Morphological Exaptation in Russian: A Corpus Study of Suffix Variation in Loan Verbs

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1. Introduction

In recent years, there appeared a number of corpus works on morphological variation in Russian verbal suffixes, see:

- Nesset 2010, Nesset & Janda 2010 on variation in verbal suffixes *–a-/-aj-*;
- Makarova & Janda 2009, Kuznetsova & Makarova 2012, Nordrum 2020 on variation in verbal suffixes*–nu-/-anu-*.

Suffix variation in loan verbs has not received considerable attention in literature. Some relevant cases, such as the use of suffixes *-ova-/-irova-*, are analyzed within research on biaspectual verbs (Horiguchi 2018).

In modern Russian a loan verb can be introduced by a handful of suffixes: *-ova-*, *-eva-*, *-irova-*, *-stvova-*, *-nu-*, *-anu-*, *-i-*, *-a-*, *-ničа-*, *-e-*.

2. Allogenous exaptation

The functioning of suffixes in Slavic loan verbs is related to the theoretical concept of *exaptation*.

***Exaptation* in evolutionary biology.** The term *exaptation* is adopted from evolutionary biology, where it denotes a process by which some character with a specific use is co-opted for another use that has no (predictable) relation to the former; an oft-cited example is that of feathers, whose first function was thermo-isolation. Their use for flying constitutes an instance of exaptation (Van de Velde & Norde 2016: 3-4, Birzer 2020).

***Exaptation* in historical linguistics.** Into historical linguistics the term was introduced by Lass (1990; first version 1988), who proposed it for denoting a process in which (junk) morphological material "instead of being relegated [is] used for something else, perhaps just as systematic" as its former function (Lass 1990: 82). According to later broader definitions, exaptation is "the leap-like co-optation of a trait for a new function that is not immediately related to its former function" (Van de Veld & Norde 2016: 10). The scope of exaptation is limited to changes within one and the same language (Vincent 1995).

Allogenous exaptation, introduced by Gardani (2016), covers cases which cross the boundaries of a single language. It is a kind of language change that involves functional shifts of a grammatical loan element, which is stable on the grammaticalization cline; the shifts are not

motivated on a cognitive or semantic basis (lack of functional commonality) (Gardani 2016: 253).

E.g. the exploitation of verbal suffixes from a source language as a marker of loan verbs in the target language, demonstrated by the South Slavic suffixes *–ira-* and *–isa-*:

–ira-: represents the pathway "infinitive > loan verb marker / verbalizer" (cf. Gardani 2016: 232-237)
–isa-: represents the pathway "perfective marker > loan verb marker" (cf. Gardani 2016: 241-244).

The usage of the Greek sigmatic perfective stem marker *–is-* as a suffix specialized for the morphological integration of loan verbs in some South Slavonic languages, such as Serbian *intervju-is-a-ti* 'interview':

- is not motivated by its function in the source language Greek;
- does not change the degree of grammaticalization of South Slavic derivational suffixes in general.

3. Data and research questions

Data: We analyze the distribution of the Russian suffixes *-ova-*, *-eva-*, *-stvova-*, *-irova-*, *-nu-*, and *-anu-* in two resources:

- a database of all verbs featuring these suffixes that have an ipm > 4 in Lyashevskaya & Sharov (2009; http://dict.ruslang.ru/freq.php, based on the frequencies from the Russian National Corpus (RNC), which comprises **2,049 verbs**,
- the Russian web corpus RuTenTen11 (2011, https://www.sketchengine.eu/rutenten-russian-corpus/).

The suffixes *-eva-*, *-stvova-*, *-irova-* are often treated as allomorphs of *-ova-*, whereas *-anu-* is considered as an allomorph of *-nu-* (Townsend 1968; Švedova et al. 1980; Lopatin & Uluxanov 2016)

***Disclaimer:** The complete database that we have collected in addition contains the suffixes *-i-*, *-a-*, *-ničа-*, *-e-* and comprises 5037 verbs. We leave these four suffixes for further research as all of them are extremely frequent with original Slavic stems and are less productive with loan verbs, except for *-i-* which is discussed in (7).

