

## RECONSTRUCTION OF THE COMMON SLAVIC THESAURUS OF EPIC POETIC FORMULAS: THE CORPUS APPROACH<sup>1</sup>

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In the present article, a new approach to historical-comparative studies of Indo-European poetic is suggested. It combines traditional etymological methods with corpus approach. Thus, to reconstruct the core thesaurus of Common Slavic epic poetic clichés, five independent corpora of Slavic epics were studied (Russian byliny, Ukrainian dumy, Bulgarian, Serbian and Croatian, as well as Slovenian heroic songs). Each of the traditions has a certain range of core formulas which share the common clausula (line's ending). The clausula words are the most important part of folklore vocabulary as they tend to be the most stable. Their stability over time is enforced by the recurrent metric patterns of the singing that accumulate at the line's end. Previously, it has been proved that clausula words constitute the core of formulaic expressions inside one tradition (B. Lord), eventually, Levinton showed that such comparison may be made between several cognate traditions, like Serbian, Croatian and Eastern Slavic. Nevertheless, the overall comparison of several epic traditions of the Slavs has not yet been accomplished. The present article tends to offer such comparison which can have important outcomes for the study of Common Slavic and, moreover, common Indo-European poetics. Quantitative analysis has shown that each of separate Slavic traditions has a lot of common core formulas. This set of formulaic nests (about 40) can be regarded as a core of Common Slavic epic tradition, preserved in daughter-traditions. The list comprises not only kinship terms, body parts, and natural elements, but cultural artefacts and terms as well (such as \*gordъ, \*slovo, \*vino, \*dvorъ, \*vorto). Further etymological comparison with formulas of other Indo-European traditions would show the range of innovations and retentions in Common Slavic poetical thesaurus.

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## РЕКОНСТРУКЦІЯ ПРАСЛОВ'ЯНСЬКОГО ТЕЗАУРУСА ЕПІЧНИХ ПОЕТИЧНИХ ФОРМУЛ: КОРПУСНИЙ ПІДХІД

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**Ключові слова:** *порівняльно-історичне мовознавство, сербський і хорватський епос, словенський епос, український епос, російський епос, загальнослов'янська, порівняльна поетика, метрика, математичне моделювання, фольклор.*

У статті пропонується новий підхід до історико-порівняльних досліджень індоєвропейської поетики. Він поєднує традиційні етимологічні методи з корпусним підходом. Для реконструкції основного тезауруса спільнослов'янських епічних поетичних кліше розглянуто п'ять незалежних корпусів слов'янських епосів (російських билин, українських дум, болгарських, сербських та хорватських, а також словенських героїчних пісень). Кожна з традицій має певний набір основних формул, що мають спільну клаузулу (закінчення рядка). Слова в клаузулах є найважливішою частиною фольклорного словникового запасу, оскільки вони, як правило, є найбільш стійкими. Їх стабільність у часі посилюється повторюваними метричними схемами співу, які зосереджуються в кінці рядка. Раніше було доведено, що слова-клаузули становлять серцевину формульних виразів однієї традиції

(Б. Лорд), і врешті-решт Левінтон показав, що таке порівняння може бути здійснено між кількома спорідненими традиціями, такими як сербська, хорватська та східнослов'янські. Тим не менше суцільне фронтальне порівняння кількох епічних традицій слов'ян за цими параметрами ще не було здійснено. Ця стаття пропонує таке порівняння, яке може мати важливі результати для вивчення загальнослов'янської і навіть спільноіндоєвропейської поетики. Кількісний аналіз показав, що кожна з окремих слов'янських традицій має багато спільних основних формул. Цей набір формульних гнізд (близько 40) можна розглядати як ядро загальнослов'янської епічної традиції, що зберігається в дочірніх традиціях. Список включає не лише терміни спорідненості, частини тіла та природні об'єкти, а й культурні предмети та теми (як-от \*gordъ, \*slovo, \*vino, \*dvorъ, \*vorto). Подальше етимологічне порівняння з формулами інших індоєвропейських традицій має показати міру інновацій та архаїзмів у праслов'янському поетичному тезаурусі.

