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LINGUISTIC AND STATISTICAL ANALYSIS OF THE CONTENT OF THE IDIOMATIC SPACE OF ENGLISH MILITARY-ORIENTED TEXTS

In the article, the author conducts a linguistic and statistical analysis of the idiomatic space of English-language military-oriented texts and an experimental verification of the linguistic features of the phraseological units functioning. In the course of the study, the author used a number of research methods and identified morphological, syntactic, lexical and semantic features of phraseological units used in English-language military-oriented texts. In order to obtain reliable results on the morphology, semantics and structure of phraseological units, 1670 phraseological units were selected in compliance with all the requirements for sampling using mathematical statistics methods. The results of the sample processing have revealed a number of regularities in the idiomatic space of English-language literary texts on military topics, in particular, the most common among the phraseological units are verbal phraseological units, which are more than three times as numerous as substantive ones, eight times as numerous as adjectival phraseological units and more than ten times as numerous as adverbial phraseological units. The author explains this correlation with the description of active military operations in the studied works, which is why verbal phraseology prevails in the texts.

In addition, the author distinguishes lexical and semantic fields, in particular the lexical and semantic field of action, features, subject matter, time, feelings and emotions, and conditions. Based on the distribution of phraseological units between lexico-semantic fields and the analysis of the content of each field, the author argues that the greatest accumulation occurs in the following fields: verbal phraseological units in the lexico-semantic field "action"; substantive - in the lexico-semantic field "subject matter"; adjectival - in the lexico-semantic field "feature"; adverbial - in the lexico-semantic field "conditions"; interjections, proverbs, sayings - in the lexical-semantic field "emotions and feelings".

The author proves that there is a connection between the content of classes of phraseological units on the basis of morphological features and the content of the selected lexical and semantic fields of the idiomatic space of literary texts on military topics.

Keywords: phraseological unit, lexical and semantic field, sample, literary text, methods of mathematical statistics.

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ЛІНГВОСТАТИСТИЧНИЙ АНАЛІЗ ЗМІСТУ ІДІОМАТИЧНОГО ПРОСТОРУ АНГЛОМОВНИХ ХУДОЖНІХ ТЕКСТІВ НА ВІЙСЬКОВУ ТЕМАТИКУ

У статті автор проводить лінгвостатистичний аналіз ідіоматичного простору англomовних текстів на військову тематику та експериментальну перевірку лінгвальних особливостей функціонування фразеологізмів. В ході дослідження автором було використано низку дослідницьких методів та виявлено морфологічні, синтаксичні та лексико-семантичні особливості фразеологізмів, які вживаються в англomовних текстах на військову тематику. Для отримання достовірних результатів щодо морфології, семантики та структури фразеологічних одиниць було відібрано 1670 фразеологізмів з дотриманням усіх вимог щодо формування вибірки із застосуванням методів математичної статистики. Результати оброблення вибірки дозволили виявити низку закономірностей щодо ідіоматичного простору англomовних художніх текстів на військову тематику, зокрема найчастіше серед фразеологізмів зустрічаються дієслівні, що більше ніж у три рази перевищує кількість субстантивних, у вісім разів – кількість ад'єктивних та більше ніж удесятеро перевищує кількість адвербіальних фразем. Автор пояснює таке співвідношення з описом активних військових дій у досліджуваних творах, тому саме дієслівні фразеологізми переважають у текстах.

Окрім того, автором виокремлено лексико-семантичні поля, зокрема лексико-семантичне поле дії, ознаки, предметності, часу, почуттів та емоцій та обставини. На підставі розподілу фразеологізмів між лексико-семантичними полями та аналізу наповнення кожного поля автор стверджує, що найбільше накопичення відбувається: дієслівних фразеологічних одиниць у лексико-семантичному полі «дія»; субстантивних – у лексико-семантичному полі «предметність»; ад'єктивних – у лексико-семантичному полі «ознака»; адвербіальних – у лексико-семантичному полі «обставина»; вигуків, прислів'я, приказки – у лексико-семантичному полі «емоції та почуття».

Автор доводить, що існує зв'язок між наповненням класів фразеологізмів за морфологічною ознакою та наповненням виокремлених лексико-семантичних полів ідіоматичного простору художніх текстів на військову тематику.

Ключові слова: фразеологічна одиниця, лексико-семантичне поле, вибірка, художній текст, методи математичної статистики.