Research questions (RQ):

1. How are these suffixes distributed among loan and original Slavic verbs? More specifically:
    - How are loan verbs with these suffixes integrated into the system of Russian verbal word-formation? What kind of verbal derivational patterns are possible with these stems?

- Do the allomorphs behave similarly in terms of compatibility with loan verbs and derivational patterns?

2. How do these Russian data contribute to research on exaptation?

Our claim: The Russian verbal suffix *-irova-* and *-nu-* show similar pathways to the ones identified by Gardani (2016), but the case of *-nu-* goes beyond allogenous exaptation as *-nu-* is an original Russian suffix.

4. Data overview

The distribution of the suffixes *-ova-*, *-eva-*, *-stvova-*, *-nu-*, and *-anu-* is provided in Table 1 and Figure 1 below.

Russian aspectual system. In Modern Russian each verbal lexeme is represented by so-called aspectual partners featuring imperfective vs. perfective aspect; one of the partners is derived from the other via prefixation or suffixation.

Tool	Imperfective	Perfective
Prefixation	del-a-t' 'do'	s-del-a-t' 'do'
Suffixation	pere-pis-yva-t' 'rewrite'	pere-pis-a-t' 'rewrite'

Biaspectuality among loan verbs. In Russian verbs in general, biaspectuality is a rare exception to the rule. Yet, of the 643 verbal items in *–irova-* constituting the "older" layer of loan verbs, only 182 items form 91 aspectual pairs; the remaining 461 verb lexemes are biaspectual. The 91 pairs are rather recent loans from the 20th century, often pertaining to technical issues:

e.g. *skanirovat'* 'scan.IPF' and *ot-skanirovat'* 'scan.PF'

The most recent loan verbs in *–nu-*, however, come in aspectual pairs, e.g. *lajk-nu-t'* 'like-once.PFV' and *lajk-a-t'* 'like.IPF'. Recent loan verbs with the suffix *–nu-*, which bears semelfactive meaning, are automatically attributed perfective aspect.

	Loan	Slavic	Total
-ova-	200	295	495
-eva-	9	64	73
-stvova-	0	74	74
-irova-	640	3	643
-nu-	5	740	745
-anu-	2	17	19
Total	856	1,193	2,049

Table 1. Distribution of the suffixes across loan and Slavic verbs in our RNC database.

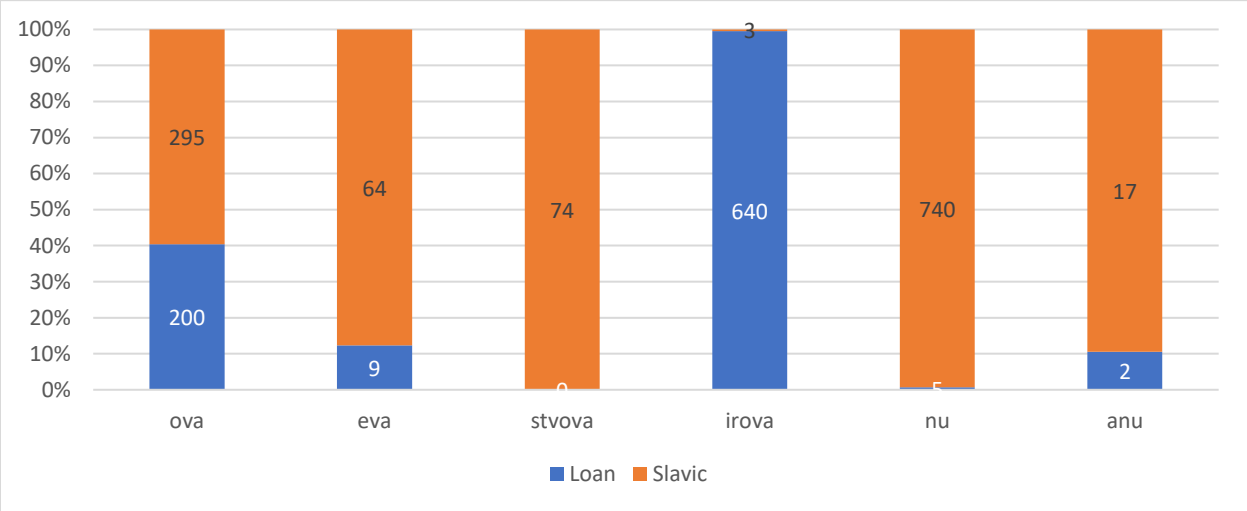

Figure 1. The distribution of the suffixes across loan and Slavic verbs in our RNC database.