**Formulation of the problem.** Since A. Kuhn found etymologically related expressions in Homer and the Indian epics in 1853, a separate branch of study has evolved, which deals with the reconstruction of common Indo-European poetic language finding etymologically related linguistic means in different daughter-traditions (of metrical, lexical, morpho-syntactic nature). The monographs by R. Schmitt, M. Durante, K. Watkins, and M. West, as well as the works of G. Nagy and V.M. Toporov, have become the reference works in the field of comparison of separate Indo-European traditions (mainly ancient Greek, Latin, and ancient Indian) and reconstruction of probable Indo-European cliché expressions [1; 2; 3; 4; 5; 6].

**The purpose and objectives of the article.** Traditional methods relied on the study of etymologically related formulas without any considerable digital aid: processing the texts in different languages was time-consuming. The study's success depended primarily on how well the researcher remembered the different employments of the cognate phrases. Word indexes and concordances for individual texts were also helpful.

However, it is high time that finding related formulas should be automated (at least, to a certain extent). One of the possible options for automating comparative-historical studies of Indo-European poetics is proposed in the current study. The result of corpus

processing should be a list of key formulas of Slavic traditions, which should be further compared with the results of corpus processing of other Indo-European traditions.

We in no way believe that a quantitative approach can reveal all the most ancient features of the Common-Slavic epic thesaurus. Some features may have faded over time in all traditions, and their share in the total number has decreased. However, this leaves space for further examination of Slavic epics and folklore's text corpora in general.

In the meantime, we will focus our efforts on identifying the most persistent and most frequent elements that are preserved in most Slavic epics. In this case, it is worth referring to the tendency (or "law") discovered much earlier [7]: the most frequent words usually turn out to be the most ancient. Probably, the same tendency can be found in the structure of the poetic thesaurus: the most frequent poetic clichés of different daughter traditions, provided that they are genetically related, can shed light on the state of their maternal ancestral tradition. We will check this assumption in the course of further research.

#### Subject and object of study. Text sources and research software

We have annotated several corpora of Slavic epic songs. The annotation was not complicated – all line boundaries were marked with // (double slash). Thus, using the AntConc [8] program, it was possible to find the necessary data regarding the lexical filling of the lines' starting or ending positions. The texts from the following collections were annotated in full:

Russian Byliny (BY), the total amount of lines – 19820 [9]

Ukrainian dumas (DU), the total amount of lines – 3720 [10]

Bulgarian epic songs (BU), the total amount of lines 12420 [11]

Serbian and Croatian heroic songs (SE), the total amount of lines 18984 [12]

Slovenian epic songs (SL), the total amount of lines 4225 [13]

**Class of clausula words. Interfaces between metrics, vocabulary, and syntax in folklore text.** Before we formulate hypotheses and process the data, it is necessary to provide information about the year's folklore metric.

1) The metric regularity in the line began to propagate from the end of the line, i.e., from the clausula (Kvitka, Kolessa, Elatov, G, Nagy, Meillet, West, Fantuzzi, Watkins – see [14; 15; 16; 17; 18; 19; 20; 21]).

2) An epic line corresponds to a complete syntactic phrase and a complete phrase of a song melody (Kolessa, Nikiforov – see [15; 22]).

3) Words that are consistently used in a particular position of the line, and above all in the strong position (at the end of a line, i.e., clausula), are formulas

and constitute a poetic thesaurus that forms the core of epic poetics (A. Lord [23]) and may be common to several closely related traditions, like Slavic ones [24].

It follows from this that statistically, it is possible to determine the class of words that will occur most often in clausulas rather than in other line positions. These words can be considered the syntactic and formulaic core of the Common Slavic folk poetics.

**The model.** The language of elementary set theory [25] is suitable for describing the hierarchical structure of folklore text.

