

DOI: 10.22363/2618-8163-2025-23-2-241-256

EDN: DTESPW

Research article

Dynamics of changes in Russian verbal paradigm under the influence of secondary imperfectivisation

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Abstract. The relevance of the study is determined by the fact that the variability of aspectual affixes in the Russian language has not been fully studied. Meanwhile, super-large diachronic corpora of texts provide the opportunity of a detailed quantitative description of verbal affixes evolution. The aim of the study is to identify objective syntagmatic and paradigmatic factors (extrasyllabic synharmonicity, word morphological structure evolution, lexical compatibility, style) that determine the choice of one of the competing suffixes among variable verbs with the redundant paradigm with secondary imperfectivisation *-a-(-ya-)/-yva-(-iva-)*. The authors used the Russian language corpus of the Google Books Ngram corpus, including data on the word forms frequency over the past 200 years. The authors used methods of corpus analysis and diachronic quantitative analysis. The study revealed psychophonetic, morphological, semantic, and stylistic factors affecting the linguistic changes of redundant verbal paradigms. The authors came to the conclusion that, contrary to popular belief, the former *na -a-(-ya-)* variant is not replaced with the *-iva-(-yva-)* form in most cases; according to frequency dynamics, a temporary increase in the popularity of forms of secondary imperfectivisation in general was followed by a return to the primary forms of Imperfect in recent decades. In rare cases, where a form with a suffix denoting iteration is approved, the form was chosen because of the root vowel, “l-epenteticum”, and verb prefixes. The frequency and prevalence of the verb hypothetically preventing the emergence of variants or unification had no effect on language changes. The developed approach can be applied to study evolution of competing word forms in a wide range of cases.

Keywords: morphology, verb, secondary imperfective, verbal aspect pairs, frequency, linguistic norm, lexical compatibility

Contribution: Galeev T.I., Solovyov V.D. — research concept and design; Bochkarev V.V. — collection and processing of materials; Galeev T.I., Bochkarev V.V. — analyzing the obtained data, writing the text.

Funding. The work was done at the expense of the subsidy allocated within the framework of the state support of Kazan (Volga Region) Federal University increasing its competitiveness among the world’s leading scientific and educational centers “Priority – 2030”.

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Conflict of interests. The authors declare that they have no conflict of interests.

Article history: received 12.09.2024; accepted 28.12.2024.

For citation: Galeev, T.I., Solovyov, V.D., & Bochkarev, V.V. (2025). Dynamics of changes in Russian verbal paradigm under the influence of secondary imperfectivation. *Russian Language Studies*, 23(2), 241–256. <http://doi.org/10.22363/2618-8163-2025-23-2-241-256>

Introduction

During his years of teaching at Kazan University, I.A. Baudouin de Courtenay developed a lecture course where he outlined the laws of “equilibrium” and “historical movement” of language and pointed out the necessity of an interdisciplinary approach to study those laws: “... the languages under study should be subjected to a comprehensive element-by-element analysis in all possible directions”; “... it is necessary to apply quantitative mathematical thinking more often in linguistics and thus bring it closer to the exact sciences”; “linguistic generalizations will cover a wider range of sciences and increasingly connect linguistics with other sciences: psychology, anthropology, sociology, biology”, ‘the notions of language development and evolution is to become the basis of thinking’ (Baudouin de Courtenay, 1963: 17).

Prominent representatives of Kazan School of Linguistics (Krushevskii, 1883; Anastasiev, 1898; Bogoroditskii, 1911), developed these ideas into the doctrine of statics and dynamics, which has gained special relevance in the works of modern Russian researchers of linguistic norms (Rosental’, 1988; Bondarko, 2002; Graudina, 2004; Dorofeev, Zhuravleva, 2023; Zdorikova, Abyzov, Makarova, 2022; Zhdanova, Ratsiburskaya, 2024). The issues of historical dynamics are relevant for many areas of modern linguistics since language system evolution is manifested in variation. A particular case of language evolution manifestation is synchronous grammatical variants of one word form among which one is initially considered preferable and the other one violating stylistic norms. These violations often represent a prototype of a future norm: “the development of languages in general consists primarily of changes that were initially perceived as errors from the point of view of the modern norm” (Matezius, 1967: 360).

Following A.V. Bondarko, we understand the norm as “a set of phenomena authorized by the language system, selected and fixed in the speech of native speakers and obligatory for all speakers of the literary language in a certain period of time” (Bondarko, 2002: 14). Information technologies simplified quantitative description of redundant and “competing” paradigm variants in book language. We mean such a confluence of circumstances due to historical changes in the grammatical system when a linguistic innovation previously considered an error or commonplace competes in frequency with the established form which is perceived as the rule (Gorbachevich, 2009: 240; Smirnov, 2010: 272–298; Tatevosov 2013: 42–89; Gorbova 2016: 149–158).

