LINGUOSYNERGETIC VECTOR OF STUDYING CONTEMPORARY UKRAINIAN DISCOURSE (ON THE MATERIAL OF "VOROSHILOGRAD" BY SERHIY ZHADAN)

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Abstract. *This study delves into the linguosynergetic approach to analyzing language within contemporary Ukrainian discourse, specifically through the lens of Serhiy Zhadan's novel "Voroshilovgrad". In this context, language is perceived as a complex adaptive system, characterized by nonlinear interactions and self-organization. By employing principles of linguosynergetics, such as open systems, non-linearity, self-organization, and bifurcations, the research uncovers the mechanisms through which language evolves in response to varying socio-cultural environments. The novel "Voroshilovgrad" serves as a quintessential example of this dynamic process. Through its narrative, the novel captures the essence of a society in flux, where linguistic elements are not merely passive conveyors of meaning but active participants in the creation of rich and multifaceted literary concepts. The concepts exemplify how language and culture are intertwined, each influencing and shaping the other in a continuous feedback loop. By integrating the principles of linguosynergetics, this study not only enhances our understanding of Zhadan's work but also contributes to the broader field of linguistics and literary studies. It showcases the relevance of linguosynergetics in analyzing literary texts, particularly in contexts marked by rapid social and cultural transformations. Through this approach, the research underscores the intricate relationship between language and culture, affirming the significance of linguistic studies in interpreting and understanding the evolving narratives of post-Soviet societies. In sum, this study offers valuable insights into the dynamic processes through which language and culture interact, evolve, and coalesce to form the rich tapestry of contemporary Ukrainian discourse.*

Keywords: *linguosynergetics, non-linearity, self-organization, emergence, fluctuation, bifurcation, concept, discourse.*

ЛІНГВОСИНЕРГЕТИЧНИЙ ВЕКТОР ВИВЧЕННЯ СУЧАСНОГО УКРАЇНСЬКОГО ДИСКУРСУ (НА МАТЕРІАЛІ «ВОРОШИЛОГРАД» СЕРГІЯ ЖАДАНА)

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Анотація. *Дослідження розглядає лінгвосинергетичний підхід як новітній інструмент аналізу мови в сучасному українському дискурсі, зокрема через призму роману Сергія Жадана «Ворошиловград». У цьому контексті мова сприймається як складна адаптивна система, що характеризується нелінійними взаємодіями та самоорганізацією. Використовуючи принципи лінгвосинергетики, такі як відкриті системи, нелінійність, самоорганізація та біфуркації, дослідження розкриває механізми, за допомогою яких мова розвивається у відповідь на зміну соціокультурного середовища. Квінтесенційним прикладом цього динамічного процесу є роман «Ворошиловград». Твір відображає сутність суспільства, що перебуває в русі, де мовні елементи є не просто пасивними передавачами значення, а активними учасниками створення багатогранних літературних концептів. Концепти є прикладами того, як мова та культура переплітаються, кожна впливає та формує іншу в безперервній петлі зворотного зв'язку. Інтегруючи принципи лінгвосинергетики, це дослідження не лише занурюється у творчість Жадана, але й робить внесок у ширшу сферу лінгвістики та літературознавства. Наукова розвідка демонструє актуальність лінгвосинергетики в аналізі літературних текстів, особливо в контекстах, позначених швидкими соціальними та культурними трансформаціями. Завдяки цьому підходу дослідження підкреслює складний зв'язок між мовою та культурою, підтверджуючи важливість лінгвістичних досліджень для інтерпретації та розуміння еволюції наративів пострадянських суспільств.*

Ключові слова: *лінгвосинергетика, нелінійність, самоорганізація, емерджентність, флуктуація, біфуркація, концепт, дискурс.*

Introduction

Language is viewed as an open, dynamic, self-organizing complex system. This view aligns with the thoughts of Wilhelm von Humboldt, who noted that language is an infinite use of finite means (Humboldt, 1836). Language operates as a complex adaptive system, characterized by non-linear interactions and emergent properties (MacWhinney, 2015). Interdisciplinary integration of methods and concepts from various fields is essential to analyze language structures and functions. As Nick Ellis suggests, the convergence of disciplines such as cognitive science, neuroscience, and artificial intelligence is vital in understanding the complexities of language (Ellis, 2008).

