</i> 'come near to'
12	<i>nad-</i>	'to additionally increase the size of the object by adding something to it (sometimes to its upper part) with the help of an action identified by the base verb'	<i>nad-vjazat'</i> 'tie on'	<i>nad-stroit'</i> 'build upon'	<i>pri-krepit'</i> 'attach, fasten'
13	<i>do-</i>	'to bring to an undesirable state by an action identified by the base verb'	<i>do-ezdit'</i> 'exhaust someone'	<i>do-kanat'</i> 'finish off someone'	<i>iz-mučit'</i> 'overtire, enfeeble'

No.	Prefix	Prefix meaning	Target verb	Priming verb (Condition 1)	Priming verb (Condition 2)
14	<i>pod-</i>	'to direct an action identified by the base verb downwards, under something'	<i>pod-plyt'</i> 'swim under'	<i>pod(o)-stlat'</i> 'lay under'	<i>pri-dvinut'</i> 'move closer to'
15	<i>pod-</i>	'to clean up something, remove all residues with an action identified by the base verb'	<i>pod-lizat'</i> 'lick up'	<i>pod-edat'</i> 'eat up'	<i>vy-drait'</i> 'scour'
16	<i>ot-</i>	'to head somewhere by means of an action identified by the base verb'	<i>ot-vezti</i> 'drive to'	<i>ot-tasčit'</i> 'drag away'	<i>u-slat'</i> 'send to'
17	<i>iz-</i>	'to remove something from somewhere by means of an action identified by the base verb'	<i>iz-lit'</i> 'pour out (words, feelings)'	<i>iz-gnat'</i> 'drive off'	<i>vy-razit'</i> 'express'
18	<i>s-</i>	'to perform an action identified by the base verb once'	<i>s-glupit'</i> 'make a stupid thing'	<i>s-xodit'</i> 'go to'	<i>o-šibitsja</i> 'make a mistake'
19	<i>po-</i>	'a repeated, sometimes also sequential, action identified by the base verb, which has been applied to all or many objects, or committed by all or many subjects'	<i>po-sažat'</i> 'imprison'	<i>po-tajat'</i> 'thaw out'	<i>arestovat'</i> 'arrest'
20	<i>ob-</i>	'to extend an action identified by the base verb to many objects (or to many places within a single space)'	<i>ob-ezdit'</i> 'go everywhere'	<i>ob-letet'</i> 'fly around'	<i>na-vestit'</i> 'drop in, come to see'
21	<i>pod-</i>	'to perform an action identified by the base verb additionally and, as a rule, with insignificant intensity'	<i>pod-copit'</i> 'save up'	<i>pod-mešat'</i> 'mix in'	<i>po-bereč'</i> 'retain, store'
22	<i>za-</i>	'to perform an action identified by the base verb in advance, beforehand, pre-emptively'	<i>za-stolbit'</i> 'stake out'	<i>za-gotovit'</i> 'prepare'	<i>po-metit'</i> 'mark'
23	<i>na-</i>	'to perform an action identified by the base verb intensively'	<i>na-bezobrazničat'</i> 'mess up'	<i>na-gladit'</i> 'iron'	<i>po-šalit'</i> 'misbehave'
24	<i>po-</i>	'to start an action identified by the base verb'	<i>po-bežat'</i> 'start running'	<i>po-gnatsja</i> 'start chasing'	<i>na-pravitsja</i> 'head to'
25	<i>do-</i>	'to bring to an end or to a limit an action identified by the base verb'	<i>do-letet'</i> 'reach by flying'	<i>do-čitat'</i> 'read through'	<i>pri-byt'</i> 'arrive at'
26	<i>pro-</i>	'to move forward, to overcome some distance by means of an action identified by the base verb'	<i>pro-exat'</i> 'drive through'	<i>pro-plyt'</i> 'swim through'	<i>pri-xodit'</i> 'reach, come to'
27	<i>iz-</i>	'to extend an action identified by the base verb to many places, to many objects'	<i>iz-ranit'</i> 'inflict wounds'	<i>iz-ezdit'</i> 'ride along and across'	<i>raz(o)-drat'</i> 'shred, tear up'