Foreign linguistics also has “quantitative and mathematical thinking” (Baudouin de Courtenay, 1963), for example, when studying unification of irregular verbs in English. The work “Quantifying the evolutionary dynamics of language” (Lieberman et al., 2007: 716–723) revealed that irregular verb forms gradually give way to an emerging linguistic rule and determined how unification rate depends on the frequency of words-exceptions. We prove that high-frequency English verbs are less likely than low-frequency verbs to undergo regularization, i.e. transition from the group of irregular verbs to the group of regular verbs.

A similar study analyzed the competition between German verbs of strong (regular) and weak (irregular) conjugation by foreign (Carroll, Svare, Salmons, 2012: 153–172) and domestic linguists (Piperski, 2014: 821–831). The study quantitatively confirm “the intuitive assumption that higher-frequency words usually retain their conjugation form while less common words may change” (Piperski, 2014: 821–831) under the influence of similar forms and move from weak to strong.

There are several similar phenomena of verb variation in the Russian language. These are personal forms with fluctuating productivity/non-productivity of the verb class in the present (*alchet / alkaet* ‘(he/she longs for)’, *koleblet / kolebaet* ‘he/she shakes’) and past tense (*voznik / vozniknul* ‘arose’), two-aspect verbs and their non-homonymic suffixal correlates (*organizovat’ / organozivovyvat’* ‘to organize’), secondary imperfectives (*nakoplyat’ / nakaplivat’* ‘to accumulate’), and in the category of secondary imperfectives alternations in the root vowel (*obuslovlivaet / obuslavlivaet* ‘he / she / it conditions’). Having experience in the study of the first, second, third and fifth types (Galeev, Solovyev, 2016: 177–180; Galeev, Habibulina, 2017: 90–98; Galeev, Shevlyakova, Bochkarev, 2020: 145–154), we would like to focus on the fourth type of variation (*nakoplyat’ / nakaplivat’* ‘to accumulate’, *izgotovlyat’ / izgotavlivat’* ‘to make’) in this article.

Let us discuss the reasons for this redundancy.

As a result of the verb bases rearrangement in the early 12th century, the productive suffix -yva/iva- appeared. Being initially an indicator of verbal action incompleteness, in the Middle Russian period the suffix acquires the meaning of iterativity (repeatability) (*khazhival* ‘used to go’, *posmatrivayu* ‘look from time to time’) (Klimonov, 2015: 155–164). Since the beginning of the 18th century, the marker of iterativity has been preserved only in colloquial speech (*vidival* ‘saw several times’) and in vernacular (*pozvanivayu* ‘I sometimes call’). So we can speak about “a multicomponent concept of aspect” (Paducheva, 2013). In the 20th century, book speech liberalization and editorial activity weakening, prefixal verbs get variation of forms with suffixes -yva/iva- // -a/ya- (Graudina, 2004). Linguistic evolution has led to the situation that in the last 70 years the personal forms of the verb *nakaplivat’* ‘to accumulate’ have become more frequent than those of the verb *nakoplyat’* ‘to accumulate’ (Zeldovich, 2014; Kozera, 2018).

The aim of this research is to identify objective syntagmatic and paradigmatic factors (extrasyllabic syngarmonism, evolution of the morphological structure of the word, lexical combinability, style) that determine the choice of one of the competing suffixes on the example of variant verbs of the redundant paradigm with secondary imperfectivization *-a/ya-* and *-yva/iva-*.

Materials and methods

To describe the “spontaneic process” of sound and morpheme transformations in the history of language, we follow I.A. Baudouin de Courtenay and N.V. Krushevsky and adhere to strict statistical methods using approaches of exact sciences (Baudouin de Courtenay, 1963; Krushevsky, 1883).

To analyze verb variants competition, we use *corpus and quantitative methods* with elements of *correlation and regression analysis*.

The material of the article includes data of the Russian-language subcorpus of the Google Books library with 67 billion word uses (Lin et al., 2012). The Ngram Viewer service is based on this library.

The method of word formation modeling was used to compile the list of variative verbs. In order to expand the list of 39 verbs from reference books, including (Graudina, 2004: 557), we set the search model of verb pairs “N + yva + X // N + ya + X” and “N + yva + X // N + a + X”, where N is the verb base common to the two forms and X is the same inflection in the two forms. With the help of the model we discovered 48 verb pairs not included in reference books. So we used the corpus of texts as a source of hidden data about the language and a means of enriching dictionaries.

We compared forms throughout the paradigm pairwise: personal verb forms, past tense, participles, adverbial participles, and imperatives (up to 15 elements).