5. The suffixes' derivational path

Formula	ova	eva	stvova	irova	nu	anu
S	20	30	0	0	30	0
1S	126	12	59	3	217	14
2S	118	21	15	0	364	2
3S+	22	1	0	0	129	1
L	101	3	0	392	0	0
1L	88	3	0	230	1	2
2L	17	3	0	16	4	0
3L	3	0	0	2	0	0
Total	495	73	74	643	745	19

Table 2. The derivational path of the suffixes *-ova-*, *-eva-*, *-stvova-*, *-nu-* and *-anu-* in RNC.

S A Slavic verb that is a base lexeme for other derivations,
e.g. *cel-ova-t'*.IPF (S) 'kiss.IPF'

1S A verb derived from a Slavic verb via one derivational chain,
e.g. *cel-ova-t'*.IPF (S) 'kiss.IPF' > *po-cel-ova-t'*.PF (1S) 'kiss.PF'

2S A verb derived from a Slavic verb via two derivational chains,
e.g. *cel-ova-t'*.IPF (S) 'kiss.IPF' > *cel-ova-t'-sja*.IPF (1S) 'kiss one another.IPF'
> *po-cel-ova-t'*. *-sja*.PF (2S) 'kiss one another.PF'

3S+ A verb derived from a Slavic verb via three (or more) derivational chains,
e.g. po-so-čuvstv-ova-t' 'commiserate.PF'
sovet.N (base) 'advice' > *sovet-ova-t'*.IPF (1S) 'advise.IPF'
> *sovet-ova-t-'sja*.IPF (2S) 'consult.IPF' > *po-sovet-ova-t'-sja*.PF (3S) 'consult.PF'

L A loan verb that is a base lexeme for other derivations,
e.g. interes-ova-t' (L)

1L A verb derived from a loan verb via one derivational chain,
e.g. e.g. *interes* 'interest.N' (L) > *interes-ova-t'* 'insterest.IPF' (1L)

2L A verb derived from a loan verb via two derivational chains,
e.g. *interes* 'interest.N' (L) > *interes-ova-t'* 'insterest.IPF' (1L)
> *interes-ova-t'-sja* (2L) 'be interested in.IPF'

3L A verb derived from a loan verb via three derivational chains,
e.g. *interes* 'interest.N' (L) > *interes-ova-t'* 'insterest.IPF' (1L) >
interes-ova-t'-sja (2L) 'be interested in.IPF' > *za-interes-ova-t'-sja* (3L)
'get interested in.PF'

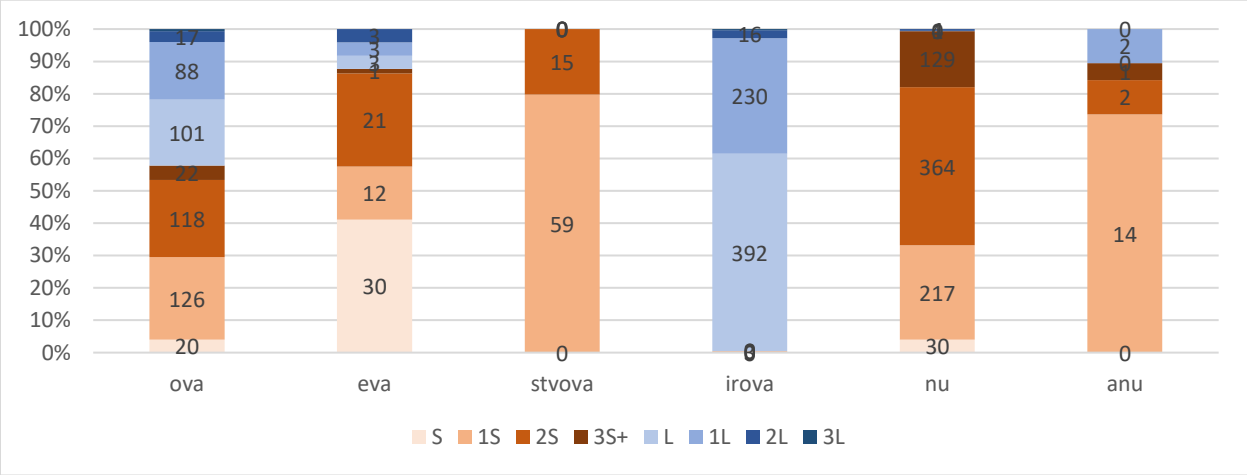

Figure 2. The derivational path of the suffixes *-ova-*, *-eva-*, *-stvova-*, *-nu-* and *-anu-* in RNC.