Problem statement

In the periods of fundamental social changes that characterize the end of the XX – beginning of the XXI century, the language system is enriched, responding to the emergence of new concepts, phenomena, realities of human life in society. The lexical and phraseological spaces of different languages, in general, and English, in particular, are the most dynamic (I. Bekhta, O. Matvienkiv, V. Cherednychenko, S. Denysenko, O. Levchenko, Yu. Zatsnyi, A. Suprun, H. Burger).

Since its beginning, phraseology has developed the problems of its theory in the linguistic plane from different points of view. The theoretical foundations of phraseology research as a branch of linguistics that studies phraseological units, methods of their study, principles of selection and classification, as well as the study of phraseological units as a special type of linguistic units characterized by certain features, are reflected in some works

of domestic and foreign linguists (M. Alefirenko, N. Amosova, Sh. Balli, P. Hiro, L. Bulakhovskiy, O. Holubovska, O. Potebnia, O. Selivanova).

The problems of phraseology of world languages, origin, structure and features of phraseological units, problems of idiomatics and phraseological coherence, the issue of establishing universals for the formation of phraseological units and their functioning in English have long attracted the attention of researchers (N. Amosova, O. Levchenko, A. Cowie, Ch. Fernando, B. Fraser, L. Smith). However, not all problems have yet found their scientific solution. One of them is the problem of diagnosing the peculiarities of the functioning of phraseological units.

Analysis of recent sources

Studying the structure of phraseology, scholars have addressed the problem of the semantics of phraseological units, which serve as a common means of expression and play an important role in various communication spheres. At the end of the XX century, a number of scientific works appeared in which the attention of researchers is focused on the study of phraseological units in the language-speech system, the interest of scientists in the field of cognitive phraseological studies and phraseological transformations in literary discourse has increased, the study of which was conducted on the material of literary texts (L. Davydenko, N. Lysetska, T. Sverdan, S. Ptashnyk, N. Skyba, L. Jaeger, S. Gries). First of all, this concerns the problem of its linguocultural / ethnolinguistic, cognitive-discourse, cognitive-onomasiological, communicative-pragmatic approaches, which are of scientific interest (O. Levchenko, A. Markovska, F. Boers, T. Dijk). In general, the semantic features of the functioning of phraseological units have been studied by Ya. Baran, L. Bulakhovskiy, Yu. Pradid, V. Uzhchenko, D. Uzhchenko and others. At the same time, phraseological ideography, as a way of writing with ideograms, has been the subject of research by T. Kniaz, I. Kolesnikov, I. Myroshnychenko, K. Mizin, I. Paten.

The works of foreign scholars (N. Amosova, O. Kunin, M. Shanskyi) contributed to the replenishment of the corpus of phraseological types with phraseological expressions. A critical analysis of the scientific works of foreign linguists allowed us to establish the conclusion that phraseology is a separate specific level of language. In addition, the idea that this level is formed in the course of its historical development as a separate linguistic branch is reflected in the scientific works of Ukrainian scholars (M. Alefirenko, Ya. Baran, V. Verba, O. Halynska, O. Levchenko, L. Omelchenko, V. Uzhchenko).

The peculiarities and nature of fixed phrases and expressions, their internal form and meaning were the subject of research by O. Potebnia, whose works, together with those of F. Fortunatov, A. Shakhmatov, and I. Sreznevskiy, formed the basis of the theory of phraseology.

In modern studies of phraseology, in particular in the works of O. Selivanova and T. Kniaz, phraseology is studied as a linguistic and semiotic phenomenon, which is a characteristic sublanguage in which the historical and mythological perception of reality, the cultural heritage of the people, the ethnic group's perception of the world around them, as well as the reflective experience of their ancestors are transmitted in a stable form. The current stage of phraseology development continues to be characterized by a variety of approaches and aspects of analysis.

However, in-depth studies of phraseological units show that there are still existing and unresolved problems. The reason for this is, on the one hand, the ever-widening material base on which these studies rely on, and, on the other hand, the fact that phraseological research partly remains at the level of observation or classification of material, not reaching deeper or more abstract levels of study of the phraseological sphere used in other linguistic disciplines. One of the problems is the lack of comprehensive linguistic and statistical studies of morphological and lexical-semantic features of the functioning of phraseological units in military-oriented literary texts.

The purpose of the study is to conduct a linguistic and statistical analysis of the idiomatic space of English-language military-oriented texts and experimentally to verify the linguistic features of phraseological units functioning.

