REVIEW

War-Related Collocations of Expressing a Negative Connotation in War Language: Corpus-Oriented and Lingvosynergetic Approach

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ABSTRACT

The scientific work is dedicated to the analysis of war-related collocations as a phenomenon of transdisciplinary nature and the mechanisms of their conceptualization in wartime communication. In our study, the axiological framework consists of epistemological and anthropocentric approaches, along with the principle of fractality. The application of a corpus-driven approach into the non-fictional text analysis using Orange software, aids in performing various tasks within the corpus: extracting keywords (one component war-related collocations) with a negative connotation; analyzing war-related collocations that affect the phase trajectory of the language system; determining the relationship between two random variables *policy* and *resilience* for understanding author's view on events, based on the testimony of eyewitnesses, military experts and political analysts. The corpus-driven approach is focused on establishing the hierarchy of war-related collocations that define the content and scope of the concept of the Russian-Ukrainian war and reveal the linguopolitical synergy of the socio-political space, language space, and war linguistics within the military-political framework. Additionally, the software Cortical.io provides a wide range of war-related collocations – used in the discourse of wartime communication. As a result of lingvosynergetic approach, self-oscillations arose in the dissipative system. In accordance with the outcome, the performativity of collocations lies in the fact that they not only describe but also actively shape reality through language, and in this process, they reveal new communicative paradigms during wartime. A corpus-driven and linguosynergetic approaches enabled us to identify the motives of war in non-fictional texts.

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1. Introduction

During the Russian-Ukrainian war, there has been a global reformatting of the communication process with the emergence of new communicative goals and strategies. The impact of war-related collocations on the consciousness of recipients on a global scale has not yet been the subject of a separate study. Being at the epicenter of events and deeply immersed in constant monitoring of war news, Ukrainian scholars introspectively observe the emergence of new communicative trends and an intense change in the frequency of war-related collocations. To obtain verified scientific results on new trends in wartime communication, we propose to apply corpus analysis to non-fiction texts about the war and to use a synergistic scientific paradigm for visualizing it in the form of fractal diagrams. Modern war discourse has already become the subject of study by some literary critics, among them N. Herasymenko, H. Kruk, O. Derkachova, T. Pastukh, Ya. Polishchuk, O. Pukhonska, I. Borysyuk, H. Gruber, U. Schmid, M. Beck, etc. Turning to the war language and literature, linguists study the functions of military-political terminology, highlight the principles of language stylization, and explore socio-political and cultural elements in artistic and documentary texts (V. Chaika, I. Mishchenko, M. Riabchenko, L. Guan, A. Dall'Agnol, E. Duarte).

Among the linguistic studies of the past three years, there has been a notable focus on the comprehensive examination of the linguo-pragmatic parameters of the language policy of Ukraine. According to B. Azhniuk, linguistic theory is employed to address tasks of a legal-linguistic nature. This idea the author represents in the monograph "Language and War: Dynamics of the Language System and Language Policy"[1]. The research highlights declarative crimes such as blackmail, threats, extortion, or offers of unlawful rewards, incitement of hostility based on ethnic, religious, racial, or other discriminatory grounds, and verbalizes concepts of language ideology, which serves as a regulator of linguistic behavior[1]. The scientific paradigm of public law in wartime conditions inspired us to address the verbal means of wartime communication, particularly, the texts of non-fictional discourse. It is well-known that literature is an open system that changes and every change is occurring in the mastery of depicting artistic images and in the metaphysics of the social state during the war[2]. Interestingly, the mode of war also influences the concept of genres in modern literature, as their mechanisms rapidly transform. The central variable is the symptomatic magnitude, which reveals usurped modifications in the priorities of Ukrainians over time. As I. Kropyvko suggests, poetry's position on the global scale is that the interpretation of current events of social life during wartime communication remains unchanged[3]. The complex meaning of the concepts such as occupation, torture, shelling, violence, and abduction is inherent in the nature of literary texts. The publication of anthologies dedicated to Russia's full-scale invasion of Ukraine expands the periphery of literature, where these concepts take center stage. The reflection of new components in non-fictional discourse is influenced by the hierarchy of non-fiction genres, which instantly respond to factual data. In the poetic structure of the non-fiction genre, war prose occupies a dominant position, followed by war memoirs.

The relevance of the proposed scientific research is determined by the orientation of modern linguistic studies towards the examination of linguistic phenomena in an interdisciplinary context, using a comprehensive methodology and developments from other fields, such as philosophy, corpus linguistics, and synergetics.