RQ1.1. How are loan verbs with these suffixes integrated into the system of Russian verbal word-formation? What kind of verbal derivational patterns are possible with these stems?

- *-irova-*: is a purely loan verb marker. Rare exceptions: *bron-irova-t'* 'book.IPF', *za-bron-irova-t'* 'book.PF'; *s-klad-irova-t'* 'put into storage; stock.IPF'
- *-ova-*: is widely used with both loan and Slavic stems, shows a more even distribution of different patterns
- *-stvova-*: is used only with Slavic stems; the base normally represents a noun or an adjective: *bed-stvova-t'* 'live in poverty.IPF' < *bed-a* 'misfortune.N'

Whereas the suffix *-ova-* goes back to Old Church Slavonic, the suffix *-irova-* is a newer borrowing formed under the influence of German verbs in *-ieren* (e.g. Rus. *basirovat'* < Ger. *basieren* 'base').

RQ1.2. Do the allomorphs behave similarly in terms of compatibility with loan verbs and derivational patterns?

- *-nu-* vs. *-anu-*: while *-nu-* is compatible with longer derivational paths (1S, 2S, 3S), *-anu-* tends to be the end of path (1S). In this sense, *-anu-* shows an independent behavior and can be regarded a separate suffix.

6. Exaptation and the Russian data

RQ2. How do these Russian data contribute to the research on exaptation?

We propose to interpret the use of *-irova-* and *-nu-* with loan verbs as instances of exaptation following the pathways proposed by Gardani:

- Just like South Slavic *–ira-*, Russian *-irova-* is an instance of allogenous exaptation following the pathway from infinitive > loan verb marker.
- Slavic *–nu-*, however, is not allogenous, but represents a shift from a semelfactive marker, often occurring in contexts with perfective reading, to a marker of perfective loan verbs. This gives reason to consider it a special case of the pathway "perfective marker > loan verb marker" and, consequently, to propose that the pathways identified by Gardani occur not only exclusively in allogenous exaptation.

Disclaimer: The RNC attestations show very few newer verbs that are used with *-nu-* and -anu-. We have therefore checked the distribution of the suffixes *-nu-/-anu-* across loan and Slavic verbs in RuTenTen, see Table 3 and Figure 3. Overall, RuTenTen contains 994 verbs with *-nu-* and *-anu-*, 21 of which are typos.

	RNC (115,642,044 tokens)		RuTenTen (18,280,486,876 tokens)	
	Loan	Slavic	Loan	Slavic
nu	5	740	37	851
anu	2	17	27	58
Total	7	757	64	909

Table 3. Distribution of the suffixes *-nu-* and *-anu-* across loan and Slavic verbs in RuTenTen vs. RNC.