Let analyze the following scheme:

A \_\_\_ B \_\_\_ C \_\_\_ Z

Let the entire range of language types used in the traditional society be a set of ZA. Folklore language is a set of ZB. Let the language means (lexical and others) used mainly in the clausulas are CZ. Elements CZ go through the most number of "filters", that is, selection parameters, respectively, are the least numerous of all groups:  $CZ \in BZ \in AZ \in ZA$ , which can be graphically depicted as follows.

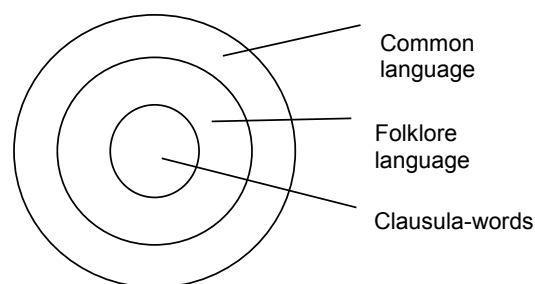


Figure 1

The strong parametrization of folklore text-creation makes the art of oral performance of the singer-improviser the programmed implementation of the thesaurus code. The core CZ set can be regarded as an archived thesaurus that stores metric, grammatical, syntactic, and lexical patterns that are replicated in the rest of the string. Thus, the word metrically required at the end of the string determines the appearance of specific lexical and syntactic patterns appearing on the left side of the string.

In general, the entire line can be represented as a sequence of segments

A \_\_\_ B \_\_\_ C \_\_\_ Z

in which the segments | AZ |, | BZ |, and | CZ | are realizations of units belonging to the sets {AZ}; {BZ}; {CZ}, where

$AB = AZ - BZ$  (general language without folklore subsets),

$BC = BZ - CZ$  (general folklore language without clausula words subsets),

$CZ = AZ - AC$  (common language without subset AC)

The degree of parametrization of each set can be represented in the following table, where M – metric parameters, L – lexical, S – syntactic.

Table 1

	M	L	S
CZ	+	+	+
BC	-	+	+
AB	-	-	+

The class of clause words CZ is small and closed, so it plays the role of constant in relation to which variables are determined, i.e., the beginning and the middle of a poetic line. One can think of a string as a chain of functional dependencies of these subsets, defined by the following:

$$CZ \rightarrow BC \rightarrow AB$$

Thus, each line of the folklore epic is a kind of poetic equation

$$AB = f(BC) = g(CZ).$$

The values of  $\Delta g(CZ) / f(BC)$  and  $\Delta f(BC) / AB$  are stable for the poetics of a certain folklore and are common for traditional poetics.

In other terms,

$$AB = a \times f(BC) = b \times g(CZ),$$

where *a* and *b* are the coefficients of the degrees of freedom of the composition of the string. Constructing the string itself while writing or improvising is a dynamic process.

Let us illustrate the functioning of the proposed model. We will take the three most frequent clausulas of Byliny epics and illustrate their correlation with the rest of the line. This example will show how the clausula organizes the entire string, limiting the freedom of choice of language elements that precede it. The closer the position is to the clausula, the fewer degrees of freedom it will have. The absolute frequency of the word form in the Byliny corpus is indicated in brackets.

So, we may consider the class of clause words to be sufficiently conservative and especially significant to focus our further attention on it. After all, having found the main clause words of all Slavic traditions, we thereby have a fairly complete (although not exhaustive) list of Common Slavic formulaic nests.

**Research procedure.** At the initial stage, frequency lists of clausula words were compiled for each subcorpora (they are available online). Subsequently, the lists of most frequent clausulas of all subcorpora were compared with each other. If a semantically independent word belonged to the first 2% of all possible clausulas' types of its tradition, we assigned

Table 2

**Formulaic nest with clausule слово**

A	B	C	Z
Общий вид: и / де / тут + говорил + Sub. (около 45 разных субъектов)	друго (1), едино (3), одно (1), таково (268), таковое (1), ёму (1)		слово (276)
> 45 types	6 types		1 type

Table 3

**Formulaic nest with clausule град**

A	B	C	Z
глагол движения + прилагатель- ное	Ерусалим (8), Галич (5), Київ (132), Кряков (2), Суздаль (1), Углич (1), Чернигов (5), Царь-тот- (2)		град (157)
> 50 types	8 types		1 types

Table 4

**Formulaic nest with clausule коня**

A	B	C	Z
переходной глагол + пред- лог	бела (2), добра (146), 0 (3), свой- (3), твоего (1), три (1)		коня (157)
> 50 types	6 types		1 type

it the first clausula rank. It is the independent words with such a rank that we compared.