2. Literature Review

In corpus-analytical studies, the hypothesis that applied linguistics is developing quickly within the scientific platform of software tools predominates (A. Tymbay, S. Fitzmaurice, S. Mehl, P. Crosthwaite, S. Ningrum, M. Schweinberger, M. Boissonneault, P. Vogt, M. Joy, J. Sinclair, S. Sun, J. Sitthiworachart, J. López González, P. Kinnunen, V. Meisalo, L. Malmi).

The variety of software tools guarantees the efficacy and scientific validity of studies on war-related collocations from a linguistic standpoint. However, in practical research,

text corpora are the main tool[4]. These software tools enable the search for information by keywords or phrases, as well as the determination of statistical indicators, their parameters, and functional connections between words. The approach enables us to identify the linguistic features of input and output war language and detect the war-related collocations with negative connotations in various contexts.

The methodological representation of cognitive and visual programming instruments such as Orange and Cortical.io is characterized by their adaptability in processing substantial volumes of textual data. They facilitate the identification of the semantic and syntactic characteristics of war-related collocations that influence the phase trajectory of the linguistic system. Extensive empirical and theoretical investigations in corpus linguistics, as evidenced by the contributions of S. Hunston, T. McEnery, A. Hardie, P. Storjohann, G. Plappert, E. Tognini-Bonelli, M. Barlow, S. Gries, Ch. Butler, N. Dash, V. Wiegand, M. Hinton, and others, have profoundly shaped the development of the corpus-driven methodology. In this paper, the corpus-driven approach was also employed to demonstrate the methods of adaptation of military terminology in wartime communication, and to determine the mechanism of self-oscillation in war linguistics[5]. The theoretical understanding of the phenomenon of war-related collocations requires considering the specific context in which the actualization of verbal units is potentially possible. Official, journalistic, and non-fictional discourses delineate a wide range of linguistic means involved in the articulation of the analyzed phenomenon. The heuristic combination of philosophical approaches of epistemologism and anthropocentrism is necessary for developing the linguopolitical synergy of the socio-political space, language space, and war linguistics within the military-political framework. The postulate of the "inseparable unity of politics and ideology in Marxist theory" specifically prompted the appeal to the theoretical form of worldview[6].

3. Methodology

The analysis of war-related collocations as a construct of war linguistics was carried out in several stages. The first stage was *corpus-driven*. The algorithms applied in our work, such as Orange, to texts of non-fictional discourse, aid in performing various tasks within the corpus: cluster-ing texts into groups of documents (C1 – Overreach: The Inside of Putin's War Against Ukraine, C2 – The War Came to Us), identifying the frequency of specialized war-related collocations, and forming vector representations based on information value (Score). The system of tools for tokenization, vectorization, and text analysis transforms textual data into software modules for the representation of factual information. The content of the corpus facilitates the integration of collocations, leading to a resistant process of modeling linguistic phenomena, delineating the content of linguistic means according to the semantic structure of their components as presented in the language system. The regrouping of occasionalisms and commonly used vocabulary, resulting from the actualization of war-related collocations in context, shifts the focus of semantic dominance, bringing war-related collocations to the forefront, which, in the systemic meaning of war linguistics, are sense-forming. Thus, the corpus-driven approach is focused on establishing the hierarchy of war-related collocations that define the content and scope of the concept of the Russian-Ukrainian war and reveal the linguopolitical synergy of the socio-political space, language space, and war linguistics within the military-political framework of the non-fictional texts (see **Table 1**).

The extracted war-related collocations that are partially presented in **Table 1** reveals the important patterns in the war language. These linguistic means are markers of wartime communication. They illustrate the heuristic potential of war linguistics, particularly in its intersection with socio-political contexts. Essentially, collocations such as *air national guard, wire-guarded missile, airspace coordination order, civil affair, political manipulation, war crime, occupied territory, separatist rhetoric, chemical gas, missile strike, human rights violations,* etc. are linguistic tools that serve as mechanisms of institutional influence, reinforcing the legitimacy of actions and decisions on the geopolitical stage.

The war-related collocations in materials covering combat operations demonstrate that wartime communication influences the formation of productive interpersonal relations among the participants of the communicative act. The epistemological potential of war-related collocations in the verbal interaction between *author* and *hero* is determined by the intent of rethinking the concept of wartime communication, which lies at the core of the anthropocentric paradigm in non-literary studies.