To determine the semantic factors influencing verb form competition, we applied a conjunction analysis, as we consider it a quantitative representation of the verb semantics according to the distributive hypothesis (Sahlgren, 2008: 33-53).

Results

To evaluate the linguistic dynamics of 87 verb paradigms (1305 pairs), 882 word frequency graphs were constructed on the material of texts of the Russian-language part of the Google Books corpus for the period 1800-2008 and the main patterns of change in verb pairs frequency were described. These graphs represent the nature of form competition for more than two centuries, classify the obtained cases and identify similarities in similarly behaving variant pairs by formal features: phonetics, combinability, and stylistics. Classification of the obtained results showed the picture of “competition” among redundant forms.

The analysis of combinability has shown that when one dominant form changes and the other remains in speech (e.g., in the 1940s, the form *nakaplivat*

‘accumulate’ surpasses the form *nakoplyat* ‘accumulate’ in frequency), verbs differ in lexical combinability: abstract nouns are used with the verb *nakaplivat* ‘accumulate’ (... *energy, knowledge, experience, information, forces, means*), while the verb *nakoplyat* ‘to accumulate’ is used with concrete nouns, usually with the semantics of “material values” (*wealth, money, debts, forces, material, money, stocks*).

The authors revealed that the texts in the corpus belong to major genres of fiction and journalism, which makes the resulting collection of examples stylistically homogeneous. Consequently, some extra-linguistic factors, such as the author’s literacy level and editing, do not have a significant impact on the nature of competition. Thus, when discussing the results of the study, we were able to dwell in detail on the analysis of the phonetic and morphological levels of the language in different time periods when this or that form prevailed was withdrawn. This showed the correlation of linguistic changes with the norm-forming activity of writers and publicists.

Discussion

Having formed a sample and plotted the dynamics of word-form frequency, we relate the quantitative measure of the frequency of each verb pair over 200 years (1) and the prevalence of each variant in book speech (2) to the behavior of competing pairs before proceeding to the phonetic and morphological analysis of competing variants (3–6).

1. Dynamics of the competition of redundant forms

33.9% of cases contained only one of the forms: *-a/ya-* (Fig. 1). As mentioned above, the forms on *-a/ya-* (*vymeryaesh* ‘you measure’) are considered to be more ancient relative to the secondary imperfective *vymerivaesh* ‘you measure’. This is reflected in the book speech of the 19th–20th centuries.

In the remaining 66.1% of cases, there is a competition of different dynamics over a two-century time interval. Let us divide the cases of competition by frequency dynamics into several groups:

1. The frequency of the variant with the suffix *-a/ya-* falls with the corresponding growth of the secondary imperfective (e.g., *prisposoblyat* / *prisposablivat* ‘to adapt’) in 13.9% of cases (Fig. 2).

2. Both forms are equally frequent during the period, and only at the end of the 20th century the *-a/ya-* form predominates (e.g., *prostuzhalsya* instead of *prostuzhivalsya* ‘used to catch a cold’) in 13.2% of cases (Fig. 3).

3. The dominance of the *-a/ya-* form with stable, but lesser use of the *-yva/iva-* form (e.g., *obosoblyat* ‘to detach’ is usually used, but the form *obosablivat* is also found) in 10.8% of cases (Fig. 4).

4. Decrease in the frequency of both verb forms by the end of the 20th century, which testifies for the norm change (e.g., in the 19th century, the form *obrezyvayete* ‘you are cutting’ was more frequent, while at the present stage it is equal to the form *obrezayete*) in 10.1% of cases (Fig. 5).

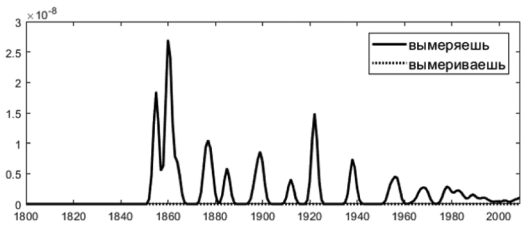


Fig. 1. One of the options “wins”
Source: completed V.V. by Bochkarev.

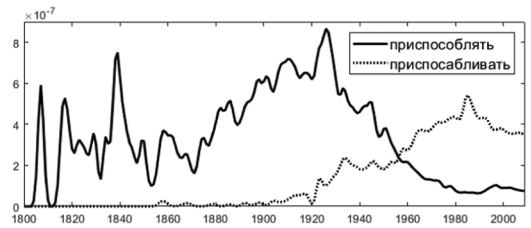


Fig. 2. The norm is maintained
Source: completed V.V. by Bochkarev.