For each clausula type thus detected, the relative weight was calculated among the total number of types of clausulas of the corresponding subcorpus, in other words, the index of the clause of a word form, which we calculated as  $k / n$ , where *k* is the number of reiterations of the clausula. For each word, these weights were summed up. Thus, the most frequent clauses in the most significant number of corpora (= poetic traditions) received the highest "score". Therefore, it was possible to find about 40 etymological series. We listed them in the order of descending frequency, starting with the most frequent in all five corpora (see table 5).

In the previous table, the absolute frequencies were not given, as they have little to show. In the following table, we have placed the ranks of words according to their total share in each tradition. For convenience, we present them in descending order of the sum of specific weights and present only the Proto-Slavic form (according to [26]):

Table 5

DU	BY	BU	SE	SL
словами	слово			slovo
цареграда	град	града	града	grad
кіньми	коня	коня	конаку	konjiča
молодці	молодец	младици	младенци	
поле	поле	планина	планине	pole

Table 5 (continuance)

голова	голову	глава	главу	glavo
земл-	землю	земя	земль-	
мати	матушка	майка	мајка	mati
дворі	двор	дворье	дворе	dvor-
літа	лет	лето		lét
молодий	млад	млада	млада	mlad
син-	сын	син-	син-	sin
великого	великую		великого	preveliko
біл-	белые		беле	bel-
ніг	ноги	нога	ноге	nog-
	вина	вино	вино	vinc-
морі	морє	море	море ?	morje
руки	руки	ръце	руку	roko
	голосом	глас-	гласа	glas
прибуває	был			bilo
немає	нет	немат	нема	nemata
	глубокие			globok-
жоно	жона	жена	оженио	ženiti
добре	доброго	добро		dobro
	раз	образи	образу	
год-	годов	години	година	
	золота	златарче	злата	zlat-
говор-	говор-	говори	говорио	govori
господарями		господине	господару	gospá
лежить	лежат		лежи	leži
стояти	стоит		постојало	stoji
переночувала	ночи	нощ-	ноћи	noč
	широкому	широко	широко	šüroko
	любим-			lúbleri
	дорого			draga
день	день		дана	
	-сват-	сватови	сватове	svaty
	воротами	врата	врата	vrat-
сокол-	сокол-	сокол-	сокола	

Table 6

	English meaning	DU	BY	BU	SE	SL	SUM
*gordъ	settlement	0.05%	2.33%	0.70%	1.51%	0.97%	5.55
*konjъ	horse	0.05%	2.31%	2.45%	0.07%	0.48%	5.36
*mati	mother	0.57%	1.00%	2.01%	1.02%	0.53%	5.14
*slovo	word	0.33%	4.11%	0.00%	0.00%	0.04%	4.49
*govoriti	speak	0.14%	0.16%	0.98%	1.07%	1.93%	4.30
*moldъ	young	0.48%	0.84%	0.28%	0.70%	1.63%	3.93
*golva	head	0.14%	1.24%	0.61%	1.18%	0.31%	3.48
*godъ	year	0.53%	0.38%	1.53%	0.76%	0.00%	3.20
*polje	field	0.05%	1.49%	0.59%	0.40%	0.40%	2.93
*vino	wine	0.00%	0.69%	0.57%	1.46%	0.13%	2.85
*lěto	summer	1.44%	0.85%	0.04%	0.00%	0.40%	2.73
*moldъ+ суфікс		0.86%	1.69%	0.04%	0.02%	0.00%	2.62
*ně	not	0.48%	0.56%	0.31%	1.09%	0.18%	2.61
*gospodъ	master	0.19%	0.00%	0.55%	0.70%	1.05%	2.50