Table 1. The application of corpus-driven approach into the non-fictional text analysis.

| C1 Overreach: The Inside of Putin's War Against Ukraine	Keyword	Collocate	Freq	Score	C2: The War Came to Us	Keyword	Collocate	Freq	Score
Chapter 1	guard	airnational	11	9.86	«Warning Signs Kyiv, early 2022»	order	airspace coordination	9	10.3
Chapter 2	missile	wire-guarded	10	8.6	«Who would like some tea?" Hostomel, northwest of Kyiv, late February 2022»	functions	emergency support	9	8.44
Chapter 1	projectile	rocket-assisted	7	8.53	«Heroes. On the Outskirts of Kyiv»	affair	civil	8	10.8
Chapter 1	complex	artillery radar	7	8.46	«Escape. Kyiv and Irpin, west of the capital, early March 2022»	brigade	marine amphibious	3	9.5
Chapter 1	officer	intelligence	4	7.4	«A Storm on the Horizon. Avdiivka, Mariinka and New York, eastern Ukraine, January–February 2022»	strategy	national defense	2	9.81

The second stage is ***analytical-intellectual.*** The software tools used for document processing are primarily designed to retransmit objective messages. Cortical.io is a program that provides intelligent natural language processing using artificial intelligence, ensuring consistent semantic and formal cohesion of texts. The tools of intelligent programming outline the wide range of linguistic means – war-related collocations – used in the discourse of wartime communication; project the mechanism for decoding war-related meanings; and illustrate the penetration of the researched issues into texts of various styles as a reservoir of verbalized knowledge. The distinctive features of wartime communication are represented by adjectives that specify the meaning of nouns or indicate their derivation. Verbal attributive collocations serve both descriptive and informational purposes, elucidating the meaning of the concepts in relation to their link with warfare. A multitude of phrase indicators indicate the formation of war-related vocabulary and utilize a syntactic approach for their construction. Their presence in non-fiction books targets both the descriptive capacity of their semantics and the condensation of extensive conceptual meanings. The series of techniques enabled the identification of significant terms in the non-fiction works "Overreach: The Inside of Putin's War Against Ukraine" and "The War Came to Us" (see **Figures 1** and **2**).

Figure 1. Extraction of keywords in the non-fictional texts "Overreach: The Inside of Putin's War Against Ukraine" and "The War Came to Us".

The third phase is ***philosophical-synergetic***. The essential principles of war linguistics, which underscore political, social, and cultural distinctions, provide as an ontological framework for the development of diverse conflict-related collocations. War linguistics has incorporated images and prototypes recognized as linguocultural patterns that are manifested and operate inside language, while simultaneously maintaining the archetypal meanings associated with war, heroism, and the impact on civilians. Similarly, epistemologism, as an examination of recent phenomena, has evolved into a distinct philosophy of modern cultural awareness, investigating methods of comprehending and interpreting the experience of war.
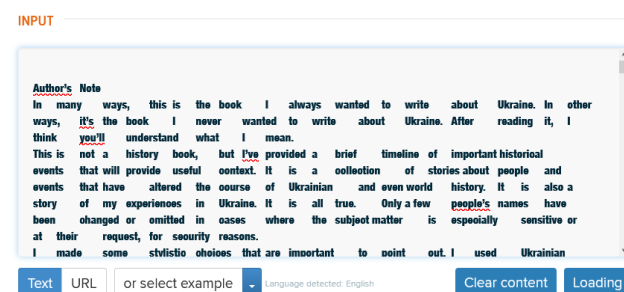
Figure 2. The fragment of the non-fictional text "The War Came to Us" in Cortical.io.

This philosophy is characterized by its emphasis on the mechanisms of constructing axiological knowledge regarding the Russian-Ukrainian war, particularly through language and discourse, and examines how this knowledge shapes the comprehension of the rationale behind Russia's military aggression against Ukraine. A significant aspect of synergetic research in war linguistics is a thorough methodology for text analysis, necessitated by the multifaceted nature of this complex phenomenon. War-related collocations constitute a fundamental element of this literary system, having a designated position within its structure and possessing distinct functional attributes.

4. Results

4.1. War-Related Collocation as an Epistemological Component of the Non-Fictional Text

War discourse is a catalyst for the formation of non-fiction text in a war-political framework. These texts highlight current events at the front, in occupied territories, and, fragmentary, in the rear, largely based on real events, blurring the line between fiction and reality.

The primary task of the constructive style is to structure our unstable world through pragmatically complete narrative poetry that emotionally conveys lived experiences, justice or guilt, war fatigue, future plans (or the lack thereof), and soldier's wages, while also studying reality-rooted prose that reflects real events [7]. This process employs a wide range of tools involved in articulating the analyzed phenomenon, aiming to establish a relevant impact on the human psyche, feelings, and thoughts through models of the non-literary continuum (war prose→non-literary text).

The metatextual peculiarity of non-fiction writings within a military-political context is characterized by the systematic examination of war discourse, which aligns with the epistemological analysis of wartime communication (author–text–reader), providing significant generalizations. The impact of social, political, historical, and cultural variables on the system depends on the aesthetic functions of intratextual communication, facilitates author-reader interaction, and ensures the qualitative language expression of information [8]. The inclusion of war-related collocations –epistemological components of the non-fiction text into the war linguistics architecture allows us to outline the contextual effect of the war.