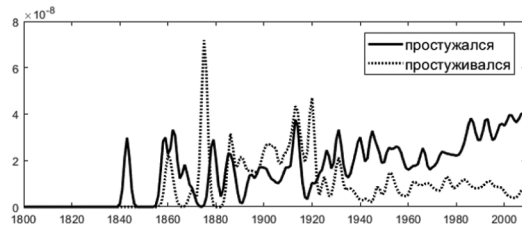


Fig. 3. Competition with the “victory” of one of the forms
Source: completed V.V. by Bochkarev.

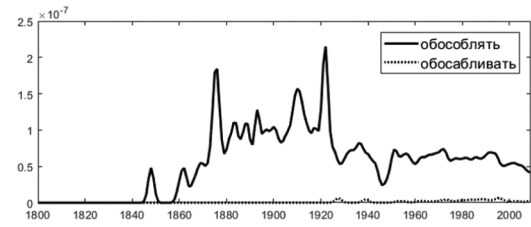


Fig. 4. Dominance of one of the options
Source: completed V.V. by Bochkarev.

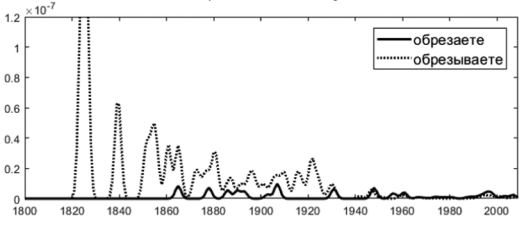


Fig. 5. Reducing the frequency of the verb
Source: completed V.V. by Bochkarev.

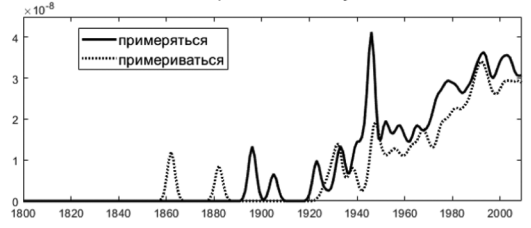


Fig. 6. Both forms are equally frequent
Source: completed V.V. by Bochkarev.



Fig. 7. The beginning of the norm change
Source: completed V.V. by Bochkarev.

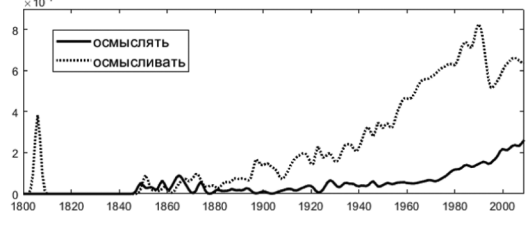


Fig. 8. One form becomes more frequent
Source: completed V.V. by Bochkarev.



Fig. 9. The dominant word form is changing twice
Source: completed V.V. by Bochkarev.

5. Both forms are equally frequent throughout the entire period (e.g. pair *primeryat'sya* / *primerivat'sya* 'to try on') in 7.9% of cases (Fig. 6).

6. After a long period of high frequency of both competing forms in the beginning of the 21st century, one of the variants surpasses the other in frequency as in the initial phase of the type with suffix *-a/ya-* (e.g., *ozdoravlivat* 'to make healthier' becomes more frequent than *ozdorovlyat* 'to make healthier'), in 6.9% of cases (Fig. 7).

7. A steady increase in the frequency of one competing form (e.g., *osmyslivat* 'to comprehend' prevails over *osmyslyat*) over a long period in 2.1% of cases (Fig. 8).

8. The dominant form changes twice in 1.2% of cases (*zakalyali* '(they) hardened' in the 19th century and until the 1960s → *zakalivali* in the second half of the 20th century → *zakalyali* in the 21st century) (Fig. 9).

2. The influence of frequency on the competition outcome

To reveal the influence of redundant verb paradigm forms frequency on the tendency to suffix choice, we follow the researchers of English irregular verbs (Lieberman et al., 2007) and apply the ranking method to compare the most (90–280 thousand word uses) and least (less than 10 thousand) frequent verbs in the frequency ranking (Table 1).

We revealed a tendency to choose the suffix *-a/-ya*, similar to Charts 3 and 8 with the paradigms of the least frequent verbs *vymer(ya/iva)t* 'to measure', *zasor(ya/iva)t* 'to clog', *nakal(ya/iva)t* 'to heat up', *obmer(ya/iva)t* 'to measure out', *oporozhn(ya/iva)t* 'to empty', *prostuzh(a/iva)t* 'to chill' and their reflexive forms. In the 19th century, both variants were equally widespread.

The most widespread verbs (*vyrezat* 'to cut', *prigotovlyat* 'to prepare', *srezat* 'to cut off', *suzhat'sya* 'to shrink', *uskoryat* 'to accelerate' and their reflexive forms) replace the variant with *-iva/yva-*, which prevailed in the 19th century, with the variant with *-a/ya-* in the middle of the 20th century. This is like the graph in Figure 2.