Synergetics emerged as a unified approach to studying complex systems across various scientific disciplines. Synergetics is a transdisciplinary field that seeks to explain the formation and self-organization of patterns and structures in open systems (Qvortrup, 2018). It has its roots in General Systems Theory, Quantum Theory, and Cybernetics, emphasizing principles of emergence, self-organization, and self-regulation. Hermann Haken, one of the leading figures in this field, highlighted that synergetics deals with systems that consist of

many parts, and it aims at understanding the processes that lead to the formation of spatial, temporal, or functional structures (Haken, 1983).

Synergetics of language focuses on language evolution, historical changes, and non-linear development. Synergetics provides a framework to understand the dynamic changes in language over time. Synergetics of speech includes studies on text, discourse, idiolect, and speech deviations, examining different aspects of linguistic performance. Every aspect of speech can be seen as part of a larger, self-organizing system (Dombrovan, 2016). Synergetics integrates methods from various fields to analyze language structures and functions, as articulated by Haken that the behavior of a complex system cannot be understood by studying its parts in isolation (Haken, 1983).

The exploration of the linguosynergetic vector in contemporary Ukrainian discourse reveals various dimensions of linguistic and cultural studies within the framework of modern Ukrainian linguistics. Klymova (2023) emphasizes the importance of modernizing educational content to reflect current linguistic trends and national consciousness in Ukrainian linguistics courses, thereby highlighting the evolving nature of discourse and its professional applications. Similarly, the study of the concept of LOVE in modern Ukrainian songs showcases the dynamic interplay of traditional and contemporary elements in language, demonstrating how linguistic expressions adapt to cultural and social influences (Sulyma & Vysotskyi, 2022). Pavlushenko (2023) delves into the semantic field of THE RUSSIAN-UKRAINIAN WAR, outlining the critical role of linguistic constructs in shaping public consciousness during times of conflict. Prozhohina (2022) explores the ethnocultural concept of VYSHYVANKA in teaching Ukrainian as a foreign language, illustrating the integration of cultural heritage in language education. Lastly, the work on the status of the Ukrainian language amidst global challenges and military aggression provides insights into the transformative impact of geopolitical events on language and media discourse (Hlazova et al., 2023).

Materials and Methods

Contemporary Ukrainian literature is a vibrant and evolving field, reflecting the rich cultural and historical context of Ukraine. As literary studies delve deeper into the intricate layers of language, one concept that has gained traction is linguosynergetics. This approach examines how linguistic elements interact synergistically to create meaning and influence interpretation. Understanding linguosynergetic aspects within Ukrainian literature offers a profound insight into how language shapes and is shaped by cultural narratives. The landscape of contemporary Ukrainian literature has been shaped by a complex history, including periods of foreign domination, independence, and recent geopolitical struggles. Key authors such as Serhiy Zhadan, Oksana Zabuzhko, and Andrey Kurkov have played significant roles in defining modern Ukrainian literary expression. Themes of identity, resistance, and cultural heritage are prevalent, often explored through innovative narrative techniques and a rich tapestry of linguistic creativity.

To illustrate the application of linguosynergetics, we consider the works of Serhiy Zhadan. His novel "Voroshilovgrad" employs a colloquial and dynamic language style that mirrors the chaotic reality of post-Soviet Ukraine. Through a linguosynergetic lens, we try to showcase how main principles of linguosynergetics create a vivid and immersive reading experience. Linguosynergetics offers valuable tools for literary discourse. By focusing on the linguosynergetic aspects, we uncover new layers of meaning and appreciate the complexity of literary texts. This approach complements traditional methods, providing a more nuanced understanding of how language functions within literature.

Key concepts of linguosynergetics applied to literary discourse within our research are as follows:

1. *Open vs. Closed Systems*. Languages are open systems interacting with their environments, adapting and evolving. Von Humboldt observed that language evolves constantly and adapts to the needs of its speakers (Humboldt, 1836). As David Lightfoot

explains, languages are open systems that evolve through interaction with their socio-cultural environments (Lightfoot, 2017).

