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STATISTICAL PROFILE OF THE EMOTIONAL STATE OF FEAR 'СТРАХ' IN R. IVANYCHUK'S AND P. ZAHREBELNYI'S TEXTS

У статті представлено результати статистичного дослідження історичних романів Р. Іваничука та П. Загребельного. Статистичний аналіз дає цінну інформацію про особливості ідіолекту тієї чи іншої мовної особистості. Досліджено колокації із компонентом СТРАХ, оскільки вербалізаціям цього концепту, порівняно з вербалізаціями інших емоційних станів, властива найвища частотність.

Здобуто дані про високочастотні та низькочастотні колокати з досліджуваним компонентом та виокремлено їхні типові структурні моделі. Запропонована методика дослідженні дає змогу створити статистичні профілі досліджуваних текстових концептів для подальшого зіставлення, що дасть змогу виявити спільні та відмінні характеристики ідіолектів.

Ключові слова: *ідіолект, мовна особистість, колокація, модель, емоційний стан.*

Scientific problem and its relevance. The language personality of a writer is expressed through the individually used words. Moreover, his/her artistic and individual view of the world is reflected in linguistic expression (Переломова 2002: 11). The study of the author's language characteristic features enables tracking their preferences in the use of certain lexical, morphological, and syntactic means in the texts.

The emotional sphere is considered to be a fundamental component of the language personality's mental world, meanwhile the verbalization of the emotional state of *FEAR* enabled us to present idiolect markers of each writer studied.

"Any text has unique features which distinguish it from other texts and elements. In other words, both distinctive and common characteristics are combined, and the actual statistical method makes it possible to determine these characteristics and establish the relationship between them" (Karasov et al., 2022: 138). So, the statistical approach makes it possible to present quantitative markers of the idiolect and, in turn, gives them qualitative interpretation (Lototska 2022). By analyzing the author's lexicon in the text, it becomes possible to observe their distinctive characteristics. The text serves as the foundation for this analysis. (Buk 2009).

Studying the nominations and collocations of basic emotions is a significant stage in establishing individual features and presenting the author's worldview in R. Ivanychuk's and P. Zahrebelnyi's texts. Emotions are "self-concerning, partly physical responses that are at the same time aspects of a moral and ideological attitude; emotions are both feelings and cognitive constructions, linking person, action, and sociological milieu" (Levy 1983: 128).

Analysis and statement of the research problem. The fact that the language itself is a sophisticated system that operates in accordance with the established laws of statistics validates the need for using statistical methods in linguistics (Перебийніс та

ін., 1985). Statistics is an important tool for linguistic data analysis as quantitative methods guarantee the dependability of outcomes and facilitate the identification of linguistic components and text structure properties (Lototska 2020).

The studies of S. Buk (Buk 2009, 2019), V. Levytskyi (Левицкий 2007), V. Perebiinis (Перебийніс та ін., 1985; Перебийніс 2002), O. Pavlychko (Павличко 2010), V. Tesliuk, I. Khomytska (Хомицька, I. Ю., Теслюк, В. М., 2015) and others trace the use of quantitative methods in analyzing fictional texts to identify unique individual characteristics. Writer's idiolect analysis presents tendencies for its parameterization, quantitative analysis, and corpus-based approach to the text study (Buk 2019; Danyliuk et al., 2019; Kalymon 2020; Karasov 2022; Kulchytskyi 2019, 2020).

Statistical profiles of scientific texts in linguistics (Левченко 2016) and Ukrainian prose fiction written by female and male writers (Levchenko et al., 2021) were studied based on collocations to reveal typical markers. The paper (Ситар 2018) presents the statistical analysis of indivisible word combinations with different components, morphological content, and non-identical semantic-syntactic relations in the Ukrainian language.

Research based on text corpora drew considerable attention to the analysis of collocations, as well as to the frequency of words (word forms). Despite the relatively recent introduction of the term 'collocation' in linguistics, namely in 1990, linguists in the 20th century focused their research on particular theoretical aspects of collocations, which remain relevant to this day (Бобкова 2014; Дарчук 2010; Загнітко 2014; Ситар 2018; Firth 1961; Sinclair 1991).

R. Ivanychuk (1929–2016) and P. Zahrebelnyi (1924–2009) are significant personalities in the Ukrainian literature of the second half of the 20th century and the beginning of the 21st century. Their fiction prose is constantly at the center of attention of literary investigation. There is also research that focuses on the linguistic aspect of the study of their texts. R. Ivanychuk's texts have already been the object of statistical analysis (Лотоцька 2021, 2022; Kulchystkyi 2019; Lototska 2020, 2022), as opposed to the texts of P. Zahrebelnyi.

R. Ivanychuk's use of language was analyzed to examine the verbalization of the emotional states of *РАДІСТЬ* 'JOY' / *ГНІВ* 'ANGER' and color nominations (Лотоцька 2021). P. Zahrebelnyi's fiction became the object of statistical research for the first time. Previously, his texts had been the object of literary and critical, linguistic-cognitive and pragmatic, structural-semantic and stylistic investigations, etc.

In Ukrainian linguistic studies, nominations of emotions were studied via metaphorical models (Єщенко 2018; Мазепова 2014) and associative verbal network based on statistical characteristics (Hultso et al., 2022; Levchenko et al., 2021; Tyshchenko et al., 2020). T. Yeshchenko claims that metaphors in the text possess linguistic and personological characteristics and emphasizes the application of statistical methods to study the writer's language portrait (Єщенко 2018: 42). Comparative studies of the associative verbal network representing the conceptual domain *ЗРАДА* 'BETRAYAL' (Levchenko at al., 2021) and the conceptual domain *БІДА* 'MISERY' and its related concepts of *ЗАЗДРІСТЬ* 'ENVY' and *ЖАДІБНІСТЬ*

'GREED' (Tyshchenko et al., 2020) are based on quantitative data to make more objective conclusions.

In addition, J. Krasnobayeva-Chorna outlines specific features of the *JOY* emotional profile in the Ukrainian language based on idioms with *JOY* and analyzes how this emotional state is expressed non-verbally (Краснобаєва-Чорна 2019); O. Mazepova studies metaphorical models of the emotional concepts of *СУМ* 'SADNESS' and *РАДІСТЬ* 'JOY' in the Persian language (Мазепова 2014); N. Lototska performs the statistical analysis of collocations with the concept of *РАДІСТЬ* 'JOY' in R. Ivanychuk's text corpus (Lototska 2019) and describes the conceptual profile of the concepts of *РАДІСТЬ* 'JOY' / *ГНІВ* 'ANGER' by means of conceptual analysis to study their typical metaphor models (Лотоцька 2021, 2022).