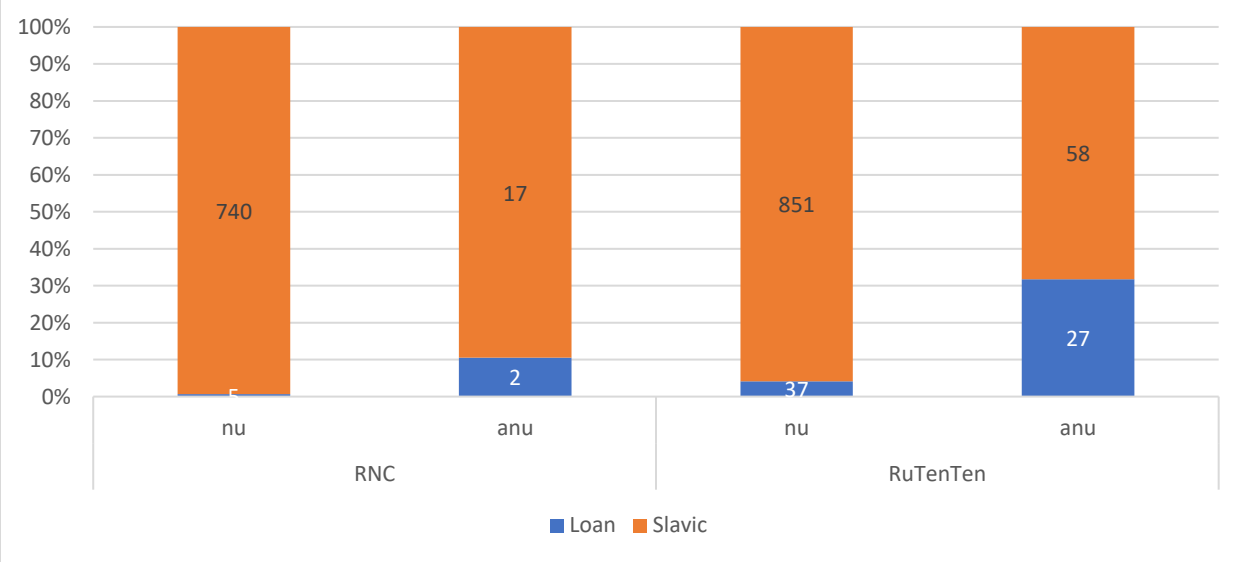

Figure 3. Distribution of the suffixes *-nu-/-anu-* across loan and Slavic verbs in RuTenTen vs. RNC.

RuTenTen contains more new loan verbs than the RNC, many of which belong to youth slang and gaming:

Suffix	Verb	Gloss	# of attestations	ipm
-nu-	*xak-nu-t'*	'hack.PF'	652	0.036
-nu-	*tvit-nu-t'*	'message someone on Twitter.IPF'	766	0.042
-nu-	*ap-nu-t'*	'upgrade.PF'	366	0.020
-anu-	*press-anu-t'*	'put pressure on someone.PF'	214	0.012
-anu-	*kaif-anu-t'*	'get a buzz.PF'	202	0.011
-anu-	*chip-anu-t'*	'perform chip tuning.PF'	184	0.010

Table 4. Examples of the loan verbs with *-nu-* and *-anu-* in RuTenTen.

Note that although our RNC database selected only verbs that have an ipm > 4, most of new loan verbs with lower frequency, like the ones presented in Table 4, are not attested in RNC (see Table 5 below). This means that newer borrowings with the relevant suffixes should be checked in RuTenTen.

Suffix	Verb	Gloss	# of attestations RuTenTen	ipm RuTenTen	# of attestations dictionary	ipm dictionary	# of attestations RNC 2010	ipm RNC 2010
-nu-	*xak-nu-t'*	'hack.PF'	652	0.036	N/A	N/A	3	0.019
-nu-	*tvit-nu-t'*	'message someone on Twitter.IPF'	766	0.042	N/A	N/A	0	0
-nu-	*ap-nu-t'*	'upgrade.PF'	366	0.020	N/A	N/A	0	0
-anu-	*press-anu-t'*	'put pressure on someone.PF'	214	0.012	N/A	N/A	1	0,006
-anu-	*kaif-anu-t'*	'get a buzz.PF'	202	0.011	N/A	N/A	1	0,006
-anu-	*chip-anu-t'*	'perform chip tuning.PF'	184	0.010	N/A	N/A	0	0

Table 5. A comparison of the loan verbs with *-nu-* and *-anu-* from Table 4 in RuTenTen vs. RNC. The RNC search has been performed in the 2010 version (161,933,607 tokens), the closest available version to the one used by Lyashevskaya and Sharov (2009).

7. Further applications

Our data shows that the usage of *-nu-* and *-i-* with loan verb bases seems to be an innovation. In our dictionary database we find only 5 instances of *-nu-* with a loan verb base and only few such instances for *-i-*, whereas such attestations are available in RuTenTen11. Furthermore, we

observe a rising productivity of verbs in *-i-* that coexist with earlier borrowings in *-irova-* (*modelirovat'* and *modelit'* 'model').