Here are the cases where the variant with *-yva/iva-* prevails over the previously prevailing variant with *-a/ya-*: *izgotavlivat* 'to make', *nakaplivat* 'to accumulate', *nadlomlyat* 'to break', *vyzdoravlivat* 'to recover', *prisposablivat'sya* 'to adjust'.

Thus, the prevalence of the verb with variation associated with secondary imperfectivization in book speech does not affect the outcome of the competition; the prevalence of forms with *-a/ya-* after a long competition is the same among both frequent and rare verbs.

Let us turn to the linguistic factors proper, which can affect the variant assertion. Table summarizes cases of competition of variant forms of verbs with morphological and phonetic parameters.

Cases of competition of variable forms of verbs with morphological and phonetic parameters

№	Verbs	Prefix	Root vowel	Variation in the root	Status of “L”	Postfix	Average frequency over 208 years, % in the total volume of the corpus Google Books Ngram	The result of the competition
1	2	3	4	5	6	7	8	9
1	вкраплять / вкрапливать	в-	а	–	корне-вой	–	0.000005	-я- established
2	вкрапляться / вкрапливаться	в-	а	–	корне-вой	+	0.0000086	-я- is taking shape
3	вtraвлиять / вtraвливать	в-	а	–	корне-вой	–	0.00000375	-ива- established
4	вылеплять / вылепливать	вы-	е	–	корне-вой	–	0.000003	long-term competition
5	вылепляться / вылепливаться	вы-	е	–	корне-вой	+	0.000001	-ива- prevails
6	вылупляться / вылупливаться	вы-	у	–	l-epent.	+	0.0000255	-я- prevails
7	вымерять / вымеривать	вы-	е	–	–	–	0.0000125	-я- prevails
8	вырезать / вырезывать	вы-	е	–	–	–	0.00023	-а- prevails
9	вытравлиять / вытравливать	вы-	а	–	l-epent.	–	0.000022	-ива- is taking shape
10	вытравлияться / вытравли-ваться	вы-	а	–	корне-вой	–	0.000005	established first -ива-, then -я-
11	выхвалять / выхваливать	вы-	а	–	корне-вой	–	0.000025	-а- prevails
12	выхваляться / выхваливаться	вы-	а	–	–	+	0.0000075	-я- prevails
13	забелять / забеливать	за-	е	–	корне-вой	–	0.0000015	-ива- prevails
14	заготавливать / заготовливать	за-		о/а	l-epent.	–	0.00013	-ива- is taking shape
15	заготавливать-ся / заготовли-ваться	за-		о/а	l-epent.	+	0.0000625	the frequency has equalized, then -ива- is growing
16	закалять / закаливать	за-	а	–	корне-вой	–	0.0000550	-я- prevails
17	закаляться / закаливаться	за-	а	–	корне-вой	+	0.000054	-я- prevails
18	замерять / замеривать	за-	е	–	–	–	0.000024	-я- detected
19	запаять / запаяивать	за-	а	–	–	–	0.000013	established first -ива-, then -я-
20	засорять / засаривать	за-		о/а	–	–	0.00001	-я- prevails
21	засоряться / засариваться	за-		о/а	–	+	0.0000030	-я- prevails
22	затоплять / затапливать	за-		о/а	l-epent.	–	0.00005	-ива- is growing
23	изготавливать / изготавливать	из-		о/а	l-epent.	–	0.0005	-ива- is taking shape

Continuation of the table

1	2	3	4	5	6	7	8	9
24	изготавливать / изготавливаться	из-		o/a	l-epent.	+	0.000404	-ива- is growing
25	измерять / измеривать	из-	е	–	–	–	0.00055	-я- detected
26	надломлять / надламывать	над-		o/a	l-epent.	–	0.000006	-ива- detected
27	надломляться / надламываться	над-		o/a	l-epent.	+	0.0000057	long-term competition
28	накалять / накаливать	на-	а	–	корневой	–	0.000024	-ива- established
29	накаляться / накаливаться	на-	а	–	корневой	+	0.000011	-ива- established
30	накоплять / накапливать	на-		o/a	l-epent.	–	0.000080	-ива- established
31	накопляться / накапливаться	на-		o/a	l-epent.	+	0.00053	-ива- established
32	намеряться / намериваться	на-	е	–	–	–	0.000006	-ива- established
33	натравлять / натравливать	на-	а	–	l-epent.	–	0.000045	-ива- established
34	натравляться / натравливаться	на-	а	–	l-epent.	+	0.00000225	-ива- established
35	обмерять / обмеривать	о-	е	–	–	–	0.000013	after long-term competition -ива- established
36	обособлять / обособливать	об-		o/a	l-epent.	–	0.00003	-я- prevails
37	обособляться / обособливаться	об-		o/a	l-epent.	+	0.0000225	-я- prevails
38	обрезать / обрезать	о-	е	–	–	–	0.00009	-а- established
39	огранять / огранивать	о-	а	–	–	–	0.0000016	-ива- established
40	ограняться / ограниваться	о-	а	–	–	–	0.00000040	-ива- established
41	одарять / одаривать	о-	а	–	–	–	0.00005	the -а- retained the same frequency, but the -ива- surpassed it
42	одаряться / одариваться	о-	а	–	–	+	0.0000015	-ива- established
43	оздоровлять / оздоравливать	о-		o/a	l-epent.	–	0.000014	-ива- established
44	оздоровляться / оздоравливаться	о-		o/a	l-epent.	+	0.0000032	-ива- established
45	окормлять / окормливать	о-		o/a	l-epent.	–	0.000012	-я- prevails
46	опалать / опаливать	о-	а	–	корневой	–	0.000013	long-term competition
47	опалаться / опаливаться	о-	а	–	корневой	–	0.0000042	-я- prevails