"The importance of emotion study is motivated by their evaluative function, which is directly connected with the process of obtaining individual life experience" (Краснобаєва-Чорна 2019: 4). Emotion concepts and language means, through which emotions are expressed, may differ significantly across texts of different language personalities.

Methods, resources and tools. "Corpus linguistic research offers strong support for the idea that language variation is systematic and can be described using empirical, quantitative methods" (Biber et al., 2010). "The widespread use of computer-based ways in modern language studies and natural language processing has become increasingly popular and has opened new possibilities for exhaustive text analysis" (Hrytsiv et al., 2021).

Text corpus possesses a huge potential for the study of the writer's texts in qualitative and quantitative aspects and is considered reliable criteria when determining the acceptability and the evaluation of certain language phenomena use (Stefanowitsch 2020). Large corpora should thus display a rather complicated mixture of statistical features, typical for different individual styles (Pawłowski 2018).

"Statistics is known to be a quantitative approach to research. Qualitative analysis differs from quantitative analysis in that in the former no attempt is made to assign frequencies, percentages and the like to the linguistic features found or identified in the data. In qualitative research, however, we use the data only for identifying and describing features of language usage and for providing real occurrences/examples of phenomena" (Gómez 2013: XI].

Statistical methods applied to different writers' texts may reveal statistical characteristics which distinguish them from one another and, therefore, present a unique individual creative manner of a writer (Dittmar 1996: 111). Frequent vocabulary in the writer's texts provides valuable information about basic concepts of the language personality and reveals his/her idiostyle characteristics, meanwhile low-frequent vocabulary distinguishes his/her texts from others.

Text corpus and instruments of corpus linguistics serve as the most efficient and time-saving tool of text processing that can be used to analyze the compatibility of lexical units, and to display any unique characteristics related to their usage.

E. Tognini-Bonelli developed the 'corpus model of meaning' based on corpus data (Tognini-Bonelli 2001: 214) which supposes that the meaning does not focus just

on one lexical unit but extends to a word sequence. According to J. Sinclair the model is "a combination of words that occurred at least twice in the analyzed text" (Sinclair 1991: 57).

The tendency of words to occur together in a collocation is one of the language laws. The study of writers' lexicon based on collocations enables the identification of unique features within their texts, because regularly reproduced syntagmatic sequences, i.e. collocations, as well as not isolated lexical units, are significant in text analysis (Лотоцька 2021: 10).

From a statistical point of view collocations are recurrent co-occurrences of word pairs given a short span of text (Benson 1990; Firth 1957; Sinclair 1991). Thus, they are often identified by applying association measures on co-occurrence counts in corpora of different sizes (Pecina 2010). The statistical association measure is intended as "an indicator of how strong the association between the pair's components is, correcting for random effects" (Evert 2004: 75).

There are different statistical association measures that reflect strength of association for the same collocation such as MI-score, T-score, log-likelihood, Dice coefficient, z-score, gmean, etc. It should be noted that MI-score is most suited for the study of terminological combinations, proper names, compound words, that is, for extracting low-frequency combinations; T-score, by contrast, works better with high-frequent stable combinations (functional words, discursive words) and stable set phrases (Левченко та ін., 2019). MI-score gives too much weight to low-frequency events (Gómez 2013: 205-206), T-score is best suited for extraction of the most frequent collocations; MI-score is better measure to find similarities, while T-score is preferable to establish differences.

Methodologically, collocation analysis is viewed as essentially a probabilistic phenomenon consisting of identifying statistically significant collocations and excluding chance combinations. (Gómez 2013: 196).

To identify the author's markers of idiolect we suggest applying corpus-based approach to study the text, to get statistical data for objectives conclusions, and to compare obtained qualitative and quantitative data using the functional of GRAC. It is necessary to note that modeling as an approach allows to better represent the lexical structure of the text, understand the mechanism of selecting lexical units in the author's text, and clarify individual words' semantics and their combinations.

The **goal** of this study is to present a statistical profile of the nomination of emotional state of *FEAR* 'СТРАХ' in the writers' texts to identify and analyze their idiolect features. The **task** of this paper is to present the emotional state of *FEAR* 'СТРАХ', extract typical collocations with this word, reveal common and distinctive features in the writers' texts, and extract individual-authors co-occurrences for the language personalities studied.

The research **object** is R. Ivanychuk's and P. Zahrebelnyi's historical prose. The research **subject** is the nomination of the emotional state of *FEAR* 'СТРАХ' and its typical collocations.

The scholarly **novelty** of the research is defined by the lack of works dedicated to the verbalization of emotions through collocations and their statistical characteristics in R. Ivanychuk's and P. Zahrebelnyi's texts.

The **theoretical value** of the work consists in deepening the theoretical principles of the study of emotions in the writer's texts.

The **practical results** can be used to compile the author's collocation dictionary for writer's language. Statistical parameters enable automatic text processing and further text attribution. This type of study is not only applicable to idiolect research, but can also be applied to stylometric and associative network studies, as well as literature investigations.

Therefore, the use of the corpus-based approach, statistical data, modeling of a statistical profile, and comparative analysis of the obtained data will make it possible to identify individual markers of R. Ivanychuk's and P. Zahrebelnyi's idiolects.

Emotion words play a crucial role in understanding an author's personality and the presentation of his/her worldview. So, the **research hypothesis** is that *FEAR* 'СТРАХ', which is one of basic emotions, as well as its verbalization through collocations will provide valuable information about the idiolect of the language personalities studied and may serve as markers of R. Ivanychuk's and P. Zahrebelnyi's idiolects.

Modeling the statistical profile of the emotional state of *FEAR* 'СТРАХ' in R. Ivanychuk's and P. Zahrebelnyi's texts means an integrated text processing of their fiction novels. The initial stage of the research process involves the creation of sub-corpora of R. Ivanychuk's and P. Zahrebelnyi's texts based on GRAC which can provide an opportunity to conduct more advanced and promising studies of their idiolects (Buk, 2019).