Presentation of the main material

As a result of using a number of research methods, we have identified the morphological, syntactic, lexical and semantic features of phraseological units used in English-language military-oriented texts [1]. At this stage of the study, it is important to identify the linguistic and statistical aspects of the use of phrases in these texts.

In order to obtain reliable conclusions about the morphology, semantics and structure of phraseological units, 1670 phraseological units were selected from seven English-language military-oriented texts in compliance with all the requirements for sampling using mathematical statistics [2; p. 77]. It should be noted that the sample did not include phrases that are repeated in the text.

The results of data collection, sample processing and statistics calculation have revealed a number of regularities in the idiomatic space of English-language fiction texts on military topics, including the following:

- the most frequent among the phraseological units are verbal ones, in which verbs are the nuclear components and which usually play the role of a predicate in a sentence. Among the phraseological units selected for the sample, verbal phrases account for 64.31% (1074 phrases). In our opinion, the presence of such a rather large share of verbal phrases is explained by the fact that the respective literary texts describe dynamic actions, encourage them, and such phrases can ensure this;

- substantive phraseological units are much less frequent in the sample than verbal ones (about 19.34% (323 phraseological units)). In phraseological units belonging to this class, the noun is the core component, and in the sentence they play the role of either subject or complement;

- among the phraseological units in the sample there are adjectival phraseological units, i.e. those with an adjective as their core component, but they are less common than substantive phrases – they account for only about 8.02% (134 phraseological units). In sentences, these phraseological units play the role of a feature;

- even less frequent in the sample are adverbial phrases (5.99% (100 phrases)). In such phraseological units, the core component is an adverb, and in the sentence they play the role of a circumstance;

- the least frequent phraseological units in the studied works and the sample are interjections, proverbs or sayings (only 2.34% (39 phraseological units)). They are quite few, but such phrases emotionally color the texts and this significantly enhances the sensual and psychological load of literary military-oriented texts.

The number of verbal phrases in literary military-oriented texts is more than three times higher than the number of substantive phrases, eight times higher than the number of adjectival phrases and more than ten times higher than the number of adverbial phrases. This ratio is related to the description of active military operations in the studied works, so it is verbal phraseology that prevails in the texts.

The analysis and application of mathematical statistics methods made it possible to outline the idiomatic space of English-language military-oriented texts and classify its content. Summarizing the above, we can state the following:

- phraseological units can be conditionally divided into verbal, adverbial, adjectival, substantive and interjections, proverbs, and sayings on the basis of morphological features;

- most of the phraseological units used in literary texts on military topics are verbal phrases (64.31%), for which the nuclear component is a verb;

- substantive (19.34%), adjectival (8.02%) and adverbial (5.99%) phraseological units are much less common in military-related fiction than verbal ones;

- there are very few interjections, proverbs, and sayings in the studied works (2.34%).

In addition, in the course of the research, using the method of expert assessments [3], we identified the following lexical and semantic fields:

1) the lexical and semantic field of phraseological units used to denote emotions and feelings (emotions and feelings);

2) the lexical and semantic field of phraseological units denoting the actions of military personnel (action);

3) the lexical and semantic field of phraseological units denoting the conditions of actions (conditions);

4) the lexical and semantic field of phraseological units denoting time and time frames (time);

5) the lexical and semantic field of phraseological units denoting subject matter (subject matter);

6) the lexical and semantic field of phraseological units denoting a feature (feature).

A study of the content of lexical and semantic fields has revealed that within each field there are phraseological units of different classes, which were distinguished by morphological features [1; p. 16]. It is worth noting that within each field there is a regularity in the quantitative ratio of phrases of each class.

The number of verbal, substantive, adverbial, adjectival phrases and interjections (sayings, proverbs) in the lexical and semantic fields can be estimated from Table 1.

Table 1

Summary table on the distribution of phraseological units of different classes by lexical and semantic fields

Lexico-semantic fields Classification	Actions	Feature	Time	Subject matter	Emotion, feelings	Conditions	Total
Verbal	44,19%	4,73%	6,29%	2,51%	5,69%	0,90%	64,31%
Substantive	1,44%	3,95%	3,83%	4,97%	3,23%	1,92%	19,34%
Adjectival	0,12%	4,61%	0,36%	0,42%	0,42%	2,10%	8,02%
Adverbial	0,06%	1,08%	1,14%	0,12%	0,06%	3,53%	5,99%
Interjections	0,18%	0,18%	0,24%	0,00%	1,74%	0,00%	2,34%
Total	45,99%	14,55%	11,86%	8,02%	11,14%	8,44%	100,00%

Table 1 shows that for each lexico-semantic field there is a maximum accumulation of phraseological units in the classes represented in accordance with the nuclear component of the phrase and the syntactic role it plays in the sentence (the largest percentage in the lexico-semantic fields is highlighted in color).