28	<i>na-</i>	'to teach someone something by means of an action identified by the base verb'	<i>na-muštrovat'</i> 'train, prime'	<i>na-učit'</i> 'teach'	<i>vy-dressirovat'</i> 'train, prime'
29	<i>za-</i>	'to perform an action identified by the base verb in passing; to deviate briefly from the main course of action'	<i>za-nesti</i> 'bring in'	<i>za-iti</i> 'come in'	<i>pri-voloč'</i> 'drag along with'

No.	Prefix	Prefix meaning	Target verb	Priming verb (Condition 1)	Priming verb (Condition 2)
30	<i>s-</i>	'to deliver from different places to the same place, to connect by means of an action identified by the base verb'	<i>s-tolknut'</i> 'push against'	<i>s-kleit'</i> 'glue together'	<i>po-ssorit'</i> 'sow discord'
31	<i>s-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>s-komkat'</i> 'crumple'	<i>s-mjagčit'</i> 'soften'	<i>iz-lomat'</i> 'break, crumble'
32	<i>po-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>po-zavtrakat'</i> 'eat breakfast'	<i>po-gibnut'</i> 'perish'	<i>na-syitsja</i> 'feel full'
33	<i>po-</i>	'to perform an action identified by the base verb within a certain period of time (often for a short time)'	<i>po-rabotat'</i> 'work for a while'	<i>po-kurit'</i> 'have a smoke'	<i>na-lomatsja</i> 'work until exhaustion'
34	<i>s-</i>	'to destroy, damage, deplete as a result of an action identified by the base verb'	<i>s-goret'</i> 'burn down'	<i>s-ževat'</i> 'chew up'	<i>vs-pyxnut'</i> 'flare up'
35	<i>za-</i>	'to apply an action identified by the base verb to a part of the object'	<i>za-stirat'</i> 'wash up'	<i>za-tesat'</i> 'trim a log'	<i>po-čistit'</i> 'clean'
36	<i>za-</i>	'to perform an action identified by the base verb immediately after another action'	<i>za-ževat'</i> 'chew something to get rid of an aftertaste'	<i>za-njuxat'</i> 'sniff something to get rid of an aftertaste'	<i>pere-bit'</i> 'get the taste out of one's mouth'
37	<i>ot-</i>	'to perform an action identified by the base verb in response to another action'	<i>ot- blagodarit'</i> 'give credit'	<i>ot-reagirovat'</i> 'react'	<i>voz-nagradit'</i> 'reward'
38	<i>na-</i>	'to direct an action identified by the base verb to a surface of something; place something on the surface, bump into something'	<i>na-kleit'</i> 'glue on'	<i>na-xlynut'</i> 'inundate, overwhelm'	<i>pri-delat'</i> 'attach, join'
39	<i>s-</i>	'to remove something by means of an action identified by the base verb'	<i>s-mesti</i> 'sweep away'	<i>s-brit'</i> 'shave off'	<i>pod(o)-rvatsja</i> 'go off'
40	<i>pro-</i>	'to perform an action identified by the base verb for some time (often for a long time)'	<i>pro-ždat'</i> 'wait for a while'	<i>pro-voročatsja</i> 'shift in bed for a while'	<i>sledit'</i> 'watch closely, follow'
41	<i>ob-</i>	'to direct an action identified by the base verb around an object in the path of movement'	<i>ob-exat'</i> 'drive around something'	<i>ob(o)-jiti</i> 'bypass something'	<i>minovat'</i> 'elude'
42	<i>pod-</i>	'to perform an action identified by the base verb during another action or immediately after it, adapting to someone or something'	<i>pod-pet'</i> 'sing along'	<i>pod-igrat'</i> 'play along'	<i>za-skripet'</i> 'squeak, screech'
43	<i>ob-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>ob-venčat'</i> 'wed'	<i>ob-vetšat'</i> 'decay, deteriorate'	<i>po-ženit'</i> 'marry'
44	<i>v-</i>	'to fit in, to get inside something by means of an action identified by the base verb'	<i>v-polzti</i> 'crawl into'	<i>v-letet'</i> 'fly into'	<i>za-past'</i> 'fall into'