To execute this research, the sub-corpora of R. Ivanychuk (RISC) and P. Zahrebelnyi (PZSC) were created in GRAC-16 by applying filters such as DOC.AUTHOR and DOC.STYLE.

• RISC comprises 16 historical novels and 1 historical trilogy. Total corpus size is 1 249 836 words:

At The Edge Of The Paven Way (Krai bytoho shliakhu), Mallows (Malvy), Red Wine (Cherlene vyno), Manuscript From Ruska Street (Manuskrypt z vulytsi Ruskoi), Water From The Stone (Voda z kameniu), The Fourth Dimension (Chetvertyi vymir), Scars On The Rock (Shramy na skali), Crane's Cry (Zhuravlynyi kryk), Because War Is War (Bo viina viinoyu), Horde (Orda), The Gospel Of Thomas (Yevanheliie vid Tomy), Pillars Of Fire (Vohnenni stovpy), Saxaul In The Sands (Saksaul u piskakh), Across The Pass (Cherez pereval), Pilgrimage (Khresna proshcha), Voices From Above The Waters Of Kinneret (Holosy z-nad vod Henisareta), I Have Not Written About Donbas Yet (Ya shche ne pysav pro Donbas).

• PZSC includes 8 historical novels. Total corpus size is 1 248 904 words:

Expulsion from paradise (Vyhnannia z raiu), Miracle (Dyvo), Eupraxia (Yevpraksiia), Lion heart (Levyne sertse), Roksolana (Roksolana), Death in Kyiv (Smert u Kyievi), The thousand-year-old Nicholas (Tysiacholitnii Mykolai); I, Bogdan (Ya, Bohdan).

The data obtained from created sub-corpora are extracted, processed, evaluated statistically and then analyzed. To check the statistical significance of the results, the modified t-test[1] is applied (Перебийніс 2002).

Proposed research techniques which consist in understanding and identifying the mechanisms of the choice of lexical units in the writer's text, extracting the collocations of the studied emotion state, and building their typical models demonstrate the mental world through the prism of the author's lexicon and text.

Presentation of the research material and substantiation of the research results. Emotionality is one of the characteristic features of idiolect and an important factor to influence readers and their feelings. Nominations of emotional states are expressions of the language personality, so their verbalization represents significant information for R. Ivanychuk's and P. Zahrebelnyi's preferences.

FEAR is a basic emotion concept; its linguistic representation is highly language specific and culture specific (Wierzbicka 1972). This emotion is one of the most important concepts of the consciousness, which reflects culturally significant states of the ethnic community (Kövecses, 1998; Wierzbicka 1972).

The Dictionary of the Ukrainian language provides the following definition of the word *fear* 'страх': a state of excitement, worries, and anxiety, caused by the expectation of something unpleasant, or undesirable (DUL-9: 754). Consequently, the semantic primitives related to the emotion of *FEAR* could be categorized or incorporated under the following framework: "bad, do, happen, know" (Wierzbicka 1972: 59–63).

The research manifests that the emotional state of *FEAR* 'СТРАХ' is the most frequent in RISC (61.2) and PZSC (22.4). The list of basic emotions with their frequency found in the texts is presented in table 1. After the analysis of the the collected data, it can be observed that the frequency of the word *FEAR* 'СТРАХ' in RISC is 63% higher than in PZSC. The t-test of frequency of the emotion nomination in both RISC and PZSC equals 15.8. This value is within the zone of determinacy and, therefore, it can be considered as an idiolect marker.

Table 1

Frequency of basic emotions in RISC and PZSC

Emotion	RISC		PZSC	
	AF^2	RF^3	AF	RF
страх 'fear'	766	61.2	280	22.4
гнів 'anger'	154	12.3	150	12
сором 'shame'	99	7.92	93	7.45
презирство 'contempt'	9	7.2	5	0.4
огида 'disgust'	32	2.56	8	0.64
провина 'guilt'	82	6.56	58	4.64
страждання 'suffering'	42	3.36	137	10.9

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[1] According to V. Perebiinis, the number of degrees of freedom can't be determined if t<1.96, under this condition, the difference isn't significant and can't be an idiolect marker (Перебийніс, 2002: 82)

[2] Absolute frequency

[3] Relative frequency

Emotion	RISC		PZSC	
	AF^2	RF^3	AF	RF
інтерес 'interest'	9	0.72	35	2.8
здивування 'astonishment	35	2.8	25	2
радість 'joy'	278	22.2	248	19.8

One of the important steps of integrated idiolect study is modeling, i.e., description and analysis of lexical units, their verbalizers and typical models which are represented on the verbal level by synonyms, collocations, and phraseological units (Левченко 2017). The text modeling approach involves the analysis of the obtained frequency-comparison tables.
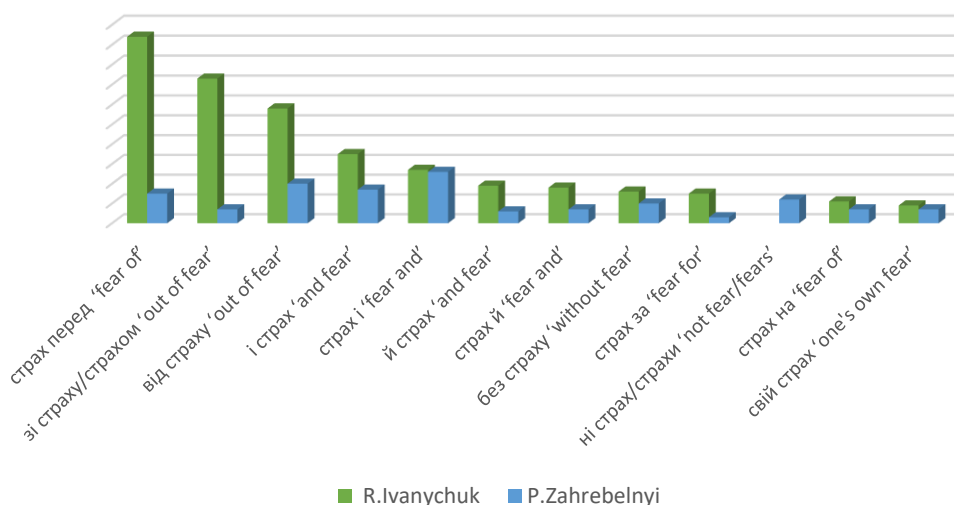
Collocations with *FEAR* 'СТРАХ' are described and extracted by means of GRAC and its Collocation tool of the NoSketch Engine system. Absolute and relative frequency, as well as T-score and MI-score are applied to describe and analyze the collocations.