The functional-semantic features of war-related collocations denote distinct semantic structures. For instance, large-scale invasion, tactical interaction, fire engagement, frozen conflict, cold war, tank gun, anti-aircraft artillery complex, combat vehicle, closed firing positions, defensive battle, reliable troop protection, firing points, missile weaponry, and command posts all reveal syntagmatic properties and fulfill an expressive function intended to convey a clear comprehension of military operations and their consequences.

Thus, non-literary texts dedicated to the war in Ukraine are primarily united by the unique figure of the author, who documents real events in a particular way and is capable of presenting war narratives to the reader.

4.2. War-Related Collocation as a Unit of Wartime Communication within the Anthropocentric Paradigm of the Non-Fictional Text

The structuralist and poststructuralist influence in non-literary works, combined with the intensified military focus in Ukrainian literature, have increased existential concerns and intensified the necessity to determine the role of communication in a changed reality. The communication reflects pain, suffering, death, deep disappointment in life, and lost childhood. Nevertheless, the central idea remains the fight for peace, freedom, and independence [9].

Centuries of experience and knowledge of the ethnic group regarding the phenomenon of war find their embodiment in war prose, as the literary concept of the hero (a serviceman of the Armed Forces of Ukraine) expands its influence on all fields of the humanities and social sciences. Scholars share the view that the author and reader become like-minded, and the processing and transmission of information form a dialogue – creating a unique communication that is especially relevant today.

The emphasis on communication concerns within literary studies indicates a fundamental cultural phenomenon and constitutes a core idea of warfare. It holds a significant position in the linguistic and philosophical perspective, simultaneously reinforcing its conceptual framework in factual texts and manifesting in literary works. Consequently, according to the principle of conventionalism, the justification for wartime communication within non-literary speech necessitates an integration of both textual-internal and external dimensions of the non-literary system through linguistic synergy. Wartime communication serves as the realization of the author's communicative strategy, in which the internal and external dimensions of the non-literary text reveal the horrors of war [10]. An analysis of war discourse reveals two types of communication: verbal and non-verbal. In communication theory and related disciplines, verbal communication takes a central role [11].

The concept of non-verbal communication was developed by scholars such as A. Vančura, P. Ekman, Paul, F. Wallace, L. Guerrero, F. Kory, R. Harrison, J. Holoka, and others. The development of non-verbal communication theory from the perspective of war linguistics is found in A. Vančura's work "Nonverbal Elements in War Poems across

Cultures: A Case Study of English and Croatian."

A. Vančura conducted considerable research on non-verbal communication, concentrating on culturally related representations of non-verbal behavior in poetry, specifically analyzing the prevalence of culturally referential non-verbal aspects in war poems composed during and after World War I[12]. A notable conclusion is that non-verbal components referring to culture and war are largely absent in poetry, despite these works being grounded in actual historical events. The researcher was expecting to find this element. As A. Vančura rightly asserts, poets are more focused on the universal language, which, together with traditional literary techniques (verse, word choice, figurative language, meter, form, etc.), creates a successful foundation for poetry to recreate the realities of war[12].

To deepen the understanding of wartime communication in non-literary texts, it is appropriate to study the speech behavior of the hero – a serviceman of the Armed Forces of Ukraine – and determine his communicative positions in various speech acts. The relationship between the author and the hero is determined by the intention to rethink the concept of communication, which lies at the center of the anthropocentric paradigm of literary studies. The anthropocentric paradigm of the non-literary text is an approach that focuses on the human as the central figure in the literary work[13]. The depiction of human experiences, thoughts, emotions, and actions in the structure of the war prose makes the person the main object of non-fiction discourse[14]. Given this, the synergetic strategy in understanding the concept of the anthropocentric paradigm of the non-literary text should encompass the concept of the *hero* in its various realizations and provide an ontological basis for establishing the determinants of the communicative situation in the text. The semantic dominance of syntactic constructions in the form of war-related collocations reflects the factors that influence the model of hero behavior. The determinants (indicators of traits, actions, thoughts, and words) in the character's image unify its semantic content. Therefore, in this study, we use war-related collocations with a clearly defined anthropocentric perspective.

