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## Loanword adaptation parameters in contact: The case of -ING Anglicisms in Russian

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**Abstract:** This study focuses on a corpus-based description of the process of linguistic adaptation of nominal English loanwords in Russian containing the deverbal suffix -ING, transliterated into Russian as *инг* /ing/. 89 loanword items were analyzed in terms of their linguistic characteristics, such as morphological structure and frequency of occurrence in the corpus. The study discusses the complex nature of the lexical items that are transferred from one language into another through ongoing language contact. The corpus-based analysis included such procedures as the search for any relevant items within a given time frame in a selected corpus, the identification and assigning of language-related characteristics to the items elicited from the corpus, and the statistical procedure that aimed to determine and describe the relationships that exist, or are likely to exist, between different types of characteristics of the loanwords.

**Keywords:** Anglicisms, Russian, corpus, loanword adaptation, linguistic parameters

### 1. Introduction

The Russian National Corpus (*Natsional'nyy korpus russkogo yazyka*), henceforth referred to as the RNC, was used as the main source of data for this study. This corpus, abundant in examples of real-life usage of the lexical stock of the Russian language, comprises a number of subcorpora. The current study only considered (1) the main subcorpus, which contains approximately 289 million words; (2) the newspaper subcorpus, which includes some 227 million words; and (3) the spoken subcorpus, nearing 12 million words. Importantly, the aforementioned statistics are provided only as of 2021, which is the year when the searches were conducted. The RNC has since been updated in terms of its content.

The specific time frame that was considered is from 2015 to 2020, representing an update of the body of knowledge on the state of Anglicisms in Russian. Although certain subcorpora of any corpus may not be entirely or equally up-to-date, preliminary corpus searches in the

RNC revealed a significant number of items with which to work across the subcorpora. The lexical material identified through the preliminary and all subsequent searches differed on an item-by-item basis, which was still useful in constructing a large and diverse database for further analyses. Some of the lexical material was overlapping, with identical or similar items occurring within and across a number of subcorpora of the given corpus. Such a frequent occurrence was still useful in providing more information about the peculiarities of the linguistic behavior of loanword items in the language.

The present study aimed to identify and assign the linguistic characteristics to the loanword material after conducting the first series of searches for any relevant items in the RNC within the above-mentioned time frame. The description and categorization of each identified loanword item relied on a number of systemic parameters: frequential (based on their absolute frequency of occurrence in the RNC) and productivity-based (associated with their capacity for derivational adaptation). Thus, each item in the constructed database had a certain frequency value and a productivity value based on the presence or absence of derivational properties.

Subsequently, a twofold statistical procedure was performed using this database to see how different characteristics of the loanwords correlated with each other. Specifically, the first statistical test focused on the connection between each independent parameter of the loanwords with their frequency of occurrence. In other words, each separate parameter underwent a correlation analysis to establish any significance of its interaction with the frequency characteristic. In this case, frequency was considered as more of an extralinguistic and quantitative property, while productivity was delineated as purely linguistic or language-related parameter. The subsequent statistical analysis, linear regression, determined whether or not the independent linguistic parameter was likely to predict or influence the frequency of occurrence of the loans.

Thus, the main purpose of the current study was to determine and discuss the main peculiarities of linguistic adaptation of the -ING Anglicisms in Russian, with a view of explaining whether and how the loans' morphosemantic characteristics are connected with their frequency of occurrence in this recipient language. In this study, the term "morphosemantic" is used to refer to the aforementioned parameter of productivity.

The main objectives of the current study were as follows:

- (1) To determine the characteristics of linguistic integration of -ING Anglicisms into Russian, by means of a comprehensive review of the literature; and
- (2) To develop and implement an approach to the statistical analysis of corpus-elicited data on the -ING loans for the period of 2015-2020.

The first objective was addressed by means of a comprehensive discussion of the linguistic nature and behavior of Anglicisms in Russian. Various approaches to defining the notion "Anglicism" were discussed, relying on the existing body of knowledge on English loanwords in Russian represented by the works of American, Russian, Soviet, and international scholars in the fields of Russian-English language contact, bilingualism, and loanword studies. As per the second objective, data were elicited from the RNC using a strict set of procedures that focus on the identification of the respective characteristics of the loanword

material. This step involved a detailed discussion of the parameters and the reasons for which they were selected, the application of the parameters in the process of elicitation of the data from the subcorpora, and the preparation of the database for a subsequent two-step quantitative analysis.