The list of 10 high-frequency collocations with the word *FEAR* 'СТРАХ' in RISC and PZSC are presented in the table 2 and the figure 1.

Table 2

High-frequency collocations with *FEAR* 'СТРАХ' in RISC and PZSC

RISC				PZSC			
Collocation	AF	RF	T-score	Collocation	AF	RF	T-score
страх перед 'fear of'	94	7.52	9.69527	страх і 'fear and'	26	2.08	5.09797
зі страху/страхом 'out of fear'	73	5.84	8.54395	від страху 'out of fear'	20	1.6	4.47196
від страху 'out of fear'	58	4.64	7.61549	і страх 'and fear'	17	1.36	4.12181
і страх 'and fear'	35	2.8	5.91398	страх перед 'fear of'	15	1.2	3.87291
страх і 'fear and'	27	2.16	5.19340	ні страх/страхи 'not fear/fears'	12	0.96	3.46396
й страх 'and fear'	19	1.52	4.35709	без страху 'without fear'	10	0.8	3.16220
страх й 'fear and'	18	1.44	4.24079	зі страху/страхом 'out of fear'	7	0.56	2.64572
без страху 'without fear'	16	1.28	3.99987	страх й 'fear and'	7	0.56	2.64469
страх за 'fear for'	15	1.2	3.87205	страх на 'fear of'	7	0.56	2.64466
страх на 'fear of'	11	0.89	3.31359	свій страх 'one's own fear'	7	0.56	2.64520

Figure 1

High-frequency collocations with *FEAR* 'СТРАХ' in RISC and PZSC

It can be observed that the most frequent collocations correspond to high-frequency constructs, as indicated by the T-score. The obtained data manifest that the most frequent collocations with *FEAR* 'СТРАХ' are the models with functional words such as prepositions and conjunctions. Comparative study of co-occurrences with functional words indicates that in RISC and PZSC the most frequent ones are *страх перед* 'fear of' (RISC 94/7.52; PZSC 15/1.2), *від страху* 'out of fear' (RISC 58/4.64; PZSC 20/1.6), *і страх* 'and fear' (RISC 35/2.8; PZSC 17/1.36), *страх і* 'fear and' (RISC 27/2.16; PZSC 26/2.08). Collocations *ні страх/страхи* 'not fear/fears', *од страху* 'out of fear', *з страху/страхів* 'out of fear/fears', *під страхом* 'under fear', *для страху* 'for fear', *страх в* 'fear in', *аж страх* 'even fear' are among the high-frequency ones in PZSC, meanwhile collocations *із страху/страхом* 'out of fear/with fear', *у страху* 'in fear', *страх у* 'fear in', *не страх* 'not fear', *бо страх* 'because fear', *за страх* 'for fear', *в страху* 'in fear' are highly frequent in RISC. The t-test of frequency of collocations with *FEAR* 'СТРАХ' in RISC and PZSC is within the range from 2.4 to 7.5 in the zone of determinacy, namely is as idiolect markers.

Possessive pronoun *свій* 'one's own', adjectives *Божий* 'of God', *власний* 'one's own', *вічний* 'eternal' are high-frequency collocates for both sub-corpora, however, in RISC their frequency is higher than in PZSC (*свій страх* 'one's own fear'– RISC 9/0.72; PZSC 7/0.56; *страх Божий* 'fear of God' – RISC 6/0.48; PZSC 4/0.32; *власний страх* 'one's own fear' RISC 6/0.48; PZSC 3/0.24; *вічний страх* 'eternal fear' RISC 5/0.4; PZSC 3/0.24). The collocations *бути страх* 'to be fear', *панічний страх* 'panic fear', *липкий страх* 'sticky fear', *із страху/страхом* 'out of fear/with fear', *у страху* 'in fear', *страх у* 'fear in', *почуття страху* 'the feeling of fear', *бо страх* 'because fear', *за страх* 'for fear', *в страху* 'in fear', *мана страху* 'the lure of fear' are retrieved only from RISC, meanwhile the collocations *од страху* 'out of fear', *той страх* 'that fear', *з страху/страхів* 'out of fear/fears', *наганяти страх* 'to instill fear', *під страхом* 'under fear', *для страху* 'for fear', *страх в* 'fear in',

страх брав 'it was getting scary', *аж страх* 'even fear', *знати страх* 'to know what it is like to be afraid' are found in PZSC, which determines the specificity of the writers' idiolect.

A crucial phase of this research is to classify collocations which verbalize the emotional state of *FEAR* 'СТРАХ' and single out its typical structural models.

Upon closer examination, it was discovered that models with functional words **Prep + N / N + Prep** and **Conj + N/ N + Conj** are the most frequent in both sub-corpora.

The study of the model with prepositions shows that the frequency of collocations *страх перед* 'fear of', *зі страхом/зі страху* 'out of fear', *від страху* 'out fear of' is much higher in RISC than in PZSC (84%, 90%, 66% respectively). The t-test of their frequency in RISC and PZSC is within the range from 4.25 to 7.55 in the zone of determinacy and indicates that they are idiolect markers. The model with coordinative conjunctions is highly frequent too in RISC and PZSC, meanwhile the t-test for the collocation *і страх* 'and fear' is 2.41, in the zone of determinacy.

The collocations *у страху* 'in fear', *у страсі* 'in fear', *із страхом* 'with fear', *на страх* 'on fear', *між страхом* 'between fear', *до страху* 'to fear', *страх серед* 'fear among', *страх крізь* 'fear through', *із страхом* 'with fear', *серед страху* 'amidst fear', *перед страхом* 'facing fear', *завдяки страху* 'due to fear' are not found in PZSC. Collocations such as *од страху* 'out of fear', *з страхом* 'with fear', *з страху* 'out of fear', *для страху* 'for fear', *із страхом* 'with fear', *серед страху* 'amidst fear', *перед страхом* 'facing fear', *завдяки страху* 'due to fear', *со страхом* 'with fear' are found only in PZSC.

The model **Prep + N / N + Prep** is the most frequent one in both RISC and PZSC. Within this structure there are collocations with the semantics of cause, locus, and mode of action.