Based on the data obtained, it can be argued that there is the largest accumulation:

- verbal phrases in the lexical and semantic field “Action”;

- substantives - in the lexical and semantic field “Subject”;

- adjectives - in the lexical and semantic field of “Feature”;

- adverbials - in the lexical and semantic field “Conditions”;
- interjections, proverbs, sayings - in the lexical and semantic field “Emotions. Feelings”.

It can be assumed that there is a correlation between the content of each lexico-semantic field and the class of phraseological units on the morphological basis. The application of the Spearman’s rank correlation method [4; p.54] for statistical evaluation of the assumption for pairwise comparison of the textual material selected for the experimental study is presented in Table 2.

Table 2

The results of calculating the correlation coefficients between the classification of phraseological units by morphological features and the filling of lexico-semantic fields

Lexico-semantic field Classification	Action	Feature	Time	Subject matter	Emotions, feelings	Conditions
Verbal	$r_B=0,564$	$r_B=0,196$	$r_B=0,221$	$r_B=0,216$	$r_B=0,187$	$r_B=0,211$
Substantive	$r_B=0,165$	$r_B=0,114$	$r_B=0,164$	$r_B=0,493$	$r_B=0,149$	$r_B=0,098$
Adjectival	$r_B=0,156$	$r_B=0,365$	$r_B=0,136$	$r_B=0,156$	$r_B=0,159$	$r_B=0,067$
Adverbial	$r_B=0,110$	$r_B=0,185$	$r_B=0,145$	$r_B=0,168$	$r_B=0,197$	$r_B=0,389$
Others	$r_B=0,213$	$r_B=0,216$	$r_B=0,198$	$r_B=0,195$	$r_B=0,512$	$r_B=0,187$

The highlighted cells in Table 2 contain the values of the correlation coefficient that are statistically significant at a high level, while the rest have statistically insignificant values r_B . The obtained results confirm our hypothesis about the existence of a correlation between the classification of phraseological units by morphological features and the filling of the corresponding lexico-semantic fields of the idiomatic space in English-language literary military-oriented texts.

In addition, using the methods of correlation analysis [5; p.63], we attempted to identify correlations between the classification of phraseological units into phraseological combinations, fusions, unities (Sh. Balli) and classes on the basis of morphological features, as well as between the division of phraseological units into phraseological combinations, fusions, unities and the content of the lexico-semantic fields identified in the research. It was the methods of correlation analysis that allowed us to make sure of this. The results of the calculations are presented in Tables 3 and 4.

Table 3

The results of calculating the correlation coefficient between the division of phraseological units into combinations, fusions, unities and the classification of phrases by morphological feature

Classification	Verbal	Substantive	Adjectival	Adverbial	Others
Phraseological combinations	0,196	0,154	0,158	0,112	0,135
Phraseological fusions	0,186	0,167	0,175	0,202	0,178
Phraseological unities	0,213	0,169	0,201	0,211	0,184

Table 3 shows that all the values of the correlation coefficient are quite small and not statistically significant.

Table 4

The results of calculating the correlation coefficient between the division of phraseological units into compounds, fusions, unities and lexical-semantic fields

Classifications	Action	Feature	Time	Subject matter	Emotions, feelings	Condition
Phraseological combinations	0,221	0,143	0,156	0,198	0,189	0,176
Phraseological fusions	0,165	0,234	0,225	0,196	0,236	0,174
Phraseological unities	0,213	0,182	0,197	0,219	0,228	0,185

The analysis of Table 4 also shows that none of the calculated numbers exceeds the critical value of the correlation coefficient at 5% ($r_H = 0,277$). This means that with a probability of 95%, acceptable for linguistic

research, it can be stated that there are no dependencies or connections between the division of phraseological units into phraseological combinations, fusions, unities and classes on morphological grounds, as well as between the division of phraseological units into phraseological combinations, fusions, unities and the filling of lexico-semantic fields.