45	<i>ot-</i>	'to refuse or to force the refusal of something by performing an action identified by the base verb'	<i>ot-govorit'</i> 'talk out of something'	<i>ot-učit'</i> 'wean off'	<i>raz-ubedit'</i> 'dissuade'

No.	Prefix	Prefix meaning	Target verb	Priming verb (Condition 1)	Priming verb (Condition 2)
46	<i>iz-</i>	'to destroy, deplete, use up everything accessible through an action identified by the base verb'	<i>is-pisat'</i> 'use up all writing utensils'	<i>is-streljat'</i> 'shoot all the bullets'	<i>po-portit'</i> 'spoil'
47	<i>pod-</i>	'to direct an action identified by the base verb upwards'	<i>pod-brosit'</i> 'throw up'	<i>pod-djornut'</i> 'jerk up'	<i>švyrnut'</i> 'toss, fling'
48	<i>pred-</i>	'to perform an action identified by the base verb in advance'	<i>pred-videt'</i> 'foresee'	<i>pred(o)-steregat'</i> 'warn'	<i>do-gadyvatsja</i> 'guess'
49	<i>za-</i>	'to get, earn, grab something through an action identified by the base verb'	<i>za-voevat'</i> 'conquer'	<i>za-rabotat'</i> 'earn'	<i>s-xvatit'</i> 'seize, catch hold of'
50	<i>pro-</i>	'to perform an action identified by the base verb intensively, thoroughly'	<i>pro-ževat'</i> 'chew and swallow'	<i>pro-dumat'</i> 'think through'	<i>s-est'</i> 'eat up'
51	<i>pro-</i>	'to spend, exhaust, lose anything through an action identified by the base verb'	<i>pro-pit'</i> 'exchange something for alcohol'	<i>pro-žit'</i> 'spend a part of life'	<i>po-xitit'</i> 'steal'
52	<i>ob-</i>	'to direct an action identified by the base verb around something or towards all sides of something'	<i>ob-žarit'</i> 'fry'	<i>ob-lepit'</i> 'cling to'	<i>za-peč'</i> 'bake'
53	<i>nad-</i>	'to apply an action identified by the base verb to a small part of the surface of an object'	<i>nad-pilit'</i> 'make a cut with a saw'	<i>nad-rezat'</i> 'make a cut with a knife'	<i>pro-nizat'</i> 'pierce'
54	<i>ot-</i>	'to bring to an undesirable state (of damage, fatigue) as a result of an action identified by the base verb'	<i>ot-davit'</i> 'tread on one's foot'	<i>ot-ležat'</i> 'stay in bed until one's limbs go numb'	<i>pri-ščemit'</i> 'pinch'
55	<i>pod-</i>	'to perform an action identified by the base verb in a secret, covert manner'	<i>pod-slušat'</i> 'eavesdrop'	<i>pod-brosit'</i> 'plant (drugs, weapon)'	<i>raz(o)-brat'</i> 'hear and understand'
56	<i>na-</i>	'to perform an action identified by the base verb in a gentle, unobtrusive manner'	<i>na-igrat'</i> 'play music a bit'	<i>na-pet'</i> 'sing a bit'	<i>is-polnit'</i> 'perform'
57	<i>na-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>na-smešit'</i> 'make someone laugh'	<i>na-močit'</i> 'make something wet'	<i>raz-veselit'</i> 'cheer up'
58	<i>do-</i>	'to perform an action identified by the base verb as an addition to the previous action, which is necessary to meet the requirements'	<i>do-platit'</i> 'pay in addition'	<i>do-slat'</i> 'send in addition'	<i>pri-pljusovat'</i> 'plus, add up'
59	<i>ob-</i>	'to harm someone (sometimes, cheat someone) through an action identified by the base verb'	<i>ob-vorovat'</i> 'rob of'	<i>ob-delit'</i> 'deprive of'	<i>raz-grabit'</i> 'plunder'
60	<i>iz-</i>	'to perform an action identified by the base verb with a high degree of intensity'	<i>is-soxnut'</i> 'get shallow'	<i>iz-zjabnut'</i> 'get cold'	<i>za-čaxnut'</i> 'languish, fade in'