Collocations *з (зі, із) страху* 'in a state of excitement, anxiety, restlessness', *з (зі, із) страхом* 'with a feeling of excitement, anxiety, restlessness', *на страх* 'for someone's fear', *для страху* 'to frighten, frighten someone' found in RISC and PZSC are commonly used in Ukrainian language (DUM). Unlike in RISC, the idioms *на свій страх і риск* and *на власний страх і риск*, which mean 'at your own risk', are present in PZSC.

In RISC, the total frequency of collocations with coordinative conjunctions and *FEAR* 'СТРАХ' is 45/3.6. Among these co-occurrences another emotion component is nomination of negative emotional states (*непевність* 'uncertainty', *сумнів* 'doubt', *туск* 'sorrow', *поштивість* 'politeness', *подив* 'wonder', *втома* 'fatigue', *біль* 'pain', *приреченість* 'impending doom', *непевність* 'uncertainty', *безпорадність* 'helplessness', *обридження* 'disgust', *зневіра* 'despondency', *горе* 'grief', *задума* 'contemplation', *рабство* 'slavery', *спокуса* 'temptation', *приниження* 'humiliation', *вагання* 'hesitation', *безвихідність* 'hopelessness', *божевілля* 'madness', *недовір'я* 'mistrust', *жура* 'sorrow', *запобігливість* 'kindness', *байдужість* 'indifference', *перевтома* 'exhaustion', *принука* 'compulsion') with the total frequency of 32/2.56 or nomination of positive emotional states (*співчуття* 'compassion', *надія* 'hope', *бажання* 'desire', *совість* 'conscience', *обережність*

'caution', *диво* 'miracle', *цікавість* 'curiosity', *полегша* 'relief', *здивування* 'astonishment') with the total frequency of 13/1.04.

Meanwhile, in PZSC, the collocations with coordinating conjunctions and the total frequency of 45/3.6 have been identified including negative emotional component (*риск* 'risk', *непевність* 'uncertainty', *жах* 'horror', *неприємності* 'trouble', *малодушність* 'cowardice', *приниження* 'humiliation', *розгубленість* 'confusion', *дурість* 'stupidity', *розпач* 'despair', *напруження* 'tension', *холод* 'cold', *лють* 'rage', *загроза* 'threat', *колотнеча* 'strife', *нерішучість* 'indecision', *ненависть* 'hatred', *небезпека* 'danger', *страждання* 'suffering', *переляк* 'fright', *брехня* 'lie', *сум'яття* 'embarrassment', *жалість* 'pity', *смерть* 'death', *горе* 'grief', *розпука* 'despair', *нещастя* 'unhappiness', *терзання* 'torment', *трепет* 'tremor', *відраза* 'disgust', *розчарування* 'disappointment', *ненависть* 'hatred') with the total frequency of 34/2.72 and positive emotional component (надія 'hope', диво 'miracle', захват 'excitement', подив 'wonder', щастя 'happiness', несподіванка 'surprise', захват 'excitement') with the total frequency of 11/0.88. In PZSC, the frequent emotional components in collocation with coordinative conjunctions and the word *FEAR* 'СТРАХ' are *надія* 'hope', 3/0,24; *непевність* 'uncertainty', *жах* 'horror', *риск* 'risk' 2/0,16.

In the model **Conj + N / N + Conj**, R. Ivanychuk and P. Zahrebelnyi mostly use negative emotions as collocates since the frequent common words among them are *надія* 'hope' and *непевність* 'uncertainty'. In addition, the emotional components in the model with the conjunction *приреченість* 'impending doom' and *обережність* 'caution' are exclusively present in RISC, whereas *жах* 'horror' and *риск* 'risk' are solely found in PZSC. The study of emotions as the second component in the model **Conj + N / N + Conj** typically shows the tendency of words to denote negative emotions (RISC 59%, PZSC 68%) rather than positive ones (RISC 41%, PZSC 32%).

The emotional state of *FEAR* 'СТРАХ' is studied with adjectival attributes in the model **Adj + N / N + Adj**. In both RISC and PZSC, the most frequent attributes are *Божий* 'of God', *власний* 'one's own', and *вічний* 'eternal', however, in RISC, their frequency is by 34-60% higher respectively. The t-test of frequency of these collocations with FEAR 'СТРАХ' in both RISC and PZSC is within the range from 0.9 to 1.3, i.e. in the zone of indeterminacy and, therefore, they cannot be considered as idiolect markers.

In RISC, 59 varoius adjectives with the total frequency of 120/9.52 have been identified: *панічний* 'panicky', *липкий* 'sticky' *8/0.64*; *власний* 'one's own', *божий* 'of God' 6/0.48; *вічний* 'eternal' 5/0.4; *моторошний* 'eerie' 4/0.32; *справжній* 'real', *смертельний* 'deadly', *постійний* 'permanent', *ниций* 'vile', *липучий* 'sticky', *давній* 'ancient', *божевільний* 'mad', *великий* 'great' 3/0.24; *тяжкий* 'heavy', *трепетний* 'trembling', *тваринний* 'animal', *судомний* 'convulsive', *побожний* 'pious', *містичний* 'mystical', *забобонний* 'superstitious', *давкий* 'oppressive', *всемогутній* 'omnipotent', *несусвітній* 'devoid of common sense' 2/0.16 and 35 attributes to the word *FEAR* 'СТРАХ' with the total frequency of 1/0.08.

In PZSC, 26 various attributes have been identified with the total frequency of 33/2.64: *божий* 'of God' 4/0.32; *власний* 'one's own' 3/0.24; *неземний* 'unearthly',

вічний 'eternal' 2/0.16 and 22 other attributes to the word *FEAR* 'СТРАХ' with the total frequency of 1/0.08.

Hence, the adjectives *панічний* 'panicky' and *липкий* 'sticky' are the most commonly utilized attributive modifiers to describe the noun *FEAR* 'СТРАХ' in RISC, whereas in PZSC, it is *Божий* 'of God' that is most commonly used as an attribute.

The common attributes in both sub-corpora are: *Божий* 'of God' (RISC 6/0.48, PZSC 4/0.32), *власний* 'one's own' (RISC 6/0.48, PZSC 3/0.24), *вічний* 'eternal' (RISC 5/0.4, PZSC 2/0.16), *великий* 'great' (RISC 3/0.24, PZSC 1/0.08), *постійний* 'permanent' (RISC 3/0.24, PZSC 1/0.08), and *темний* 'dark' (RISC 1/0.08, PZSC 1/0.08).