2. *Linearity and Non-Linearity.* Language changes are non-linear, with unpredictable developments influenced by numerous factors. Noam Chomsky's theory of transformational grammar illustrates how deep structures can produce a vast array of surface structures through non-linear processes (Chomsky, 1965). Linguistic evolution is inherently non-linear, with changes emerging from complex interactions among speakers (Croft, 2000).

3. *Self-Organization.* Language structures emerge and stabilize through internal and external interactions. Language structure is an emergent phenomenon that arises from the self-organizing processes of cultural transmission (Kirby, 2002). Haken stated that self-organization is a process where some form of overall order or coordination arises out of the local interactions between smaller components of an initially disordered system (Haken, 1983).

4. *Dissipation.* Language continuously exchanges information, energy, and matter with its environment, leading to constant evolution. Language change can be seen as a form of energy dissipation, where old structures are broken down and new ones formed (Haken, 1983). Language change is a dissipative process, continually influenced by external and internal factors (Milroy, 1992).

5. *Order Parameters and Fluctuations.* Language stability is maintained through parameters like grammatical rules, but fluctuations can lead to significant changes. Order parameters describe the macroscopic behavior of a system and guide the interactions of its components (Haken, 1983). Order parameters such as syntactic rules govern language stability, yet they are subject to fluctuations and shifts, notes Jean Aitchison (Aitchison, 2013).

6. *Bifurcations.* Critical points where small changes can result in major linguistic shifts. This concept mirrors Chomsky's idea that small changes in deep structures can lead to significant variations in surface structures (Chomsky, 1965). For example, bifurcation points in language can lead to significant shifts in phonological or grammatical systems (Wedel, 2007).

7. *Stability and Instability.* Languages exhibit dynamic stability, capable of adapting to moderate changes while maintaining core functions. A language is a living system, balanced between stability and change (Chomsky, 1965). The dynamic stability of languages allows them to adapt while preserving essential features, asserts Paul Hopper (Hopper, 1987). Attractors in linguistic systems represent stable states towards which language evolves under various constraints (Deacon, 1997).

8. *Attractors.* Patterns or states toward which language systems evolve, shaped by regulatory networks and external influences. Haken explained that attractors are states towards which a system tends to evolve from a variety of initial conditions (Haken, 1983).

9. *Fractals.* Language structures exhibit self-similarity across different levels, from phonemes to texts. Benoit Mandelbrot, who introduced fractals, observed that many natural phenomena, including language, exhibit fractal-like patterns (Mandelbrot, 1982). Linguistic structures often show fractal properties, reflecting self-similarity at multiple levels (Crystal, 1997).

By applying the principles of linguosynergetics to Serhiy Zhadan's "Voroshilovgrad," we demonstrate the intricate interplay of linguistic elements that create a dynamic and immersive concepts in readers. Linguosynergetics, with its focus on open systems, non-linearity, self-organization, and other key concepts, provides a robust framework for analyzing contemporary Ukrainian discourse. This approach not only uncovers new layers of meaning but also enhances our understanding of how language both shapes and is shaped by cultural narratives.

Discussion

The application of linguosynergetics to "Voroshilovgrad" by Serhiy Zhadan has yielded several key insights into the interplay of linguistic elements and their impact on the narrative structure. Through this analysis, we have identified the following outcomes:

1. *Open Systems*. The novel illustrates how language evolves by interacting with its socio-cultural environment. Zhadan's use of colloquial language reflects the adaptive nature of language in response to the post-Soviet Ukrainian context (Zhadan, 2010) and can be observed in the following example:

"Від музики фольксваген здригався, мов консервна бляшанка, по якій били дерев'яною палицею. Боря, сидячи позаду, послабив вузол краватки й напружено розглядав спальні райони."

The sentence vividly describes the physical impact of music on a Volkswagen, on the one hand, and the emotional state of the character, Boria, on the other hand. The language adapts internally to convey not just an action but an emotional and sensory experience. The principle of open systems in linguosynergetics is realized in this example through the interaction of linguistic elements with sensory experiences, the internal dynamics of expressive language, adaptability in creating vivid imagery, and the influence of the external environment on language use.