61	<i>ot-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>ot-iskat'</i> 'find after some searching'	<i>ot-regulirovat'</i> 'tune in, finesse'	<i>na-dybat'</i> 'obtain, search out'

No.	Prefix	Prefix meaning	Target verb	Priming verb (Condition 1)	Priming verb (Condition 2)
62	<i>za-</i>	'to begin an action identified by the base verb'	<i>za-meljkat'</i> 'start moving'	<i>za-gremet'</i> 'start rattling'	<i>po-bežat'</i> 'start moving'
63	<i>ot-</i>	'to remove, to separate from something by means of an action identified by the base verb'	<i>ot-brosit'</i> 'throw away'	<i>ot-gryzt'</i> 'gnaw off'	<i>u-brat'</i> 'take away'
64	<i>za-</i>	'to move to a place (sometimes, remote) by means of an action identified by the base verb'	<i>za-brosit'</i> 'hurl to a great distance'	<i>za-prygnut'</i> 'jump in, jump on'	<i>metnut'</i> 'dart'
65	<i>za-</i>	'to cover up, close with something by means of an action identified by the base verb'	<i>za-pudrit'</i> 'powder something'	<i>za-pjatnat'</i> 'blot one's reputation'	<i>pri-kryt'</i> 'cover'
66	<i>pod-</i>	'to perform an action identified by the base verb with low intensity'	<i>pod-zabyt'</i> 'almost forget'	<i>pod-bodrit'</i> 'cheer up a bit'	<i>za-pamjatovat'</i> 'forget'
67	<i>ot-</i>	'to end an action identified by the base verb that has lasted for a certain period of time'	<i>ot-gremet'</i> 'stop rumbling'	<i>ot-tsvesti'</i> 'stop blossoming'	<i>pro-trezvonit'</i> 'chime'
68	<i>pred-</i>	'to find something in front of oneself as a result of an action identified by the base verb'	<i>pred-stavit'</i> 'imagine'	<i>pred-stojat'</i> 'await'	<i>v(o)-obrazit'</i> 'envisage'
69	<i>za-</i>	'to bring someone to an undesirable state (of unfitness, fatigue, exhaustion) through an action identified by the base verb'	<i>za-draznit'</i> 'tease someone'	<i>za-moročit'</i> 'make a fool out of'	<i>iz-vesti'</i> 'bring to the end of one's tether'
70	<i>pro-</i>	'to move forward, to overcome some distance by means of an action identified by the base verb'	<i>pro-šagat'</i> 'pace'	<i>pro-nesti'</i> 'pass (about danger)'	<i>ot-maxat'</i> 'cover a great distance'
71	<i>po-</i>	'to perform an action identified by the base verb with low intensity, sometimes also gradually'	<i>po-portit'</i> 'spoil a bit'	<i>po-otstat'</i> 'lag behind a bit'	<i>u-grobit'</i> 'ruin'
72	<i>iz-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>iz-lečit'</i> 'cure'	<i>is-pugat'</i> 'frighten'	<i>vos-kresit'</i> 'resurrect'
73	<i>pro-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>pro-demonstrirovat'</i> 'demonstrate'	<i>pro-zvučat'</i> 'sound'	<i>po-kazat'</i> 'show'
74	<i>o-</i>	'to direct an action identified by the base verb around something, on all sides of something'	<i>o-kutat'</i> 'envelop'	<i>o-ledenet'</i> 'freeze, get covered with ice'	<i>ob-voloč'</i> 'encapsulate'
75	<i>o-</i>	'to direct an action identified by the base verb past an object in the path of movement'	<i>o-bežat'</i> 'run around'	<i>o-plyt'</i> 'swim around'	<i>ob-ognut'</i> 'circle, detour'
76	<i>o-</i>	'extend an action identified by the base verb to many objects (or to many places within a single object)'	<i>o-prosit'</i> 'question, survey'	<i>o-delit'</i> 'endow'	<i>pro-intervjuirovat'</i> 'interview'
77	<i>o-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>o-bespokoit'</i> 'worry, raise concerns'	<i>o-čistit'</i> 'clean up'	<i>ras-stroit'</i> 'upset, unsettle'