Continuation of the table

1	2	3	4	5	6	7	8	9
48	опорожнять / опоражнивать	о-	о	–	–	–	0.000016	-я- established
49	опорожняться / опоражниваться	о-		о/а	–	+	0.00000300	-я- established
50	опылять / опыливать	о-	ы	–	корневой	–	0.000022	-я- established
51	опыляться / опыливаться	о-	ы	–	корневой	+	0.0000153	-я- established
52	осмыслять / осмысливать	о-	ы	–	?	–	0.00014	-ива- prevails
53	остужать / остуживать	о-	у	–	–	–	0.000014	-а- prevails
54	отмерять / отмеривать	от-	е	–	–	–	0.000052	-я- established
55	отмеряться / отмериваться	о-	е	–	–	+	0.0000112	-я- prevails
56	отравлять / отравливать	о-	а	–	l-epent.	–	0.00017	-я- established
57	перебелять / перебеливать	пере-	е	–	корневой	–	0.0000028	long-term competition
58	перемерять / перемеривать	пере-	е	–	–	–	0.0000048	-я- established
59	переосмыслять / переосмысливать	пере-	ы	–	?	–	0.000043	-ива- established
60	переосмысляться / переосмысливаться	пере-	ы	–	?	+	0.0000307	long-term competition
61	подготовлять / подготавливать	под-		о/а	l-epent.	–	0.0003	-ива- established
62	подготавливаться / подготавливаться	под-		о/а	l-epent.	+	0.00017	-ива- established
63	подменять / подменивать	под-	е	–	–	–	0.00022	-я- prevails
64	подменяться / подмениваться	под-	е	–	–	+	0.0001014	-я- prevails
65	примерять / примеривать	при-	е	–	–	–	0.000085	-я- established
66	похваляться / похваливаться	по-	а	–	корневой	+	0.000088	-я- prevails
67	приготовлять / приготавливать	при-		о/а	l-epent.	–	0.00035	-я- prevails
68	приготавливаться / приготавливаться	при-		о/а	l-epent.	+	0.00044	-я- prevails
69	приспособляться / приспособливаться	при-		о/а	l-epent.	+	0.00029	-ива- established
70	приспособлять / приспособливать	при-		о/а	l-epent.	–	0.00011	-ива- established

Ending of table

1	2	3	4	5	6	7	8	9
71	промерять / промеривать	про-	е	–	–	–	0.0000055	-я- established
72	примеряться / примериваться	при-	е	–	–	+	0.00004	long-term competition
73	простужать / простуживать	про-	у	–	–	–	0.0000024	long-term competition
74	простужать- ся / простужи- ваться	про-	у	–	–	+	0.0000128	-а- established
75	раскалять / раскаливать	рас-	а	–	корне- вой	–	0.000008	-я- established
76	растравлять / растравливать	рас-	а	–	l-epent.	–	0.000031	-я- established
77	растравлять- ся / растравли- ваться	рас-	а	–	l-epent.	+	0.0000015	long-term competition
78	скоплять / скапливать	с-		о/а	l-epent.	–	0.000021	long-term competition
79	скопяться / скапливаться	с-		о/а	l-epent.	+	0.000187	-ива- established
80	срезать / сре- зывать	с-	е	–	–	–	0.00012	-а- established
81	сужать / сужи- вать	с-	у	–	–	–	0.00015	-а- established
82	сужаться / суживаться	с-	у	–	–	+	0.00035	-а- established
83	узаконять / узаконивать	у-	о	–	–	–	0.0000151	-ива- established
84	умалять / ума- ливать	у-	а	–	корне- вой	–	0.0002	-я- established
85	урезать / уре- зывать	у-	е	–	–	–	0.000055	-а- established
86	ускорять / ускоривать	у-	о	–	–	–	0.0004	-я- established
87	ускоряться / ускориваться	у-	о	–	–	+	0.00016	-я- established

Source: completed by T.I. Galeev.