The current study aimed to provide a comprehensive answer to the following two-part research question:

RQ1. *Is there a statistically significant correlation between the parameter of frequency of occurrence of the -ING Anglicisms and their productivity-based characteristic? If yes, to what extent can the parameter of frequency be predicted by the parameter of productivity?*

This research question was addressed by means of conducting two distinct statistical procedures, correlation and linear regression. An initial database was developed based on the corpus searches, including the inherent frequency characteristic of each item. This database was further modified in terms of the application of the parameter-driven approach.

Notably, the current study focused only on analyzing the productivity-frequency relationship. In a pilot study (Akishev 2023), the quantitative analyses into the parameters of structure and meaning did not provide any statistically significant results in relation to the parameter of frequency, but they were still important in (1) describing the linguistic nature of the Anglicisms, (2) discussing the distribution of different morphological and semantic types of the Anglicisms in terms of their frequency in the corpus, and (3) analyzing the relationships between the morphosemantic nature of the loanwords and their capacity for derivational productivity.

In the pilot study, the analyses of the parameter of structure did not yield any statistical significance, but the construction of the working database still revealed a number of interesting patterns (Akishev 2023: 42). The majority of the -ING loans in the corpus for the given period were of the simple, monolexemic structural type. It was also found that the simple-type loans have a higher frequency of occurrence in the corpus. The morphological nature of these cross-linguistic constructions is essential to any discussion of the regular patterns of their integration into the recipient language. However, a number of irregularities in the structural nature of some of the Anglicisms were identified. For example, the Anglicism *bukkrossing* ‘bookcrossing’ comes from the bilexemic compound ‘Book’ + ‘Crossing’ in which the first letter of each lexeme is capitalized, likely due to the fact that this compound originated in English from the name of a brand and a website that were subsequently popularized. In Russian, however, this capitalization was not preserved when the word was borrowed and adapted. Another interesting example is the Anglicism *smoking*, which comes from the nominal construction ‘smoking jacket.’ In the process of adaptation into Russian, the second part of this construction, ‘jacket,’ was omitted, perhaps for the purpose of simplification – shortening the loanword to make it more easily adapted and widely used, or in order to make this loan structurally resemble many other loans ending in -ING that do not usually have another lexeme attached after the main -ING lexeme. Finally, the construction *kaming-aut* ‘coming-out’ is another interesting example. In this example, the second part of the loan is preserved, although it is not a second lexeme, as in ‘smoking jacket.’ The second part ‘out’ in ‘coming-out’ is a particle that is connected in a phraseological manner to the

-ING lexeme, which is why the omission of the second part of the loan would be detrimental to the preservation of the semantic integrity of this construction.

Pilot statistical analyses of the characteristics of the loans' meaning also provided no numerically significant results. However, the descriptive statistics analysis demonstrated that the majority of the -ING Anglicisms in the corpus pertain to the core semantic type (Akishev 2023: 44). This type of Anglicisms refers to notions that are already familiar to the language and culture, while the cultural type is used to denote unfamiliar and new concepts (Calude et al. 2020). A large number of the -ING loans of the cultural meaning type are related to sports: *snoubording* ('snowboarding'), *skeitbording* ('skateboarding'), *sapserfing* ('SUP surfing'), *veikbording* ('wakeboarding'), *kikboksing* ('kickboxing'), *kerling* ('curling'), *vindserfing* ('windsurfing'), *bouling* ('bowling'), *chirliding* ('cheerleading'), and *serfing* ('surfing'). These names entered Russian culture via -ING Anglicisms as absolutely new kinds of sports that previously did not exist for the Russian-speaking society. The remaining cultural loans are related to such semantic fields as technology, beauty, economics, and lifestyles.

The scrutiny of four parameters in the pilot study provided certain insights into the specificities of the adaptation of Anglicisms in Russian. Building on those findings, the current study focuses more narrowly on the productivity-frequency relationship. The main concepts that are presented above are discussed in detail in the following section, including, but not limited to, the notion "Anglicism," the integration of Anglicisms in Russian, and the parameters selected to describe the linguistic characteristics of the loanwords.