2. *Non-Linearity*. The non-linear narrative structure of "Voroshilovgrad" captures the unpredictable developments in the protagonist's journey, aligning with Chomsky's theory of transformational grammar (Chomsky, 1965). It can be illustrated by the following example:

"Щось за цей час змінилось, повітря стало гарячим, кольору смерті, яскравих безнадійних відтінків. Ми йшли вагоном, і я чув дивні звуки, що лунали із зачинених наглухо купе. Чув тихі пташині голоси, чув напружене дихання тварин, так мовби там за дверима стояли чудовиська, чекаючи, коли їх випустять назовні. [...] Я зазирнув до купе. Там, прив'язана мотузкою до столу, стояла чорна вівця, недовірливо дивлячись кудись поза нас."

The principle of non-linearity can be showcased in the provided excerpt through the unexpected and surreal developments that break away from a predictable, linear progression of events. Non-linearity in narrative often involves the introduction of unexpected elements, shifts in tone, or changes in the perceived reality of the characters. Such elements as unexpected change in atmosphere, surreal imagery and sounds, abrupt character interactions, and disjointed reality and expectations collectively create a non-linear narrative by disrupting the expected flow of events, introducing surreal and unexpected details, and subverting the reader's anticipation of what might come next. This departure from linearity enhances the tension and unpredictability, making the story more engaging and thought-provoking.

3. *Self-Organization*. The emergent order in the novel's plot demonstrates how self-organization leads to cohesive narratives from chaotic elements, reflecting the principles described by Kirby (2002) and Haken (1983). Moreover, this principle is realized through various central concepts, showcasing how characters and communities spontaneously create order, meaning, and resilience amidst chaos and uncertainty.

The concept of IDENTITY AND BELONGING is vividly reflected in the protagonist's return to his hometown and the reconnection with his roots. It highlights self-organization in the quest for personal and communal identity. Herman's efforts to protect brother's gas station with his friends are a form of self-organization, where they collectively work towards re-establishing their place and identity within the community. The concept of TRANSITION AND CHANGE is seen through the turbulence of post-Soviet Ukraine and the characters' attempts to navigate uncertainty reflect self-organization at both personal and societal levels. As they adapt to new realities, characters collectively form new social structures and coping mechanisms. The concept of MEMORY AND HISTORY influences the present, showing self-organization through the characters' reflections and the integration of past experiences into current actions. The collective remembrance of shared history helps

in forming a cohesive community identity. The concept of HOME AND DISPLACEMENT showcases self-organization as characters strive to maintain their sense of belonging despite physical and emotional displacement. Herman's journey back home and his efforts to reclaim it symbolize the re-establishment of order and identity. The concept of COMMUNITY AND SOLIDARITY is vivid where individuals come together to support each other, exemplifying self-organization in times of crisis. The spontaneous formation of support networks and communal bonds underscores the resilience and collective strength of the community. The concept of CONFLICT AND SURVIVAL is showcased through the struggles to survive amidst economic hardship and political instability reflect self-organization as characters adapt and find ways to endure. Their collective strategies and resilience in facing conflicts highlight the emergent order from chaos. The concept of EXISTENTIAL REFLECTION is realized through the protagonist's introspective journey and existential questions prompt self-organization in the realm of personal philosophy and meaning-making. As Herman reflects on life and purpose, he spontaneously reorganizes his thoughts and beliefs to find coherence and direction.

Through these concepts, "Voroshilovgrad" demonstrates how language contributes to the realization of the principle of self-organization. The novel's emergent order, built from the chaotic elements of personal and societal turmoil, reflects how characters and communities spontaneously create order, meaning, and resilience amidst the challenges of their environment. The language used in the narrative serves as the medium through which these dynamic processes are conveyed, allowing readers to experience the intricacies of self-organization in action.