The results obtained from the corpus show that the linguistic conditions listed by I.A. Baudouin de Courtenay, which we describe in 3-5, had a certain influence on the choice of suffix.

3. Root Vowel

According to the root vowel, verbs are divided into two groups: those with alternating root vowels *o/a* (*nadlomlyat'sya* / *nadlamyvat'sya* 'to break') and those without alternating root vowels *e, o, a, u, s* (e.g., *vyrez(a/yva)t'* 'to cut', *umal(ya/iva)t'* 'to diminish', *osmysl(ya/iva)t'* 'to understand', *otravl(ya/iva)t'* 'to poison', *pereosmysl(ya/iva)t'* 'to reconsider', *podmen(ya/iva)t'* 'to substitute', *uzakon(ya/iva)t'* 'to legalize', *uskor(ya/iva)t'sya* 'to accelerate').

The authors found 62 pairs of verbs with different vowels *e, u, y*, as well as *a, o* without root alternation. These verbs always have the variant with the suffix *-a/ya-* as dominant. 25 pairs with alternating root vowels *o/a* tend to the suffix *-iva/yva-*.

Thus, the graphs with frequency dynamics compared to the morphological structure of the word show that alternating vowel (*o/a*) usually means the choice of the suffix *-iva/yva-*.

4. L-epeneticum

Some verbs have the inserted consonant L (before the suffix) in their forms. L-epeneticum is the sound [l] which appeared after the labial consonants before [j] in the Proto-Slavonic period. This happened according to the law of syllabic syngarmonism. Verbs with root L, such as *vkrapl(ya/iva)t'sya* 'to be embedded'; *vylepl(ya/iva)t'sya* 'to mold'; *zagotavl(ya/iva)t'* 'to keep'; *izgotavl(ya/iva)t'sya* 'to be produced', do not belong to this group.

L-epeneticum causes the transition to the suffix *-yva/iva-*. Paradigms without this phenomenon usually have variant *-a/ya-*. The results obtained in GBN demonstrate that in the 19th century and in the first half of the 20th century, the form *-a/ya-* is frequent, and the form *-iva/yva-* have low, even zero, frequency. However, at the end of the 20th century, the *-iva/yva-* form often prevails or becomes more frequent than the competing variant.

5. Prefix

To find out whether the frequency of verbs depends on a certain prefix, subgroups for each prefix were identified.

Different variants may prevail in homonymic verbs with different prefixes. Having analyzed the prefixes and having compared their presence with the "evolutionary" behavior of verbs, we came to some conclusions.

First, prefixes can influence the behavior of verbs and their competition.

Thus, verbs with the prefix *na-* always change the norm and assert the variant with *-iva/yva-*.

Verbs with the prefix *u-* and *s-* always have a suffixal shift *-iva/yva-* → *-a/ya-*: *srez(a/yva)t'* 'to cut off'; *suzh(a/iva)t'* 'to narrow', *umal(ya/iva-)* 'to diminish', *urez(a/yva-)-t'* 'to reduce', *uskor(ya/yva-)-t'sya* 'to accelerate' and their reflexive forms.

Verbs with the prefix *pri-* and *pod-* have a suffixal shift *-a/ya-* → *-iva/yva-* (*Pod-*: *podgotovlyat'sya* / *podgotavlivat'sya* 'to be prepared'; *podgotovlyat'* / *podgotavlivat'* 'to prepare'. *Pri-*: *prisposoblyat'* / *prosposablivat'* 'to adapt'; *prisposoblyat'sya* / *prisposablivat'sya* 'to get adapted').

Other verbs with the same roots but different prefixes do not show these tendencies, or the tendencies are weaker.

Second, the prefix of a verb correlates with its frequency.

The prefix *iz-* is highly productive in the verb system, and verbs with this prefix are almost always the most frequent. The verb pairs *izmeryat'* / *izmerivat'* 'to measure', *izgotavlivat'* / *izgotovlyat'* 'to make', *izgotovlyat'sya* / *izgotavlivat'sya* 'to be produced' in turn occupy the first, third and fifth places in the frequency ranking. In these three pairs, the variant with the suffix *-ya-* always dominates.

Verbs with the prefixes *pri-*, *s-*, *u-*, *pod-* are highly frequent and productive.

Verbs with the prefixes *vy-*, *i-*, *ras-*, *pere-*, *nad-* are less frequent, and are often at the end of the ranking.