## 2. Previous research on Anglicisms in Russian

Attracting attention due to their popularity, role and functions, and complex cross-linguistic nature, Anglicisms have long been the subject of scrutiny in Russian linguistics. According to the most commonly used definition, an Anglicism is a word or phrase of English origin which is borrowed into another language. Dyakov (2012: 73) defined the notion "Anglicism" as a unit of a certain linguistic level that was transferred into Russian and underwent a certain alteration. While this definition emphasizes the processes of transference and transformation, it does not mention the role and functions or the contribution that Anglicisms make. On the other hand, these aspects were already discussed in detail by scholars like Benson (1959), who posited that the vast majority of Anglicisms are nouns. In certain cases, these nouns were transformed into adjectives by means of derivation on the basis of the rules of Russian morphology. Benson (1959: 257) singled out the following four groups of Anglicisms based on their degree of assimilation into Russian: Group 1 includes loanwords that have become an inherent part of active Russian vocabulary (e.g., *film*, *klub*); Group 2 includes mainly scientific terms which are not used commonly by all speakers (e.g., *biheviorizm*); Group 3 comprises loanwords which describe non-Russian cultural patterns (e.g., *kolledzh*, *mister*); and Group 4 includes obsolescent words that were borrowed but not subsequently picked up by speakers, thus losing in the competition with their native Russian counterparts (e.g., *breikwoter* – *volnolom*). An important aspect of Benson's approach was the emphasis on the inherent "nounness" of Anglicisms. Furthermore, he stressed the fact

that some Anglicisms can undergo certain morphological transformations on the basis of Russian morphology. However, the reasons for such changes and the process of borrowing as such were not discussed.

A more recent approach by Wójtowicz (1995) filled in those gaps through a comprehensive discussion of Anglicisms in Russian. The author also argued that the majority of these loanwords are nouns. As for the adaptational changes that they undergo, Anglicisms generally acquire the grammatical category of masculine gender in Russian (e.g., *klub*, *kolledzh*), which is an open-class system. They appear in Russian as a result of direct contact between the two languages, with no traces of interference from other languages. This perspective incorporates the previously discussed theoretical concepts underlying Anglicisms and develops them further, stressing that the main conduit of noun loans from English into Russian is direct and uninterrupted language contact.

More specific reasons for the borrowing, adaptation, and use of Anglicisms were provided by Styblo (2007: 64): (1) the loanword is characterized by novelty and positivity of its connotational parameters; (2) the original Russian word is outdated and has negative connotations; and (3) the loanword can be more suitable to express the speaker's purport. Unlike the previously discussed approaches, Styblo's point of view emphasized the semantic aspects of the phenomenon under study. This perspective would be useful in expanding other approaches, such as, for example, Dyakov's (2012) previously discussed definition of the notion "Anglicism." However, while Styblo's approach focuses on the semantics of Anglicisms, it still omits the pragmatic aspects, especially the speaker's attitudes and identities involved in the process of adaptation and use of Anglicisms.

Traditionally, scholarly interest has centered on the grammatical properties that Anglicisms acquire upon integration into Russian (Aristova 1978; Vorobyova 2009), along with their semantic and stylistic characteristics and the pragmatic functions that they perform. More recent research has examined the role of Anglicisms in shaping discourse (Privalova et al. 2024), their linguistic features in contemporary slang (Lacková 2021), their contribution to youth culture (Eshenkova 2023), and their functions in diaspora dialects of Russian (Makarova 2022).

What has not gained enough attention in the research are the peculiarities of relationships across different linguistic features of the loans. One such feature, whose relation to the other characteristics of Anglicisms deserves more attention, is morphological productivity. This phenomenon can be defined as the capacity to develop into more linguistically complex structures based on the principle of morphological derivation (Booij 2010: 8).

As evidenced by the richness and flexibility of Russian word formation, the -ING Anglicisms often tend to transform into more complex linguistic structures. Apart from assimilation into Russian as full-fledged nouns (Vorobyova 2009: 183), these loans can also be morphologically transformed into verbs. Dyakov (2001: 161) argues that their transformation into verbal constructions is based on the morphological process of suffixational derivation characteristic of solely the Russian language. Discussing the morpheme -ING which is transferred together with the noun loans ending in it, Dyakov concludes that -ING is a productive morpheme, which is evidenced by its ability to construct new Russian words based on linguistic creativity and pertaining to the spoken vocabulary (2001: 201): for example,

*shippingovat* 'to support a romantic relationship between two or more fictional characters or real-life people.' It can be deduced from Dyakov's standpoint that the adaptation of Anglicisms in Russian is a multifaceted phenomenon, as well as a process that may involve multiple linguistic mechanisms pertaining to the levels of phonology, morphology, syntax, semantics, and pragmatics.