The cultural and social conditioning of the phenomenon of the main character is determined by its formation in light of adaptation to a particular communicative situation. Based on the socio-cultural indicator, the communicative situations

in the factual material are divided into stages, and the determinants are identified. The first stage of the communicative situation reflects the selection of participants in wartime communication and involves the assimilation of determinants – social status, speech characteristics, and communicative roles in the act of communication. Structural elements are marking the second stage of the communicative situation and objectify the circumstances of communication. It includes patriotic, adaptive, situational, and forced communication, depending on the communicative situation[15]. The socio-cultural representation of the third stage of the communicative situation is characterized by communicative interaction – communicative goals, communicative tactics, and verbal realization of the communicative act. The preferred fourth stage of the communicative situation is the determination of the communication format. Condensed determinants sequentially demonstrate the verification component of the message in formal or informal communication. For example, in formal communication, civilians find it easier to express their emotions towards military personnel using extra- and paralinguistic means of communication, whereas in informal settings, we often observe a communication barrier, as civilians mean one thing but express another[16].

Empirical methods project the fifth stage of the communicative situation. The fundamental determinant is the axiological role of civilians and military personnel during wartime. Civilians in the rear "hold the country together", work, pay taxes so that Ukraine can function, donate to causes, and support the military and their families. The military fought for Ukraine at the cost of their lives and health. The final, sixth stage of the communicative situation is its success. The reflection of dominant effective, healthy, or unsuccessful communication demonstrates a deeper understanding of the key perceptions of war – pain, trauma, and tragedy. Effective communication ensures the success of the communicative act, driven by the adaptation of people to war and the acceptance of civilian life by the military. Unsuccessful communication experiences gradation, creating a chasm between civilians and military personnel. Soldiers have a heightened sense of justice, sharp reactions to civilian's adaptation to war, and often respond to civilian life with aggression. All of this is the result of the terrible experience that civilians are not always willing to accept[17]. So, meaning has become a psychomental fragment of collective

consciousness. The negative meaning in the context of war is conventionally fixed by a certain linguistic form, mostly in the form of war-related collocations.

In the present study we used the corpus-driven approach to extract keywords (one component war-related collocations) with negative connotations (see **Table 2**).

Table 2. Keyword list (partial data).

Rank	Keywords	TF-IΔF	Rank	Keywords	TF-IΔF
1	war	0.009	13	pressure	0.001
2	torture	0.009	14	enemy	0.004
3	casualties	0.008	15	army	0.004
4	fight	0.001	16	troops	0.002
5	violance	0.008	17	direction	0.000
6	attack	0.003	18	sanctions	0.002
7	losses	0.001	19	energy	0.004
8	target	0.000	20	oligarchs	0.006
9	territiries	0.000	21	economy	0.000
10	occupation	0.010	22	armored	0.001
11	pressure	0.000	23	border	0.001
12	seize	0.000	24	aircraft	0.001

Thus, the negative meaning in war linguistics is observed within the dyad "cognition – war language" within the limits of wartime communication.

4.3. The Principle of Fractality

In this research the manifestation of war-related collocations is based on the principle of fractality. This involves the study of the attractor (the most organized zone), fluctuation (random chaotic oscillations), bifurcation point (branching point, moment of choosing the next path), and dissipation (dispersion into the external environment), as well as the process of selecting the next path[18]. According to T. Dombrovan, fractality refers to the use of language and the construction of linguistic messages, and the verbalization of concepts and literary images from a diachronic perspective[19]. Fractality in linguistic synergy differs from a purely philosophical approach to text analysis, which is marked by worldview axiologicality, as it is understood as "the result of philosophizing, fixed in texts and discourse; lexicalized by philosophical concepts; terms denoting philosophical categories; structural-semantic features of philosophical texts and other material forms of philosophical reflection"[20].

It is known that language is a "temporal hierarchy, a coherent set of various atempospheres in which components of different scales coexist within the linguistic megasystem"[19]. Notably, the use of multicomponent models of words based on the fractal principle does not deprive the megasystem of a certain dependency on linguistic hierarchy[21]. In contemporary scientific works, fractal phenomena can be observed at several structures: in the conventional structure of official documents, where war-related collocations recur in various contexts, ensuring consistency in wartime communication; in the rhetorical structure of journalistic articles, where repetitions, parallelisms, and antitheses in the form of war-related collocations exemplify fractality; in the subject-predicate structure of small forms of folk poetic creativity (in poetry), where war-related collocations reflect conceptual links between the notions of *artistic image* and *artistic hero.* According to scholars (I. Biskub, E. Rozvod, V. Shulika), the positive significance of the fractality principle in the linguistic system aims to solve a number of contradictory problems related to the self-organization of an active and evolving system, determining consistency and coherence at various stages of constructing a model of a phenomenon, and maintaining the functional unity of syntactic structures[22]. From the perspective of fractality, the text is interpreted as a product of human speech activity that reflects reality through the recurrence of its verbal constructions. Fractality embodies a global idea, which becomes an explicit product of speech creation.