Table 6 (continuance)

*morje	sea	0.24%	0.63%	1.09%	0.12%	0.35%	2.44
*dvorъ	courtyard	0.05%	0.99%	0.37%	0.81%	0.22%	2.43
*zemja	ground, soil	0.14%	1.18%	0.79%	0.23%	0.00%	2.34
*rъka	hand	0.14%	0.62%	0.31%	1.00%	0.18%	2.25
*svatъ	match-maker, relative	0.00%	0.35%	0.11%	1.60%	0.18%	2.24
*synъ	son	0.19%	0.81%	0.33%	0.49%	0.35%	2.17
*zolto	gold	0.00%	0.34%	0.24%	0.77%	0.57%	1.92
*dъnъ	day	0.05%	0.19%	0.00%	1.62%	0.00%	1.86
*sokolъ	falcon	0.19%	0.25%	0.42%	0.86%	0.00%	1.72
*stojati	stand	0.19%	0.44%	0.00%	0.05%	0.84%	1.52
*vorto	gate	0.00%	0.07%	0.11%	1.11%	0.13%	1.42
*velъjъ	big	0.05%	0.72%	0.00%	0.60%	0.04%	1.41
*bѣlъ	white	0.10%	0.72%	0.00%	0.14%	0.44%	1.40
*noga	leg	0.05%	0.71%	0.18%	0.28%	0.13%	1.34
*golsъ	voice	0.00%	0.57%	0.09%	0.11%	0.48%	1.25
*glybъ	deep	0.00%	0.54%	0.00%	0.00%	0.70%	1.25
*by-	to be	0.48%	0.57%	0.00%	0.00%	0.13%	1.18
*ležati	lie down	0.05%	0.13%	0.00%	0.04%	0.97%	1.18
*širъ	broad	0.00%	0.10%	0.37%	0.30%	0.40%	1.17
*noktъ	night	0.05%	0.10%	0.09%	0.07%	0.84%	1.14
*žena	woman, wife	0.19%	0.49%	0.09%	0.19%	0.13%	1.09
*dobrъ	good	0.14%	0.49%	0.11%	0.00%	0.26%	1.00
*raziti	to beat	0.00%	0.41%	0.20%	0.18%	0.00%	0.78
*l'ubъ	loved one	0.00%	0.32%	0.00%	0.00%	0.44%	0.76
*dorgъ	dear	0.00%	0.07%	0.00%	0.00%	0.62%	0.69

### Systematic organization of the class of clause words

So, if we organize the discovered words not by the number of uses, but by thematic groups, we obtain the following lists:

People: \*mati \*moldъ \*moldъ+cyфикс \*gospodъ \*svatъ \*synъ \*žena

Parts of the body: \*golva \*rъka \*noga \*golsъ

Animals: \*konjъ \*sokolъ

Cultural artifacts: \*gordъ \*slovo \*vino \*dvorъ \*zolto \*vorto

Natural objects: \*polje \*lѣto \*morje \*zemja \*dъnъ \*glybъ \*noktъ

Characteristics: \*godъ \*velъjъ \*bѣlъ \*dorgъ \*širъ \*dobrъ

Predicates: \*byti \*nѣ \*stojati \*raziti \*l'ubъ \*govoriti \*ležati

Thus, we have obtained semantic building blocks that serve to construct minimal motives and plots for most of the Slavic peoples' epic songs. They almost fully represent the main motives of Slavic epics. Moreover, each of them is, in fact, the center of a whole nest of formulas, which will be shown in future publications.

The class of clause words turned out to be stable for all analyzed epic traditions of the Slavic peoples, and its composition largely remained without significant changes in the daughter traditions.

The next stage involves comparing the main formula phrases found in the clauses of different Slavic traditions with etymologically related or semantically equivalent words of Ancient Greek, Latvian, and Vedic traditions, which also have a high frequency in the clauses.

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