Prokutina (2012: 8) argues that Anglicisms and their morphological characteristics are primarily influenced by the Russian derivational system. She also claims that the main criterion of adaptedness of Anglicisms is their ability to interact with original word formation means of Russian. According to the author, -OVAT' is one of the most productive suffix constructions used in the process of derivation of verbs from noun loans. Importantly, the current study also regards this suffix construction as one of a number of Russian suffixes that may interact with the -ING loans, not the only suffix to be able to do so. The main focus, however, is on the morphological transformation of the loans from nouns into verbs. The analysis of the peculiarities of such transformations serves as a foundation for the discussion of the derivation-based productivity of the loans as one of a number of their linguistic parameters.

Previous corpus-based studies have also informed the approach and the choice of parameters of adaptation of the loanwords. These works were selected due to their foci on different aspects of loanword adaptation; namely morphology, semantics, and quantitative characteristics. The approach to the quantitative features of the Anglicisms that was implemented in this study is corpus-based. It was informed by the methodological framework developed by Vardøy & Post (2013), who conducted a corpus-based analysis of -ING loanwords in Russian dated between 2000 and 2011 in the newspaper subcorpus of the RNC. Based on data from the corpus, the authors compiled a list of -ING Anglicisms and their frequency of occurrence, and commented on the loanwords' popularity over time. Very interesting is the authors' decision to restrict the compilation of their database to the newspaper part of the RNC, which they considered to be the most representative of the Russian language in action. The current study will include two more parts of the RNC in the analysis. Furthermore, Vardøy and Post focused primarily on the semantics of these loanwords, which, as they said, is an under-researched area in loanword studies. This study replicates some aspects of these authors' research and updates it for the specific period of 2015-2020. In addition, apart from considering both semantic and quantitative characteristics of these loans, due attention will also be paid to the aspects of their morphological adaptation and productivity in the recipient language, which is why the present study is also an extension of Vardøy & Post's approach.

The parameters of productivity and frequency of occurrence will play a pivotal role in the course of the statistical analyses aimed at providing a comprehensive answer to the research question. Every item drawn from the RNC for the period stated will possess a certain value according to this parameter. A dichotomous approach is of great importance to the analysis of the loans' characteristics. Thus, the parameter of productivity will be analyzed using a binary system (productive vs. non-productive). Each -ING loanword item drawn from the RNC will possess this characteristic in addition to the frequency of its occurrence in the corpus.

### 3. Research design

#### 3.1. Corpus elicitation approach

The database will be compiled by means of eliciting data from the RNC from 2015 to 2020. Searches for words ending in -ING will be performed in its three different subcorpora, with each of the searches modified similarly in order to obtain data which are as much as possible representative of the actual situation in respect of loanword adaptation in Russian. Data will be drawn from three distinct subcorpora: main (289 million words), newspaper (227 million words), and spoken (12 million words). The decision to choose these three different subcorpora, as opposed to working simply with one of them, as Vardøy and Post (2013) did with the newspaper subcorpus, is based on the fact that they present examples from three different dimensions of language use, which definitely increases the amount of data a researcher can work with and can provide them with more diverse, relevant, and novel language material.

The RNC is up to date, with over 600 million instances of use of the Russian language in multifarious contexts. Regular updates incorporate more language material into multiple subcorpora. According to the website, the RNC's main purpose is to serve as a useful tool for anyone interested in Russian (such as professional linguists, language teachers, and language learners). Two versions of the RNC are currently available: the old and the new. The new version is set to replace the old one because it is more technologically advanced, with a number of search mechanisms improved. The new version has a more user-friendly interface and a more straightforward search system, which is why it was used for the purposes of this study.