According to American researchers R. Voss, D. Krumwiede, and A. Lucas, a fractal generator has two groups of parameters: the parameters of the fractal's construction

and the parameters of the starting point from which the fractal's architecture begins [23]. In the field of war linguistics, fractality manifests in the creation of coherent war-related collocations. They are markers of wartime communication and reflect an active dominance in conveying strategic information. A linguistic construction encompassing one fractal, but changing the bifurcation point, equally divides space into zones of attractors, which draw elements with specific military attributes toward the denotative core – the narrative.

Based on the corpus-driven approach, we analyzed war-related collocations that affect the phase trajectory of the system. The quantitative analysis of the examined collocations was conducted on a dataset of 496,856 tokens, the results of which are shown in **Table 3**. The quantitative indicators of *defence policy* and *NATO's resilience* are illustrated using absolute and relative frequency.

The data presented above show that out of 224 war-related collocations, only 30 proved to be informationally significant modifiers. The overall frequency and information value of the first variable, which is *policy,* is Freq 1 – 132, Score 1 – 17.2%. The terminological phrase *defence policy* has the highest relative weight within the first variable, which proves the strongest semantic connection between this terminological system – national security and defense strategies. In this context, the term *defence policy* serves as a key concept for denoting coordinated actions in the field of protecting state interests, particularly in the face of external threats, and forms the foundation for developing military doctrines and tactical decisions. The second variable, *resilience,* illustrates a lower frequency and informational significance within the corpus, specifically Freq 2 – 92, Score 2 – 14.3%. Within this variable, the phrase *NATO's resilience* holds a dominant position, with Freq – 27, Score – 13.12%.

The immanent space of wartime communication in Ch. Miller's book "The War Came to Us" and O. Matthew's book "Overreach: The Inside of Putin's War Against Ukraine" are filled with war-related collocations that extrapolate the deep inner potential of expression, giving rise to the new anthropic values: righteousness of freedom, a free nation, a free life, faith in victory, peace and silence, people-titans, glory to the heroes, volunteers – angels of kindness, weapon to weapon.

The author uses war-related collocations *defence policy* and *NATO's resilience* in the chapter "The Battle of the Donbas: Donetsk and Southern Kharkiv Oblast, Summer 2022" to draw attention of the military alliance with Ukraine. To this end, Ch. Miller lists the ground artillery that Russia used in Mariupol against civilians: *"We saw infantry-fighting vehicles and battle tanks, Soviet-era multiple-launch rocket systems, including Grad, Smerch, and Uragan, as well as Tochka-U short-range ballistic missile systems and an S-300 long-range surface-to-air missile system"* [24].

The war language in Owen Matthews' book "Overreach: The Inside of Putin's War Against Ukraine" is aimed to reproduce the realities of the military conflict through the lens of political, social, and military discourses. It performs several key functions: informative, analytical, manipulative, and emotionally expressive. The author uses war-related collocations to document events, based on the testimony of eyewitnesses, military experts and political analysts. A typical example is a fragment of text: *"When the news broke that Russian troops had occupied the LDNR, Chernov had a hunch that Russian forces would try to take the eastern port city of Mariupol, a strategic prize because of its location on the Sea of Azov, and a key to the creation of a land bridge between Donbas and Russian-occupied Crimea"*[25]. In the context of military communication, war-related collocations (Russian troops, Russian forces, strategic prize, Russian-occupied Crimea) emphasize the peculiarities of Russian aggression, revealing the specifics of the Kremlin's rhetoric.

It should be noted that the noun *policy* occurs 113 times in the books "The War Came to Us" and "Overreach: The Inside of Putin's War Against Ukraine", within the following grammatical patterns: (verbs with policy as object, verbs with policy as subject, adjective predicates of policy, nouns modified by policy, modifiers of policy). Instead, the term *resilience* is represented in the corpus – 93 times in certain grammatical classes (verbs with resilience as object, verbs with resilience as subject, adjective predicates of resilience, nouns modified by resilience, modifiers of resilience).

The quantitative calculations were used to determine the relationship between two random variables *policy* and *resilience* (see **Table 4**).

As far as the obtained results indicate, a significant difference between the two variables can be observed. The high frequency of the lexeme *coherent* (Freq 1 – 7, Score 1 – 9.21%; Freq 2 – 2, Score 2 – 2.48%) suggests an associative relationship between *policy* and *resilience*, as coher-

Table 3. Quantitative analysis of the absolute and relative frequency of the collocations *defence policy* and *NATO's resilience*.