R. Ivanychuk often associates FEAR with adjectives *липкий* (8/0.64) and *липучий* (3/0.24) both of which mean 'sticky'. Their collocations exhibit a high frequency in RISC. Furthermore, various attributes denoting size and strength are found in RISC. They include *великий* 'great', *всемогутній* 'omnipotent', *незмірний* 'immeasurable', *надмірний* 'excessive', *навальний* 'massive', and *всесильний* 'almighty'. Whereas, in PZSC, these are *вселенський* 'omnipresent' and *великий* 'great'. Hence, the adjective *Божий* 'of God' is common and frequently employed by both writers. The obtained results indicate that the diversity of attributes of the emotional nomination *FEAR* 'СТРАХ' and their frequency in RISC are higher than in PZSC (the diversity of attributes in RISC is 57% higher and the total frequency is 72% higher).

To verbalize the emotion *FEAR* 'СТРАХ' the models with the verb are used. In RISC, the highly frequent collocations of the model **V+ Prep + N** are *тремтіти від страху* 'to tremble with fear' 6/0.48; *звільнитися від страху* 'to get rid of fear' 3/0.24; *повеліти під страхом* 'to command under fear', *завмирати зі страху* 'to freeze with fear' 2/0.16; in PZSC, these include *сказати без страху* 'to say without fear' and *здригатися од страху* 'shake because of fear' 2/0.16. Therefore, in RISC the diversity of collocations in this model is 46 and the total frequency is 55/4.4; in PZSC, the diversity is 11, the total frequency is 13/1.04.

The list of collocations with a verb and a preposition (with the absolute frequency of 1) includes 42 word combinations and they predominate in RISC.

R. Ivanychuk uses collocations *тремтіти від страху*, *тремтіти зі страху*, *тремтіти в страху*, *ціпеніти зі страху*, *заціпеніти зі страху*, *затремтіти від страху*, *заніміти у страху*, *заніміти від страху*, *залебедіти до страху* with the meaning 'to shake with fear or cold' (FEAR = low temperature) and *умлівати зі страху*, *мліти зі страху*, *мліти від страху*, *примліти від страху* 'to languish from pain, deep experiences or from high temperature' (FEAR = high temperature).

It should be mentioned that the model **V + N / N + V** is the most productive in the texts under study (RISC: the diversity is 108, the total frequency is 144/11.5; PZSC: the diversity is 36, the total frequency is 47/3.76). In RISC, the high-frequency collocations are |*бути*| *страх* '|to be| fear' 9/0.72; *позбутися страху* 'to get rid of fear' 5/0.4; *діймає страх* 'fear is bothering you' 4/0.32; *долає страх* 'fear is taking control of one's thoughts, emotions, and actions', *відчути страх* 'to feel fear' 3/0.24; *проймає страх* 'fear is embracing', *посіяти страх* 'to sow fear', *подолати страх* 'to overcome fear', *переміг страх* 'being completely consumed by fear', *перемагати*

страх 'to overcome fear', *перебороти страх* 'to conquer one's fear', *огортає страх* 'to grow fearful', *морозив страх* 'to be frozen with fear', *добирається страх* 'to be getting anxious', *викликати страх* 'to cause fear', *піддатися страхові* 'to succumb to fear', *страх пропав* 'fear is gone', *страх почав* 'fear began', *страх породжує* 'fear creates', *страх був* 'fear was', *страх покинув* 'fear left', and *страх добирався* 'fear slowly and stealthily made its way towards someone' 2/0.16. As far as PZSC is concerned, they include *наганяти страх* 'to instill fear' 4/0.32; *знати страх* 'to know what it is like to be afraid', *аж страх брав* 'one was beginning to feel afraid or anxious' 3/0.24; *вселяти страх* 'to instill fear', |*бути*| *страх* '|to be| fear', *страх опанував* 'to be completely dominated by fear', *страх обіймав* 'fear was embracing' 2/0.16. A vast number of collocations with the absolute frequency 1 are found in both sub-corpora (there are 85 collocations in RISC, and 29 collocations in PZSC).

In RISC, the diversity and the total frequency of the models **V+ Prep + N / V + N / N + V** is much higher than in PZSC, i.e. in RISC, the most frequent collocations (frequency is > 0.3) are |*бути*| *страх* '|to be| fear', *тремтіти від страху* 'to tremble with fear', *позбутися страху* 'to get rid of fear', *діймає страх* 'fear is bothering you', in PZSC it is *наганяти страх* 'to instill fear'. In RISC, there is a high frequency of collocations conveying the meaning 'to be afraid to do smth', whereas in PZSC such collocations are less common: *страх втратити* 'fear to lose', *страх признатися* 'fear to admit', *страх попасти* 'fear to get into', *страх признатися* 'fear to admit', *страх втратити* 'fear to lose', *страх слухати* 'fear to listen to, *страх набрести* 'fear of finding'.

In both RISC and PZSC, several commonly used idioms, which are included in explanatory and phraseological dictionaries, have been identified: *під страхом кари* 'under the fear of punishment', *наганяти страх* 'to instill fear', *охоплює страх* 'to grow fearful', *огортає страх* 'to grow fearful', *наводити страх* 'to strike fear into' (RISC, PZSC); *тримати в страху* 'to keep in fear', *навести страх* 'to strike fear into', *проймає страх (страх пройняв, пройняв страх)* 'to be filled with fear', *огорнув страх (страх огорнув)* 'to be overwhelmed with fear', *опанував страх* 'fear has taken hold of somebody', *охопив страх (страх охопив)* 'to be filled with fear', *насувався страх* 'fear was looming', *страх опанував* 'fear has taken hold of somebody', *страх напав* 'to be suddenly overcome with fear', *страх діймав* 'fear was bothering you', *страх наповзає* 'fear is reaching', *страх добирався* 'fear was creeping', *наганяти страх* 'to instill fear' (RISC); *знати страх* 'to know what it is like to be afraid', *аж страх брав* 'one was beginning to feel afraid or anxious' (DUL-9: 753).