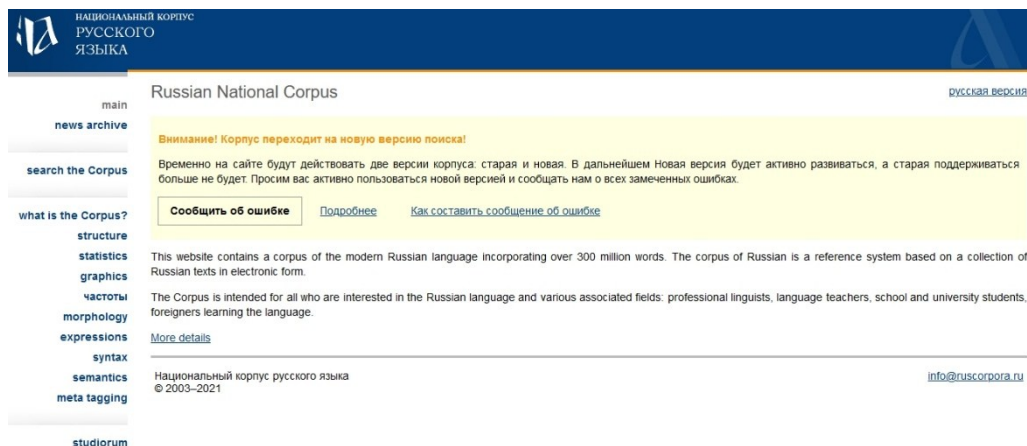


Figure 1: The website of the Russian National Corpus. *Natsional'nyy korpus russkogo yazyka* ©2021. (<https://ruscorp.ru/new/en/>) (Accessed 2021-04-07)

According to Lyashevskaya et al. (2003: 113), the Russian National Corpus (<https://ruscorpora.ru/en>) search system can be used in two formats: disambiguated and non-disambiguated. The non-disambiguated format allows units possessing the same orthographic structure to preserve their ambiguity independent of the context in which they occur. The disambiguated format does exactly the opposite. In the search system located on the website of the RNC, users can limit their searches either to the disambiguated or non-disambiguated corpus search parameter. The use of the non-disambiguated parameter results in a much larger number of items found in the RNC due to the fact that homonymous units acquire all possible sets of morphological characteristics (Lyashevskaya et al. 2003: 114). This study will use the non-disambiguated setting, so that the results will be richer. Furthermore, unlike Vardøy & Post (2013), capitalized words will not be deleted from the results. Although this action does indeed narrow the search by omitting proper names, it also eliminates a substantial number of clause-initial items, which may result in a misinterpretation of the actual situation with the number of loanwords.

### 3.2. Parameter-driven approach

The first parameter of the loans is frequency. It is different from the other parameter in that it is assigned automatically based on corpus-provided information, which is why this parameter is considered to be inherent to the data. The parameter of frequency will be based on the total number of examples that a given loanword has in each of the three subcorpora. The RNC provides a table at the bottom of the search results page which contains the list of items found and the total number of examples for those items across the sum total of search results for a given period of time. Based on results from all three subcorpora, a single database will be compiled, in which the items will be ordered and any irrelevant elements deleted. For the words that are present across the two or three parts of the RNC, the total number will be added up from the numbers determined in the correspondent parts. The words which do not overlap will be entered into the database in descending order of numeric magnitude. The final database will include the loans and their respective total numbers of occurrences not per each of the subcorpora, but for all of them combined.

The other parameter will be operationalized in terms of a specific approach to a multiaspectual description and statistical analysis of the corpus data, so it is referred to as a descriptive parameter. This specific parameter-driven approach is aimed at determining whether the inherent parameter, frequency, can be associated with or dependent on, the descriptive parameter.

The productivity parameter is based on the derivational capacity of the -ING loans to interact with the Russian verb-forming suffix -OVAT'. Based on this parameter, productive and non-productive Anglicisms will be identified. The productive type is characterized by the ability to undergo the process of derivation to form Russian verbs using Russian verb morphology (e.g., *shering* 'sharing' + *ovat* → *sheringovat* 'to perform sharing/to share'). The non-productive type of Anglicisms, on the other hand, does not possess such a capacity. To determine whether an -ING loan is productive or non-productive, a two-step procedure will be performed. First, corpus searches will be conducted for each item in



combination with the suffix -OVAT' to see if the RNC, as a most credible and up-to-date source of information on the Russian language in use, has any examples of such morphologically complex constructions. Secondly, searches will be conducted for the corresponding word-formation patterns on the basis of two dictionaries: Dyakov (2014) and Yegorova (2014).

### **3.3 Statistical procedures**

#### **3.3.1. Overview**

The research question will be answered by means of conducting Point-Biserial Correlation and Simple Linear Regression. The only numeric parameter of the -ING Anglicisms that is discussed in the current study, the parameter of frequency, will serve as the variable against which the other parameter will be analyzed. The purpose of testing against frequency is to see whether it may be associated in a certain way with the descriptive dichotomous parameter. For instance, the descriptive parameter, based on the results of the statistical tests to be conducted, may be significantly correlated with or even predict the frequency of occurrence of the -ING loans. Special attention in this study will be paid to the discussion of the productivity parameter. The total number of items that will be productive based on the database to be compiled using the RNC search results for the stated period will show the current situation with the productive capacity of the -ING Anglicisms.