6. Postfix

We analyze thirty pairs of verbs with the postfix *-sya*, i.e. one third of all the verb pairs studied. For example, *vylypl(ya/iva)t'sya* 'to hatch', *nadloml(ya/iva)t'sya* 'to break', *prostuzh(a/iva)t'sya* 'to catch cold', *rastravl(ya/iva)t'sya* 'to distress'.

Reflexivity does not affect the frequency of verbs and the result of the competition. Reflexive verbs have the same tendencies as their non-reflexive derivatives.

Conclusion

Having analyzed the graphs of word-form competition, we conclude that the choice of a particular suffix is influenced by a combination of linguistic factors such as stress + root vowel alternation, alternation of consonants at the junction of morphemes + phonosemantics. Combinations of these features determine the choice of suffix and possible semantic shades of redundant forms.

The prevalence of the verb in the language does not influence the outcome of the competition of variants with secondary imperfectives, but the chronological factor is also important. This is evidenced by the fact that in the 19th century variants with the suffix *-a/ya-* prevailed, the 20th century was characterized by the prevalence of forms with the suffix *-yva/iva-*, and the beginning of the 21st century in most cases saw a return to the *-a/ya-* form.

The semantic separation of competing variants, i.e. the appearance of different shades of meaning in two competing verbs, leads to the independent existence of two verb forms. Forms of the same paradigm with different combinability in frequency terms can behave independently of each other, as they cease to be competitors and actualize differential semes.

Thus, the obtained results demonstrate that such linguistic factors as root vowel, stress, sonant alternation, l-epentecum, and verb prefixes have a certain influence on the preference of one of the variants in the redundant verb paradigm with secondary imperfectivization. The reasons listed above are related to the convenience of pronunciation and euphony, which indicates a direct, though delayed in time, influence of oral speech on publicism and fiction, and, consequently, on the language system.

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DOI: 10.22363/2618-8163-2025-23-2-241-256

EDN: DTESPW

Научная статья

Динамика изменения глагольной парадигмы под влиянием вторичной имперфективации в русском языке

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Аннотация. Актуальность исследования определяется тем, что вариативность аспектуальных аффиксов в русском языке не полностью изучена, а благодаря появившимся сверхбольшим диахроническим корпусам текстов стало возможным детальное количественное описание процессов эволюции глагольных аффиксов. Цель исследования — выявление объективных синтагматических и парадигматических факторов (внутрислоговой сингармонизм, эволюция морфологического строения слова, лексическая сочетаемость, стиль), которые определяют выбор одного из конкурирующих суффиксов на примере вариативных глаголов избыточной парадигмы со вторичной имперфективацией *-а-(-я)/-ыва-(-ива-)*. В качестве материала исследования использован подкорпус русского языка корпуса Google Books Ngram, в т.ч. данные по частотности словоформ за последние 200 лет. Методы исследования: корпусный анализ и квантитативный анализ в диахроническом аспекте. Выявлены психофонетические, морфологические, семанти-

ческие и стилистические факторы, влияющие на языковые изменения избыточных глагольных парадигм. Сделан вывод: вопреки распространенному мнению, в большинстве случаев замещения прежнего варианта на *-а-/-я-* формой на *-ыва-/-ива-* не происходит, и, согласно частотной динамике, после временного роста популярности форм вторичных имперфективов в целом в последние десятилетия отмечается возврат к первичным формам несовершенного вида. В меньшинстве случаев, когда все же утверждается форма с суффиксом, некогда обозначавшим итеративность, на выбор формы повлияли корневая гласная, *l-epenteticum* и глагольные префиксы. Частотность и распространенность глагола, гипотетически препятствующие возникновению вариантов или унификации, не оказали влияния на языковые изменения. Развитый подход может быть применим к изучению эволюции конкурирующих словоформ в широком диапазоне случаев.

Ключевые слова: морфология, глагол, вторичный имперфектив, видовые пары, парадигма, частотность, языковая норма, лексическая сочетаемость.

Вклад авторов: Габдреева Н.В. — сбор материала, концепция и руководство исследованием, верификация данных, написание текста; Агеева А.В. — сбор материала, анализ и обработка данных, осуществление и дизайн исследования.

Финансирование. Исследование выполнено за счет средств субсидии, выделенной в рамках государственной поддержки Казанского (Приволжского) федерального университета в целях повышения его конкурентоспособности среди ведущих мировых научно-образовательных центров «Приоритет – 2030».

Конфликт интересов. Авторы заявляют об отсутствии конфликта интересов.

История статьи: поступила в редакцию 12.09.2024; принята к печати 28.12.2024.

Для цитирования: Галеев Т.И., Бочкарев В.В., Соловьев В.Д. Динамика изменения глагольной парадигмы под влиянием вторичной имперфективации в русском языке // Русистика. 2025. Т. 23. № 2. С. 241–256. <http://doi.org/10.22363/2618-8163-2025-23-2-241-256>