The study enabled the demonstration of the passive voice constructions as instances of the **V + N** model where FEAR is the subject of an action (*гнаний страхом* 'driven by fear' 2/0.16 and 12 collocations with the frequency of 1/0.08 in RISC; 5 collocations with the frequency of 1/0.08 in PZSC) and constructions with either gerund or participle (9 collocations in RISC and 1 collocation in PZSC with the frequency of 1/0.08) used as an attribute to FEAR.

The emotional state of *FEAR* 'СТРАХ' is observed in the model **N + N**: RISC. The diversity is 49, the total frequency is 69. Whereas, in PZSC, the diversity is 8, the

total frequency is 9. The following collocations are high in frequency in RISC: *почуття страху* 'the feeling of fear' 7/0.56; *тінь страху* 'a shadow of fear', *мана страху* 'the lure of fear' 5/0.4; *страх посади* 'fear of office', *страх нагороди* 'fear of reward', *луда страху* 'the delusion of fear', *хвиля страху* 'a wave of fear', *сила страху* 'power of fear', *марність страху* 'the futility of fear' 2/0.16. Whereas, only *страх смерті* 'fear of death' 2/0.16 has been found in PZSC.

The obtained data indicate that the most frequent collocations (frequency is > 0.3) are *почуття страху* 'the feeling of fear', *тінь страху* 'a shadow of fear', and *мана страху* 'the lure of fear'. They are found in RISC. The collocations *страх смерті* 'fear of death', *страх кари* 'fear of punishment' are common in both sub-corpora and their frequency correlates. A list of collocations with *FEAR* 'СТРАХ' with the frequency of 1/0.08 contains 41 collocations in RISC and 7 collocations in PZSC.

A number of somatic components have been identified in the collocations with the word *FEAR* 'СТРАХ':

RISC (the total frequency of 23/1.84): ***обличчя** блідотою пойняв страх* 'one's face turned pale with fear', *побачив страх на **обличчі*** 'one saw fear on one's face', *витліле від страху **обличчя*** 'one's face was gaunt with fear', *спотворені страхом **обличчя*** 'faces distorted by fear', *вкрите цинковою сніддю страху **обличчя*** 'a face covered with zinc scum of fear', *луда страху на **обличчі*** 'the delusion of fear on one's face', *побілі від страху **очі*** 'eyes white with fear', *зі страху заплющити **очі*** 'to close one's eyes from fear', *заплющити від страху **очі*** 'to close one's eyes from fear', *побілілі від страху **очі*** 'eyes white with fear', *змаргана страхом **душа*** 'a soul stricken with fear', *не пущу більше страху в свою **душу*** 'I won't let fear enter my soul anymore', *страх незримо проникав у **душі** людей* 'fear invisibly penetrated people's souls', *сповзли з його вразливої **душі** сліди страху* 'traces of fear slipped away from his vulnerable soul', *страх зморозив **тіло*** 'fear froze the body', *страх морозив **тіло*** 'fear froze the body', ***груди** на кулі виставляв без страху* 'he faced danger without fear', *від страху **серце в грудях** запалося так глибоко* 'one's heart sank with fear', *прибрати до **рук** страхом* 'to gain control by instilling fear', *крик страху застряг йому в **горлі*** 'the cry of fear stuck in his throat', *позбутися страху перед **кров'ю*** 'to overcome the fear of blood', *від страху м'якнуть **кості*** 'one's bones go soft with fear' (meaning to be completely overcome with fear, to the point of losing one's strength and feeling physically weak), *від страху з'їжилося на **голові** волосся* 'one's hair stood on end with fear';

PZSC (the total frequency of 4/0.32): *від страху заплющити **очі*** 'to close your eyes from fear', *заплющити **очі** від страху* 'to close your eyes from fear', *для страху рубали **руки** й **ноги*** 'for fear they cut off hands and feet' (this expression implies that someone may take extreme actions or make significant sacrifices out of fear or anxiety), *страх наповнював **душу*** 'the soul was filled with fear'.

Thus, the component that is most frequently utilized in somatic collocations by R. Ivanychuk is ***face***, while for P. Zahrebelniy, it is ***eyes***. However, in RISC, the diversity of collocations of this type is much higher than in PZSC.

In the study, the statistical association measures MI-score and T-score are taken into consideration. The values of statistical association measure T-score correlate with

the value of frequency of the units under study. Meanwhile, the statistical association measure MI-score let us identify the distinguishing features of the collocations in question, as well as their uniqueness in the texts.

Collocations extracted by MI-score are the low-frequency collocations which, in their turn, are individual set phrases reflecting the author's idiolect and can serve as an indicator of the writer's text attribution (see the list of 10 collocations with the highest indicators of MI-score in table 3 below).

Table 3

**Collocations with *FEAR* 'СТРАХ' extracted
by means of MI-score from RISC and PZSC**

RISC				PZSC			
Collocation	**AF**	**RF**	**MI-score**	**Collocation**	**AF**	**RF**	**MI-score**
несусвітенний страх 'unfounded fear'	1	0.08	21.22344	переборений страх 'conquered fear'	1	0.08	22.67536
судомний страх 'convulsive fear'	2	0.16	21.22344	наганяти страх 'to instill fear'	4	0.32	21.09040
містичний страх 'mystical fear'	2	0.16	20.63848	наглий страх 'audacious fear'	1	0.08	21.09040
трепетний страх 'anxious trembling'	2	0.16	20.63848	переоповідання страхів 'retelling one's fears'	1	0.08	21.09040
панічний страх 'panic fear'	8	0.64	20.52300	спаралізований страхом 'paralyzed by fear'	1	0.08	21.09040
ін'єкція страху 'an injection of fear'	1	0.08	20.22344	лічити страх 'to evaluate and assess one's fears'	1	0.08	21.09040
леп страху 'a grip of fear'	1	0.08	20.22344	вселяти страх 'to instill fear'	2	0.16	20.50543
морозити страхом 'to freeze with fear'	2	0.16	20.22344	неквапливий страх 'slow or gradual fear'	1	0.08	19.67536
об'єднаний страхом 'united by fear'	2	0.16	20.22344	наїстися страху 'to be scared out of one's wits'	1	0.08	19.50543
підсилюватися страхом 'to be strengthened by fear'	1	0.08	20.22344	вселенський страх 'omnipresent fear'	1	0.08	19.09040