#### **3.3.2. Point-Biserial Correlation analyses**

The procedure incorporates the correlation analysis. Importantly, this test does not distinguish between dependent or independent variables, as both variables are simply correlated. The question that the correlation analysis aims to answer is the following:

- (1) Is there a statistically significant relationship between the productivity parameter of -ING Anglicisms and the parameter of frequency?

#### **3.3.3. Simple Linear Regression analyses**

The statistical procedure focuses on linear regression. Importantly, frequency is a dependent variable, as the procedure is aimed at testing whether frequency can be affected or predicted by productivity. The question that the given statistical test is designed to answer is as follows:

- (1) To what extent can the parameter of frequency be predicted by the parameter of productivity?

## 4. Results and discussion

### 4.1. Corpus searches and database compilation

The searches were conducted in the three subcorpora for the period 2015-2020. The lexico-grammatical search option was used to look for any words that have an -ING (Russian инг) ending, using the \*инг mask, as the lexeme search option only allows to search for entire words. The first unspecified search in the main subcorpus resulted in a large number of items that had the ending -ING: 46,844 context-based instances in 14,029 documents. Subsequently, the search settings were introduced, such as a non-disambiguated search, both nonfiction and fiction texts, and the 2015-2020 time period. As a result of these modifications of the search settings, a user-generated subcorpus was created with a volume of 731 documents and 2,367,342 words. The second search was conducted for the -ING items in this user-generated subcorpus, which resulted in 484 context-based instances in 182 documents. All items were automatically assigned a certain frequency value by the system. The identified items along with their frequency values were placed in a rough-draft version of the database to be compiled upon gathering all the data from all three subcorpora.

The first undefined search for the -ING items in the newspaper subcorpus of the RNC resulted in 215,426 context-based instances in 107,330 documents. The newspaper subcorpus consists of two parts: *Media of the 2000s* and *The Corpus of regional and foreign press*. As the former is obviously outdated, the search for the Anglicisms was conducted in the latter. The search settings were then applied, which included a non-disambiguated search, nonfiction and fiction texts, creation date between 2015 and 2020, country (Russia), and language of origin (Russian). A user-generated subcorpus was subsequently developed with a volume of 1,085 documents and 567,354 words. The search for -ING items resulted in 329 contexts in 185 documents. Once again, the items elicited were entered into a preliminary database.

The first search in the spoken subcorpus provided 2,177 contexts in 586 documents. Following the implementation of the settings, such as non-disambiguated search and 2015-2020 creation date, the generated subcorpus included 143 documents with a total volume of 371,015 words. Finally, the search in this subcorpus resulted in 66 context-based uses in 30 documents. The items were subsequently copied into the above-mentioned database.

After conducting all the searches in the three subcorpora and obtaining the data, all irrelevant items were deleted. These items included non-Anglicisms (e.g., *viking* 'Viking'), Anglicisms whose roots include the same letters as the morpheme -ING (e.g., *king* 'king,' *ring* 'ring'), last names ending in -ING (e.g., *Kipling* 'Kipling,' *Rowling* 'Rowling,' *Turing* 'Turing,' etc.), and cross-linguistic multilexemic English-Russian blends (e.g., *vetromonitoring* 'wind monitoring'). The process of compounding of the -ING Anglicisms with Russian words to produce cross-linguistic blended or conjoined constructions is not relevant to this study. These constructions cannot be easily categorized. Cross-linguistic compounds are too complex morphologically and semantically to be analyzed in terms of the current approach that focuses on English-only monolexemic or bilexemic words. For example, the blended word *rosbizneskonsalting* incorporates three different lexemes:

(1) an original Russian contraction *ros-* of the adjective *rossiyskiy* ‘Russian’; (2) a non-ING nominal Anglicism *biznes* ‘business’ that is quite an old loanword; and (3) an -ING Anglicism *konsalting* ‘consulting.’

Subsequently, an initial unparametrized database was developed, in which each of 89 items on the final list of Anglicisms possessed a certain frequency value. The number of occurrences of any identical items that were identified in different subcorpora was added up to reflect the sum total of occurrences across the given corpus. The items were listed in a descending order based on the magnitude of their frequency values. An excerpt from this database including the first ten items on the list is given below (Table 1).