78	<i>pri-</i>	'to reach a certain place, to arrive or to be delivered to a certain place by means of an action identified by the base verb, to join something'	<i>pri-brestit'</i> 'reach some place while hobbling'	<i>pri-parkovat'</i> 'park (a car)'	<i>pod-ojti'</i> 'come near'

No.	Prefix	Prefix meaning	Target verb	Priming verb (Condition 1)	Priming verb (Condition 2)
79	<i>pri-</i>	'to perform an action identified by the base verb with little intensity, not completely'	<i>pri-vstat'</i> 'raise oneself a bit'	<i>pri-tormozit'</i> 'slow down, pull over'	<i>pod-njatsja</i> 'stand up'
80	<i>pri-</i>	'to perform an action as an addition to the action identified by the base verb; add something to what is already there'	<i>pri-kupit'</i> 'buy additionally'	<i>pri-sočinit'</i> 'lie a bit, decorate a story'	<i>pod-iskat'</i> 'seek out'
81	<i>pri-</i>	'to perform an action identified by the base verb during or immediately after another action'	<i>pri-svistnut'</i> 'whistle'	<i>pri-stuknut'</i> 'clatter'	<i>uljuljukat'</i> 'hoot'
82	<i>pri-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>pri-stydit'</i> 'shame'	<i>pri-laskat'</i> 'caress'	<i>u-sovestit'</i> 'reprobate'
83	<i>so-</i>	'to perform an action identified by the base verb jointly'	<i>so-učastvovat'</i> 'participate'	<i>so-suščestvovat'</i> 'coexist'	<i>po-sobničat'</i> 'abet'
84	<i>u-</i>	'to move away from somewhere, to leave (force to leave) some place with the help of an action identified by the base verb'	<i>u-gnat'</i> 'hijack'	<i>u-polzti</i> 'crawl away'	<i>po-xitit'</i> 'steal'
85	<i>u-</i>	'to get completely covered in something by means of an action identified by the base verb'	<i>u-stavit'</i> 'set up'	<i>u-kutatsja</i> 'wrap oneself up'	<i>za-xlamit'</i> 'clutter'
86	<i>u-</i>	'bring someone or something to an undesirable state (extreme fatigue, powerlessness, exhaustion) by means of an action identified by the base verb'	<i>u-ezdit'</i> 'wear down'	<i>u-kačat'</i> 'to cause motion sickness'	<i>do-kanat'</i> 'finish off'
87	<i>u-</i>	'to get reduced by means of an action identified by the base verb'	<i>u-žat'</i> 'reduce by squeezing'	<i>u-žit'</i> 'stitch up'	<i>so-kratit'</i> 'shorten'
88	<i>u-</i>	'to destroy, deplete something by means of an action identified by the base verb'	<i>u-xopat'</i> 'spend a large amount of something in vain'	<i>u-plesti</i> 'eat everything up'	<i>po-tratit'</i> 'spend'
89	<i>u-</i>	'to make something fit in somewhere by means of an action identified by the base verb'	<i>u-mestit'</i> 'fit something in some place'	<i>u-pisat'</i> 'use all provided space for writing'	<i>v-tisnut'</i> 'squeeze in'
90	<i>u-</i>	'to keep the posture identified by means of the base verb'	<i>u-terpet'</i> 'keep patience'	<i>u-stojat'</i> 'withstand'	<i>s-deržatsja</i> 'hold back'
91	<i>u-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>u-stydit'</i> 'make ashamed'	<i>u-žalit'</i> 'sting'	<i>po-sramit'</i> 'put someone to shame'
Non-prepositional prefixes					
1	<i>vz-</i>	'to get upwards by means of an action identified by the base verb'	<i>vz-loxmatit'</i> 'dishevel'	<i>vz-letet'</i> 'take off'	<i>ras-trepat'</i> 'dishevel'
2	<i>vz-</i>	'to perform an action identified by the base verb intensely or abruptly, suddenly'	<i>vz-vizgnut'</i> 'screech'	<i>vz-dorožat'</i> 'become expensive'	<i>pro-piščat'</i> 'squeal'