Collocations in the table 3 were checked by means of GRAK and in search engine Google for their singularity. So, modeling the writers' texts, the applied corpus-based approach, and the obtained statistical characteristics enabled us to identify author-individual collocations (not found in the whole text corpus of GRAC or through the utilization of the Google search engine):

• R. Ivanychuk: *несусвітенний страх* 'unfounded fear', *затінювався страх* 'fear became overshadowed', *зацьковний страхом* 'haunted by fear', *страх верховод* 'fear takes the lead', *страх зцупив* 'fear squeezed', *страх забутості* 'fear of oblivion', *страх засіявся* 'fear has taken root', *цнотливий страх* 'reverential fear' (implying a deep admiration for the object of fear), *показний страх* 'pretentious fear', *залебедіти до страху* 'to cower in fear' (suggesting that fear has taken such a strong hold on a person that they are trying to make themselves as small as possible to avoid danger or harm), *злагіднює страх* 'fear is decreasing', *затінювався страх* 'shadowed fear', *вдирався страх* 'fear was creeping in', *страх засичав* 'fear was hissing', *страх валив* 'fear was overwhelming', *страх зцупив* 'fear squeezed', *мана страху* 'the lure of fear', *луда страху* 'the delusion of fear', *марність страху* 'the futility of fear', *від страху совісті* 'for fear of one's conscience', *страх забутості* 'fear of oblivion', *содом страху* 'the Sodom of fear' (meaning a place or situation characterized by overwhelming fear), *пліснява страху* 'the mold of fear' (meaning fear that gradually eats away at someone), *попруги страху* 'the reins of fear' (meaning the control or power that fear has over someone), *орда страху* 'the horde of fear' (meaning a large, overwhelming group of fears), *сукровиця страху* 'the serum of fear' (meaning something that feeds or nourishes fear);

• P. Zahrebelniy: *лічити страх* 'to evaluate and assess one's fears', *неквапливий страх* 'slow fear', *страх безплотний* 'disembodied fear' (meaning that fear can exist as a feeling without any tangible cause or source), *страх зв'язує* 'fear binds' (meaning that fear can hold a person back and limit their actions or choices), *скімлити од страху* 'whimper with fear' (conveying a sense of extreme fear that causes someone to make involuntary, whimpering sounds), *переповідання страху* 'retelling one's fear'.

The study of the emotion nomination of *FEAR* 'СТРАХ' and its verbalization based on collocations in R. Ivanychuk's and P. Zahrebelniy's historical fiction has enabled the identification, depiction, and examination of shared and unique characteristics in their texts and, in turn, identify their idiolect markers for further author identification.

Conclusions and perspectives of the study. In this research, the writer's language is studied from the point of view of lexicon by means of text corpus, statistical parameters, and modeling that make it possible to identify markers of idiolect of the studied authors. The statistical analysis of R. Ivanychuk's and P. Zahrebelnyi's texts made it possible to conduct a comprehensive analysis of the writers' lexicon. Language personality is related to the author's selection of vocabulary for transmitting a certain fragment which reflects their individual worldview.

The primary focus is directed towards the most commonly experienced emotional state of *FEAR* 'СТРАХ' in RISC and PZSC. The study has shown that the frequency of this lemma is 63% higher in RISC than in PZSC. The collocations with the node *FEAR* 'СТРАХ' have been analyzed and typical models of expressing the studied emotion have been presented.

The obtained list of collocations has been classified based on the part of speech to which the collocates belong. As a result, the following typical models have been

singled out: Prep + N / N + Prep, Conj + N/ N + Conj, Adj + N / N + Adj, V+ Prep + N / V + N / N + V, N +N.

The study of typical models with respect to the emotional state of *FEAR* 'СТРАХ' in RISC and PZSC has enabled identification of commonly used idioms and metaphors, as well as tracking somatic components within the collocations. The data point to the fact that *face* is the most frequent body part in the collocations in RISC, and the components such as *eyes, soul, body, chest, heart, hand, throat, bones, head* have also been revealed. In PZSC, the most frequent somatic component is *eyes*; body parts such as *hand, leg, soul* can also be found.

Collocations with the word *FEAR* 'СТРАХ' possess common and distinctive features. The identified models contain collocations that are not present in one of the studied texts. Furthermore, the dominant distinguishing features that define the unique language personality prevail. In addition, a significant number of author-specific collocations (26 collocations in RISC and 6 collocations in PZSC) have been identified through the use of MI-score and corpus-based methodology.

The diversity and the total frequency of the collocations with the word *FEAR* 'СТРАХ' is higher in RISC than in PZSC. The results of the study can be applied when compiling R. Ivanychuk's and P. Zahrebelnyi's collocation dictionaries of text identification and further research of the writer's language as well. Statistical characteristics of the vocabulary display frequency patterns of idiolect, which allows the automatic text processing and further text attribution. This type of study is not only applicable for investigating idiolects, but can also provide data for stylometric and associative network analyses, as well as for research in the field of literature.

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STATISTICAL PROFILE OF THE EMOTIONAL STATE FEAR (СТРАХ) IN R. IVANYTCHUK'S AND P. ZAHREBELNYI'S TEXTS

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Abstract

Background: The paper presents the statistical study of R. Ivanychuk's and P. Zahrebelnyi's historical novels. The study of authors' texts and lexicon reflect the peculiarities of their idiolects. The verbalization of emotions is valuable information to illustrate preferences and literary taste of the studied language personalities.

Purpose: The goal of this study is to present the statistical profile the emotional nomination FEAR (СТРАХ) of writers' texts to illustrate idiolect features.

Results: The emotional nomination FEAR, one of basic emotions, as well as its verbalization through collocations provided valuable information about the idiolect of studied language personalities, and, in turn, served as markers of R. Ivanychuk's and P. Zahrebelnyi's idiolects. The obtained list of collocations was classified according to part of speech of collocates with the node FEAR (СТРАХ). The investigation of typical models with the emotional state FEAR enabled to extract general language idioms, metaphors and track somatic components within the collocations. In addition, MI-score and corpus-based approach applied in the paper enabled to reveal a great number of author-individual collocations.

Discussion: The practical results of the study can be applied for the compiling of collocation dictionary of the author for text identification and further research of the writer's language as well. Statistical characteristics of the vocabulary display frequency patterns of the idiolect, which allows the automatic text processing and the further text attribution.

Keywords: idiolect, language personality, collocation, model, emotional state.

Vitae

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