Keyword	Gramler	Collocate	Freq	Score	Keyword	Gramler	Collocate	Freq	Score
policy	modifiers of *x*	defence government economic official new national transparent	132 16 9 5 5 4 4 3	17.2 11.2 7.4 7.8 8.1 4.23 9.12 1.63	resilience	modifiers of *x*	NATO's remarkable technical army modern flexible additional proved	92 27 9 6 6 4 2 2 1	14.3 13.12 10.7 5.16 4.64 3.17 2.32 1.2 1.1
policy	nouns modified by *x*	authority department	64 9 4	19.4 5.6 7.3	resilience	nouns modified by *x*	power restriction	13 4 2	7.23 3.67 1.41
policy	verbs with *x* as object	formulate implement	110 9 6	25.11 15.10 10.11	resilience	verbs with *x* as object	indicate build increase	32 5 8 4	12.31 4.28 3.2 2.48
policy	verbs with *x* as subject	follow indicate make	27 7 4 2	16.2 9.43 5.25 2.15	resilience	verbs with *x* as subject	act generate resume	26 4 2 2	10.2 3.69 2.63 2.32

Table 4. Relationship between two random variables *policy* and *resilience*.

Random Variables	Freq1 Policy	Freq2 Resilience	Score1 Policy	Score2 Resilience
coherent	7	2	9.21	2.48
economic	5	0	6.11	-
energy	4	2	11.23	3.51
long-standing	6	0	5.32	-
stabilization	2	0	-	-
national	0	4	-	-

ent is used with both variables.

Contextual adjacency has also been identified in the case of *energy policy* and *energy resilience* (Freq 1 – 4, Score – 11.23%; Freq 2 – 2, Score – 3.51%).

The relationship between two random variables *policy* and *resilience* is important for understanding author's view on events, based on the testimony of eyewitnesses, military experts and political analysts.

The selection of expressive means within the military-political framework retranslates wartime communication in its broadest range – from the linguistic level (reflection of war-related collocations in non-fiction texts about the war) to the political level (the construction of a unique political metalanguage that influences the military-political space by emphasizing a distinctive speech code). In tandem, they create a linguopolitical synergy (see **Figure 3**).

War-related collocations in non-fiction texts about the war denote new concepts. They are reflected in the fractal mainstream and affect the phase portrait in supercritical and subcritical Hopf bifurcation (see **Figure 4**), which corresponds to the function.

$$\frac{dr}{dt} = r\left((\mu + i) + (a + i\beta)\,|r|^2\right) \quad (1)$$
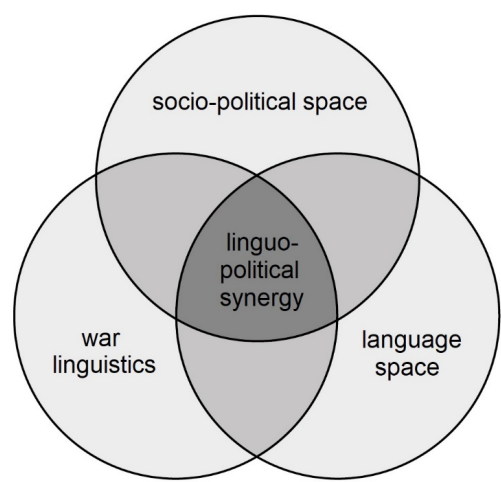

Figure 3. Linguopolitical synergy of the socio-political space, linguistic space, and war linguistics.
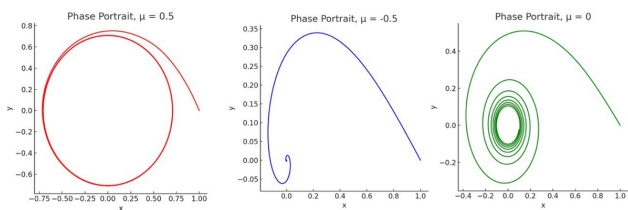
Figure 4. Phase Portrait of War-related collocations in Hopf Bifurcation. μ= –0.5 – a stable stationary point to which all trajectories are attracted. μ =0 – a Hopf bifurcation occurs; the system transitions from the stationary point to the emergence of a limit cycle. μ =0.5 – a stable limit cycle appears, showing periodic motion in the system.