No.	Prefix	Prefix meaning	Target verb	Priming verb (Condition 1)	Priming verb (Condition 2)
3	<i>vz-</i>	'to start an action identified by the base verb intensely or abruptly, suddenly'	<i>vz-revet'</i> 'roar'	<i>vz-volnovatsa</i> 'feel uneasy'	<i>rjavknut'</i> 'bark'
4	<i>vz-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>vz-besit'</i> 'outrage'	<i>vs-potet'</i> 'sweat'	<i>raz-jarit'</i> 'infuriate'
5	<i>voz-</i>	'to get upwards by means of an action identified by the base verb'	<i>voz-vesti</i> 'erect'	<i>vos-parit'</i> 'soar'	<i>po-stroit'</i> 'build'
6	<i>voz-</i>	'to perform of an action identified by the base verb once again'	<i>voz-rodit'</i> 'resurrect'	<i>vos-soedinit'</i> 'reunite'	<i>o-živit'</i> 'revive'
7	<i>voz-</i>	'to start an action identified by the base verb'	<i>voz-likovat'</i> 'rejoice'	<i>voz-nenavidet'</i> 'start hating'	<i>ob-radovatsja</i> 'be delighted'
8	<i>voz-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>voz-mužat'</i> 'come of age'	<i>vos-prepjatstvovat'</i> 'hinder'	<i>za-materet'</i> 'mature'
9	<i>vy-</i>	'to move away, to stand out from something, to direct out by means of an action identified by the base verb'	<i>vy-lomat'</i> 'break out'	<i>vy-karabkatsja</i> 'make it through'	<i>ot-odrat'</i> 'rip off'
10	<i>vy-</i>	'to perform an action identified by the base verb intensively and/or thoroughly'	<i>vy-belit'</i> 'make white'	<i>vy-lizat'</i> 'lick out'	<i>o-svetit'</i> 'shed light on'
11	<i>vy-</i>	'to get, obtain, find something by means of an action identified by the base verb'	<i>vy-lovit'</i> 'catch, fish out'	<i>vy-stradat'</i> 'achieve through suffering'	<i>po-jmat'</i> 'catch'
12	<i>vy-</i>	'to endure something or wait for something for some time while performing an action identified by the base verb'	<i>vy-sidet'</i> 'wait for something inactively'	<i>vy-žit'</i> 'survive'	<i>do-ždatsja</i> 'receive after long waiting'
13	<i>vy-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>vy-kopat'</i> 'dig out'	<i>vy-lečit'</i> 'cure'	<i>do-stat'</i> 'get'
14	<i>de-</i>	'to perform an action contrary to the action identified by the base verb, thus annulling the result of the former action'	<i>de-šifrovat'</i> 'decipher'	<i>de-mobilizovat'</i> 'demobilise'	<i>ras-kodirovat'</i> 'decode'
15	<i>dis-</i>	'to perform an action contrary to the action identified by the base verb, thus annulling the result of the former action'	<i>dis-kvalificirovat'</i> 'disqualify'	<i>dis-garmonirovat'</i> 'be in disharmony'	<i>za-banit'</i> 'ban'
16	<i>nedo-</i>	'to perform an action identified by the base verb incompletely, fail to achieve the necessary standard'	<i>nedo-ocenit'</i> 'underestimate'	<i>nedo-žarit'</i> 'underbake'	<i>pre-umenjšit'</i> 'belittle'
17	<i>niz-</i>	'to direct an action identified by the base verb downwards'	<i>niz-vergnut'</i> 'overthrow'	<i>niz-ojti</i> 'descend'	<i>s-brosit'</i> 'drop'
18	<i>pere-</i>	'to direct an action identified by the base verb from one place to another through an object or space'	<i>pere-brosit'</i> 'overthrow'	<i>pere-pilit'</i> 'saw through'	<i>kinut'</i> 'throw'
19	<i>pere-</i>	'to place something between different objects or parts of one object by means of an action identified by the base verb'	<i>pere-sypat'</i> 'sprinkle with something'	<i>pere-vit'</i> 'join by twisting'	<i>s-mešat'</i> 'mix'