Table 1. Excerpt from the initial unparametrized Anglicism database

#	-ING Anglicism (including the original English words)	Frequency of occurrence in the RNC (total number of items encountered)
1.	<i>reiting</i> ‘rating’	180
2.	<i>miting</i> ‘meeting’	59
3.	<i>monitoring</i> ‘monitoring’	59
4.	<i>doping</i> ‘doping’	38
5.	<i>holding</i> ‘holding’	36
6.	<i>trening</i> ‘training’	30
7.	<i>marketing</i> ‘marketing’	26
8.	<i>kasting</i> ‘casting’	17
9.	<i>brifing</i> ‘briefing’	12
10.	<i>kemping</i> ‘camping’	12

#### 4.2. Productivity parameter analyses

The goals of the analyses in terms of the parameter of productivity are:

- (1) To categorize the items based on the productive/non-productive distinction, using RNC’s search system and the previously used two dictionaries of foreign words and Anglicisms;
- (2) To conduct a Point-Biserial Correlation with frequency as a continuous variable, and productivity as a dichotomous categorical variable;
- (3) To conduct a Simple Linear Regression with frequency as a continuous *dependent* variable, and productivity as a dichotomous categorical *predictor* variable; and
- (4) To interpret and summarize the results.

To categorize the items based on their capacity for derivation-based productivity, searches were conducted for every item on the list in the two dictionaries and the RNC in

combination with the verb-forming suffix -OVAT'. The items that were found to exist in the resources in terms of such a morphological construction were entered into the database as productive Anglicisms. The items that were not found to form verbs using that suffix were identified as non-productive Anglicisms. An excerpt from the working database is presented in Table 2. For productive Anglicisms, the resulting Russian verb is presented in this database along with the transliterated components from which it was derived, the -ING Anglicism itself and the suffix OVAT'.

Table 2. Excerpt from the working database for productivity parameter analyses

#	-ING Anglicism (including the original English words)	Frequency of occurrence in the RNC (total number of items encountered)	Derivation-based productivity (productive or non-productive), including the resulting verb and its transliterated structure
1.	<i>trening</i> 'training'	30	Non-Productive
2.	<i>marketing</i> 'marketing'	26	Non-Productive
3.	<i>kasting</i> 'casting'	17	Productive ( <i>kastingovat'</i> : <i>kasting</i> + <i>ovat'</i> )
4.	<i>brifing</i> 'briefing'	12	Productive ( <i>brifingovat'</i> : <i>brifing</i> + <i>ovat'</i> )
5.	<i>kemping</i> 'camping'	12	Productive ( <i>kempingovat'</i> : <i>kemping</i> + <i>ovat'</i> )
6.	<i>smoking</i> 'smoking jacket'	12	Non-Productive
7.	<i>kraudfanding</i> 'crowdfunding'	11	Non-Productive
8.	<i>bukkrossing</i> 'bookcrossing'	8	Non-Productive
9.	<i>lizing</i> 'leasing'	7	Non-Productive
10.	<i>pressing</i> 'pressing'	7	Productive ( <i>pressingovat'</i> : <i>pressing</i> + <i>ovat'</i> )

A cross-tabular analysis demonstrated the difference in numbers of items within each type of the loans' productiveness. Out of the total list of 89 Anglicisms, 64 items were found to be non-productive and the remaining 25 items were found to be productive. The statistical procedures which follow will elucidate the peculiarities of the relationships of each type of productiveness to the loans' frequency of occurrence in the given corpus.

In terms of the Point-Biserial Correlation test, the frequency variable was considered in relation to the productivity variable. The variances were also found to be unequal, but this fact did not affect the statistical procedure. As a result, a statistically significant correlation-based link was found between the loans' productivity and their frequency of occurrence,  $r = .36, p = .0001$ . The following table illustrates the specifics of this significant relationship.

Table 3. Point-Biserial Correlation results for the frequency-productivity relationship

Correlations			
		Productivity	Frequency_SQR
Productivity	Pearson Correlation	1	.362**
	Sig. (2-tailed)		.000
	N	89	89
Frequency_SQR	Pearson Correlation	.362**	1
	Sig. (2-tailed)	.000	
	N	89	89

\*\*The correlation was significant at the 0.01 level, two-tailed.

The following figure illustrates the positive significant trend observed in terms of the correlation of the parameters. The parameter of productivity is on the x-axis, with 0 signifying the non-productive type and 1 signifying the productive one. The box plot shows that there is a slightly higher frequency of occurrence for productive loans than for non-productive ones. This finding corroborates the assumption that the loans' adaptedness in the recipient language is to a certain extent dependent on their frequency of occurrence in the corpus.