In addition, the study found that metaphorized phraseological units are used in military-oriented literary texts, which account for 28.8 % of the total sample. The use of mathematical statistics methods has shown the uniformity of the distribution of the studied phraseological units in the text in works on military topics. The analysis of the sample of 1670 phraseological units revealed a fairly large number of motivated phraseological units, which is about 74.91%, which significantly exceeds the number of unmotivated ones (25.09%), but at the same time, among the unmotivated phraseological units, the number of metaphorized ones significantly exceeds their number among the motivated phraseological units. This situation is explained by the fact that the studied works of fiction describe military actions, operations, organizational moments of wars, and this leads to the need to use motivated (understandable in meaning) phraseological units that do not contain metaphors (without “hidden” meaning), that is, those that encourage the performance of clear active actions.

In the course of the study, the lexico-semantic fields of the phraseological space were identified using the method of expert evaluation. The experts were experienced researchers, translators and native speakers. As a result of the work, 6 main lexico-semantic fields were identified: “action”, “feature”, “subject matter”, “conditions”, “time”, “emotions and feelings”. According to the results of the study, the largest lexico-semantic field is the lexico-semantic field “action” (45.99% of the total number of phraseological units in the sample), the field “feature” is almost three times smaller (14, 55%), all the other fields are approximately the same, ranging from 8.02% to 11.86% of the selected phrases (“time” - 11.86%, “subject matter” - 8.02%, “emotions and feelings” - 11.14%, “circumstance” - 8.44%).

Conclusions

To summarize, we can state that the most commonly used phraseological units in military-oriented texts are verbal phraseological units, which make up about 64.31% of all the analyzed phraseological units. Among verbal phraseological units, the most commonly used structural model is *V+N*, which accounts for almost half of the total volume of verbal phraseological units.

The next most frequently used are substantive phraseological units, which account for 19.34% of the total number of phraseological units selected for the sample. For such phrases, the noun is the core component and the most used construction is *Prep.+N*.

There are few adverbial and adjectival phraseological units, namely, 5.99% and 8.02% respectively. The most characteristic constructions for adverbial phraseological units are *Conj.+Adv.+Conj.+Adj.* and *V.+Pron.+Adv.*, and for adjectival phraseological units – *Adj.+N.* and *Prep.+Adj.+N.*

Interjections, proverbs, and sayings are the least common in military texts.

In addition, based on the distribution of phraseological units between lexico-semantic fields and the analysis of the content of each field, we can conclude that the greatest accumulation occurs verbal phraseological units in the lexico-semantic field “action”;

substantive - in the lexical and semantic field of “subject matter”;

adjectives - in the lexical and semantic field of “feature”;

adverbials - in the lexical and semantic field of “conditions”;

interjections, proverbs, sayings – in the lexico-semantic field of “emotions and feelings”.

Thus, there is a connection between the content of classes of phraseological units on the basis of morphological features and the content of the selected lexico-semantic fields of the idiomatic space of military-oriented texts. To prove this thesis, the methods of correlation analysis were used, which confirmed its reliability at a high level of statistical significance.

It is worth noting that it is impossible to establish such a pattern for the lexico-semantic field “time”. In this field there are phraseological units of each class, most of them are verbal (6.29%), but their number is almost seven times less than the number of verbal phraseological units in the “action” field. The application of correlation analysis methods did not reveal statistically significant correlations.

Directions for further research include the establishment of a study of the cultural aspect of the use of phraseological expressions in English-language literary texts on military topics.

References

1. Basaraba I. O. Leksyko-semantychni polia frazeolohichnoho prostoru anhlomovnoho viiskovoho dyskursu. Zakarpatski filolohichni studii, 2021. № 16. S. 45–50.
2. Buk S. N. Osnovy statystychnoi linhvistyky: navch.-metod. posib. Vydavnychiy tsentr LNU imeni Ivana Franka, 2008. 124 s.
3. Nechaiev V. P., Beridze T. M., Kononenko V. V., Riabushenko N. V., Bradul O. M. Teoriia planuvannia eksperymentu: navch.posib. Kyiv: Kondor, 2005. 232 s.
4. Perebyinis V. I. Statystychni metody dlia linhvistyky: posib. Vinnytsia: Nova knyha, 2013. 176 s.
5. Teleiko A. B., Chornei R. K. Matematyko-statystychni metody v sotsiologii ta psykholohii: navch. posib. Kyiv: MAUP, 2007. 424 s.