These graphs illustrate how war-related collocations, specifically in tone, change the system's behavior from a calm to a tense state. The cognitive and informative functions of non-fiction novel serve as a catalyst for establishing new semantic connections between reality and the main characters. Such transformation also affects the subcritical Hopf bifurcation, where an unstable limit cycle emerges, causing unstable collocations to become stable, with a small attractor forming around them. In non-literary discourse, the process of analytical reflection on the military dimension of reality begins. It depends on the cycle's development. Nevertheless, the attractor can be limited for new war-related collocations. On the syntactic level, text fragments are primarily composed of homogeneous interrogative sentences, complicated by linguistic means, which overall forms a semantic trajectory. Factuality indicates a shift in focus from the scientific-functional concerns to documentation of wartime communication. The gravitation of war-related collocations toward other attractors reflects war as a multi-level, complex phenomenon, which cannot be described as a monolithic whole using unstable collocations. As a result of this interaction, self-oscillations arise in the dissipative system (see **Figure 5**).
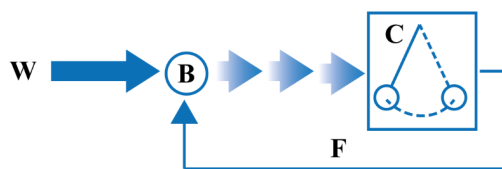
Figure 5. Mechanism of self-oscillations in war linguistics.

W – source of constant influence (Russia-Ukraine war);

B – nonlinear regulator of self-oscillations (positional battles);

C – oscillating element (war-related collocations);

F – negative feedback (shift in the focus of the readership).

In the integral structure of war-related collocations in the context of war linguistics, only its relevant part denoting war is focused, the other part becomes irrelevant. It means that war language is shaping public opinion and constructing consciousness under the influence of self-oscillations in a dissipative system.

A corpus-driven and linguosynergetic approaches enabled us to identify the motives of war, namely: the motive of patriotic disappointments, the motive of civilian casualties, the motive of capturing territories, the motive of regime change, the motive of conflict escalation, the motive of psychological pressure, and others. These motives are described in non-fiction texts. They are fulfilled with war-related collocations that describe the war as a multidimensional phenomenon, which alters not only the political system but also public consciousness, and can generate chaos, violence, and destruction.

5. Conclusions

The presented analysis has revealed emerging trends in the development of global communication following the full-scale Russian invasion of Ukraine. During the period of war, the boundaries between media communication, news discourse, and fictional discourse become increasingly blurred. The use of corpus analysis and natural language processing techniques has enabled the identification of prevailing trends in the perception of war-related content.

The logical sequence of tasks in our research dictates the algorithm for applying a comprehensive methodology, which includes corpus-driven, analytical-intellectual, and philosophical-synergetic stages of analysis. This approach made it possible to establish the properties and differential features of war-related collocations, identify the ways in which military terminology adapts and functions in war communication, and determine the mechanism of self-oscillations in war linguistics, linked to the exponential growth of war-related collocations.

The research presented here reveals that one component war-related collocations have negative connotation within the dyad "cognition – war language". The data show that out of 224 war-related collocations, only 30 proved to be infor-

mationally significant modifiers and they affect the phase trajectory of the language system. Both authors Owen Matthew and Christopher Miller use war-related collocations to document events, based on the testimony of eyewitnesses, military experts and political analysts.

We also identified the statistical relationship between two random variables *policy* and *resilience.* This relationship retranslates the military-political framework of wartime communication. In the broadest range it is observed on a linguistic level (reflection of war-related collocations in nonfiction texts about the war), and on the political level (the construction of a unique political metalanguage that influences the military-political space by emphasizing a distinctive speech code). Therefore, this process can be seen as a multidimensional, synergistic one. In tandem, they create a linguopolitical synergy. The synergistic nature of communication has been substantiated through the application of fractal methodologies, which clearly demonstrate the interplay between complex communicative goals and localized war-related information, as mediated through war-related collocations. The proposed diagrams illustrate the use of a fractal approach to understanding war, which is significantly shaped by the specific language elements used (war-related collocations).

As previously indicated, in times of war, fictional discourse is losing its purely artistic value and is gradually transforming into a blend of news reporting and war prose. The proposed corpus-driven study explains the emergence of a new type of global discourse – war discourse – with its distinct markers and strategies that did not exist before the war. Future research in corpus linguistics, communication theory, natural language processing, and artificial intelligence will likely focus on uncovering the linguopolitical synergy of war-related collocations in the texts of official-business, journalistic, and artistic styles. Upcoming investigation will also include cross-linguistic comparisons. By comparing how war-related language evolves across different languages, insights into global trends and localized adaptations can be gained. This broadens the understanding of how war discourse is shaped by cultural factors, political ideologies, and media representations.

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1. War-related collocations were identified in two books: Miller, C. (2023). The War Came to Us: Life and Death in Ukraine. Bloomsbury. 293 p. and Matthews, O. (2023). Overreach: The Inside of Putin's War Against Ukraine. 448 p.

2. We used two software for signalizing war-related collocations: https://orangedatamining.com and https://www.cortical.io

Conflicts of Interest

The authors declare no conflict of interest.

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