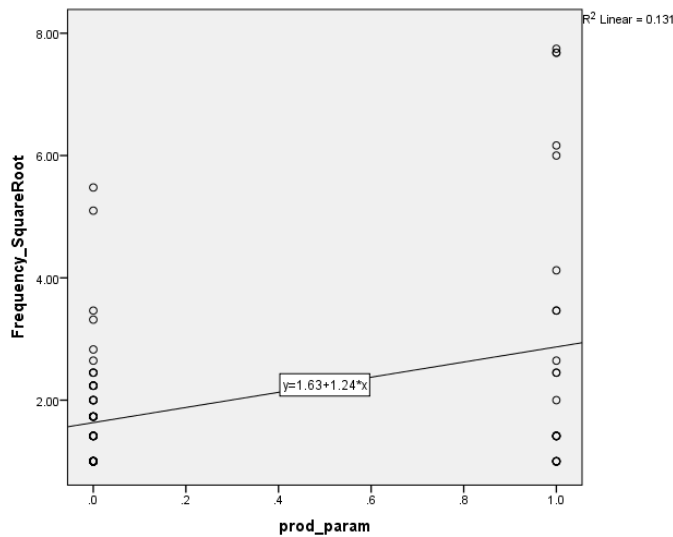


Figure 2: Box plot illustrating the correlation between the parameters of productivity and frequency

These significant findings will play a pivotal role in the forthcoming discussion of the loans' linguistic behavior in Russian. The parameter of productivity will be considered as one of the main factors affecting the loans' frequency of occurrence. The following statistical procedure will determine if the loans' frequency can be predicted by their derivational capacity.

The results of the linear regression analysis demonstrate that there is a statistically significant relationship between the predictor and the outcome variable,  $r(87) = .362, p < .001$ . The  $r^2$  for the equation was .131, which means that 13% of the variability in the frequency of occurrence can be explained by the parameter of productivity.

Table 4. Model summary for the linear regression test within the parameter of productivity

MODEL SUMMARY								
Change Statistics								
Model	R	R Square	Adjusted R Square	R Square Change	F Change	df1	df2	Sig. F Change
1	.362 <sup>a</sup>	.131	.121	.131	13.141	1	87	.000
a. Predictors: (Constant), Productivity_Parameter								
b. Dependent Variable: Frequency_SquareRoot								

In sum, the parameter of productivity was found to be the main parameter that moderately correlates with and predicts the frequency of occurrence of the -ING Anglicisms in the corpus.

## 5. Conclusion

It was hypothesized that there is statistical significance between the frequency and the descriptive parameters of the -ING loans. The quantitative methodological approach was expected to demonstrate significance of findings both in correlation and regression tests. In terms of the correlation tests, it was expected to obtain findings that would corroborate certain relationships existing between or across parameters. The regression procedure was expected to demonstrate whether or not the descriptive parameter can predict or affect the inherent parameter of frequency.

Both statistical analyses have provided different results: both statistically significant and non-significant. The significance of the findings was determined only as a result of the correlation and regression tests for the parameter of productivity in relation to the Anglicisms' frequency of occurrence in the corpus. However, the scrutiny of all the parameters has provided certain insights into the specificities of the adaptation of Anglicisms in Russian.

The analyses for the parameter of productivity yielded significant results. It was observed that the loans' productivity is moderately correlated with their frequency, which it also may predict to a certain extent, as the regression test demonstrated. Thus, the Anglicisms' productivity type can be characterized by possessing a higher frequency of occurrence in the corpus. In the working database, on the other hand, most of the Anglicisms were of the non-productive type. These Anglicisms were found to possess a lower frequency of occurrence in the corpus. Both statistical procedures have shown that the loans' frequency can be expected to increase if they fall into the productive category, and to decrease if they pertain to the non-productive group. The numerically significant correlation-based interaction between

the parameters of frequency and productivity demonstrates that while the loans' frequency of occurrence can be considered to be the main and most obvious factor of their adaptedness, their productivity characteristic may be an underlying phenomenon affecting and predicting the former. However, it should be understood that the relatively small dataset analyzed in this study constitutes a limitation that restricts the statistical power of the results. Another limitation is connected with its primary focus on the morphological and productivity-related aspects of the loanwords, while a more detailed discussion of the semantic and pragmatic characteristics would provide a fuller picture of the phenomenon.

The findings obtained indicate that there is a certain association between the descriptive parameter of derivation-based productivity and the inherent parameter of frequency. It is hoped that this study will be conducive to the expansion of the body of knowledge on Russian-English language contact, Anglicisms in Russian, loanword morphology and semantics, loanword adaptation, and replicable in corpus linguistics research and quantitative methods in applied linguistics.

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