Future research on further new tendencies

The suffix *-i-* currently seems to be one of the most productive suffixes (cf. the use of *-i-* with nominal motivating bases: Rus. *frend-i-t'* 'befriend' < Eng. *friend*).

The online resource Wordonline.ru (https://wordsonline.ru/samples/new.html) has presented 60 most common new verbs used by the younger generation:

Suffix	# of verbs	Example	Gloss
-i-	47	*ban-i-t'*	'ban on social media.IPF'
-ova-	6	*zip-ova-t'*	'archive data.IPF'
-irova-	3	*relaks-irova-t'*	'relax.IPF'
-a-	2	*juz-a-t'*	'use.IPF'
-nu-	1	*lojs-nu-t'*	'give a like on social media.IPF' (like > lajk > laic)
-eva-	1	*linč-eva-t'*	'lynch.IPF'

Table 6. 60 most common new verbs according to the online resource Wordonline.ru.

The suffix *-i-* as in *frend-i-t'* 'befriend' can even affect earlier borrowings, see Table 7.

Verb	Gloss	Suffix	# of attestations	ipm
model-irova-t'	'model'	*-ova-*	57,361	3.14
model-i-t'	'model'	*-i-*	339	0.02

Table 7. The distribution of the verbs 'model' in *RuTenTen.*

The next step will be to analyze the overall productivity of the suffixes in different time periods.

References

Birzer, S. (2020). Exaptation. In: *Encyclopedia of Slavic Languages and Linguistics Online*, Editor-in-Chief Marc L. Greenberg. http://dx.doi.org/10.1163/2589-6229_ESLO_COM_032164

Gardani, F. (2016). Allogenous exaptation. In Muriel Norde & Freek Van de Velde (eds.), *Exaptation and language change*, 227–260. Amsterdam & Philadelphia: John Benjamins.

Horiguchi, D. (2018). Imperfectivation of borrowed verbs in Russian. *Russian Linguistics* 42, 345–356.

Kuznetsova, J. and A. Makarova. (2012). Distribution of two semelfactives in Russian: *-nu-* and *-anu-*. In A. Grønn & A. Pazelskaya (eds.), *The Russian Verb, Oslo Studies in Language* 4(1), 2012, 155–176.

Lass, R. (1988). How to do things with junk: Exaptation in language evolution, *Stellenbosch Papers in Linguistics* 17, 33-62.

Lass, R. (1990). How to do things with junk: Exaptation in language evolution, *Journal of Linguistics* 26, 79-102.

Lopatin, V. V. and I. S. Uluxanov. (2016). *Slovar' slovoobrazovatel'nyx affiksov sovremennogo russkogo jazyka*. Moscow: Azbukovnik.

Lyashevskaya O. N. and S. A. Sharov. (2009). The New Frequency Dictionary of Russian Vocabulary (Based on the Materials of the Russian National Corpus). Moscow: Azbukovnik.

Nesset, T. and L. A. Janda. (2010). Paradigm structure: Evidence from Russian suffix shift. *Cognitive Linguistics* 21(4), 699-725.

Nordrum, M. (2020). Together and apart. Perfective verbs with a prefix and the semelfactive suffix -nu- in Contemporary Standard Russian. PhD Dissertation, UiT, Tromsø, Norway.

Makarova, A. and L. A. Janda. (2009). Do it once a case study of the Russian -nu- semelfactives. *Scando-Slavica* 55, 78 - 99.

Švedova, Natalia Ju. et al., eds. (1980). *Russkaja grammatika*, vol. I. Moscow: Akademija nauk SSSR.

Townsend, C. E. (1968). *Russian Word-Formation*. New York: McGraw-Hill.

Van de Velde, F. and M. Norde. (2016). Exaptation: Taking stock of a controversial notion in linguistics. In: Norde, Muriel and Van de Velde, Freek (eds.) *Exaptation and Language Change*. Amsterdam and Philadelphia, 1-36.

Vincent, Ni. (1995). Exaptation and Grammaticalization. In: *Historical Linguistics 1993: Selected papers from the 11th International Conference on Historical Linguistics, Los Angeles, 16–20 August 1993* ed. by Henning Andersen (= *Current Issues in Linguistic Theory*, 124), 433– 445. Amsterdam & Philadelphia: John Benjamins. doi: 10.1075/cilt.124.34vin