20	<i>pere-</i>	'to perform an action identified by the base verb repeatedly, anew, sometimes in a new manner'	<i>pere-delat'</i> 'redo'	<i>pere-kroit'</i> 'reshape'	<i>iz-menit'</i> 'change'

No.	Prefix	Prefix meaning	Target verb	Priming verb (Condition 1)	Priming verb (Condition 2)
21	<i>pere-</i>	'to perform an action identified by the base verb repeatedly or sequentially, distribute it to all or many objects'	<i>pere-budit'</i> 'wake up everyone'	<i>pere-byvat'</i> 'have many people as visitors'	<i>pod-njat'</i> 'raise'
22	<i>pere-</i>	'to perform an action identified by the base verb with an undesirable duration and/or intensity'	<i>pere-xvalit'</i> 'overpraise'	<i>pere-gret'</i> 'overwarm'	<i>slavoslovit'</i> 'sing the praises of'
23	<i>pere-</i>	'to perform an action identified by the base verb intensively'	<i>pere-koverkat'</i> 'twist up'	<i>pere-trusit'</i> 'chicken out'	<i>iz-vratit'</i> 'distort'
24	<i>pere-</i>	'by means of an action identified by the base verb, to surpass another performer of the same action'	<i>pere-pljasat'</i> 'win in a dancing contest'	<i>pere-sporit'</i> 'get the upper hand in dispute'	<i>ob-skakat'</i> 'outdo'
25	<i>pere-</i>	'to extend an action identified by the base verb to a specific, usually necessary or predetermined period of time'	<i>pere-ždat'</i> 'wait till the end of something'	<i>pere-zimovat'</i> 'live through the winter'	<i>po-vremenit'</i> 'wait, hold off'
26	<i>pere-</i>	'to cease an action identified by the base verb, usually after a long or intensive performing of the action'	<i>pere-xotet'</i> 'stop wanting'	<i>pere-brodit'</i> 'stop brewing'	<i>raz-dumat'</i> 'change one's mind'
27	<i>pere-</i>	'to perform an action identified by the base verb in a brief, non-intensive manner'	<i>pere-kurit'</i> 'stop doing something for a smoke'	<i>pere-dohnut'</i> 'have a short respite'	<i>po-dymit'</i> 'puff out smoke'
28	<i>pre-</i>	'to perform an action identified by the base verb fully, intensively, sometimes excessively'	<i>pre-uveličit'</i> 'exaggerate'	<i>pre-ispolnit'</i> 'fill up'	<i>pri-sočinit'</i> 'elaborate'
29	<i>raz-</i>	'to spread in different directions, disengage by means of an action identified by the base verb'	<i>ras-krošit'</i> 'crumble'	<i>raz-oslat'</i> 'send out'	<i>iz-meljčit'</i> 'shred'
30	<i>raz-</i>	'to annul the result of an action identified by the base verb; to refuse or force to refuse to do something'	<i>raz-morozit'</i> 'defreeze'	<i>raz-minirovat'</i> 'demine'	<i>ot-tajat'</i> 'thaw out'
31	<i>raz-</i>	'to perform an action identified by the base verb with high intensity'	<i>ras-tolstet'</i> 'gain weight'	<i>ras-kritikovat'</i> 'chastise'	<i>o-žiret'</i> 'become obese'
32	<i>raz-</i>	'to perceive or explain something in detail by means of an action identified by the base verb'	<i>raz-gljadet'</i> 'discern'	<i>ras-tolkovat'</i> 'spell out'	<i>pri-metit'</i> 'notice'
33	<i>raz-</i>	'to perform (bring to fruition) an action identified by the base verb'	<i>ras-cvesti'</i> 'bloom'	<i>raz-veselit'</i> 'make someone laugh'	<i>po-xorošet'</i> 'flourish, become more beautiful'
34	<i>re-</i>	'to perform an action identified by the base verb repeatedly, anew, sometimes in a new manner'	<i>re-organizovat'</i> 'reorganise'	<i>re-interpretirovat'</i> 'reinterpretate'	<i>pere-stroit'</i> 'rebuild'

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