4. *Order Parameters and Fluctuations*. The stability provided by the protagonist's memories and the fluctuations caused by external conflicts highlight the dynamic interplay of stability and change in the narrative, similar to the syntactic rules and shifts described by Aitchison (2013). The principle of fluctuation in linguosynergetics involves dynamic changes or oscillations within a system, such as shifts in emotions, thoughts, or environments that influence the overall stability and behavior of the system. In the provided passage, fluctuation is showcased through the interplay of time, memory, and perception, creating a dynamic and evolving narrative moment:

"Була пообідня пора, жовтневе сонце, здавалось, укінець заплуталося серед яблуневого листя, і промені його рухались підлогою, мов водорослі в прозорій воді. Я подумав, що ми з Ольгою вже були разом у лікарняній палаті, і тоді все закінчилось якось незрозуміло, вірніше — і не закінчилось ніяк, усе триває аж до сьогодні і триватиме ще невідомо скільки часу. Ольга зручно умостилась на лікарняних подушках, дивлячись кудись повз мене, кудись туди, де на білій стіні рухались повільні яблуневі тіні."

The narrator's mind fluctuates from the current afternoon scene to a past memory of being with Olga in the hospital. The description of the sunlight moving through the apple tree leaves and across the floor creates a sense of constant motion and change, akin to the ebb and flow of water. This visual fluctuation mirrors the emotional and mental shifts occurring within the narrator. The narrator's emotions fluctuate between nostalgia, confusion, and a sense of ongoing continuity. The unresolved nature of the relationship with Olga adds to this emotional oscillation, as the past and present intermingle without clear resolution.

Such elements as temporal, visual, environmental, and emotional fluctuations illustrate the principle of fluctuation through the continuous movement and change within the narrative, both in terms of time and emotional states. The passage captures a moment that is in constant flux, reflecting the complex, dynamic nature of human experience and memory.

5. *Bifurcations*. Critical moments in the story where small actions lead to major shifts reflect bifurcation points, illustrating how minor linguistic changes can result in significant narrative developments (Wedel, 2007). The principle of bifurcation can be effectively illustrated through the provided excerpt:

"Відійшовши від залізничного насипу, я довгий час крокував старим шосе, майже всуціль затягнутим очеретом. Дорогою перелітали розгублені оси, й тепла

павутина заліплювала обличчя та одяг, потрапляючи на шкіру й лишаючись на волоссі. Шосе тяглось уздовж кукурудзяних полів, котрим не було краю; місцевість була пласкою, жодних дерев, жодних населених пунктів, жодних ознак життя чи смерті. Далі трапилось роздоріжжя. Шосе побігло вперед, у долину, що виглядала безкінечною, залитою сонцем і обплетеною павутинням. Натомість я звернув ліворуч, за сонцем, і пішов поміж порожніх полів, із яких уже зібрали врожай. Дорога була наїждженою, йшлося нею легко. Сонце сліпило очі, рухаючись небесними поверхнями. Кілька разів я зупинявся й відпочивав, лягав на суху траву й дивився в небо, відчуваючи, як сік у стеблах холоне і завмирає. Місця були невідомі, все одно, думав я, кудись вийду. Головне — йти на захід, від кордону."

Bifurcation, in narrative terms, refers to a critical decision point where a character or plot can diverge into two or more distinct paths, leading to significantly different outcomes or developments. Through this example, the principle of bifurcation is showcased by the character reaching a literal and metaphorical crossroads, making a deliberate choice that leads to a new and distinct narrative path, illustrating how a single decision can alter the course of events.

By applying the principles of linguosynergetics to "Voroshilovgrad," we have uncovered new layers of meaning and gained a deeper understanding of the complex dynamics at play in contemporary Ukrainian literature. This approach not only enriches our interpretation of Zhadan's work but also provides a robust framework for analyzing other literary texts within similar contexts.

Research Results

Zhadan's work exemplifies the complex adaptive system that is language, showcasing how non-linear interactions and emergent properties create a dynamic narrative landscape for concepts. The colloquial and dynamic language style in "Voroshilovgrad" mirrors the chaotic reality of post-Soviet Ukraine, emphasizing the self-organizing nature of language. This aligns with Humboldt's view of language as an infinite use of finite means, constantly evolving to meet the needs of its speakers (Humboldt, 1836).

In "Voroshilovgrad," the protagonist's journey reflects the non-linear development of language, where unexpected twists and turns illustrate the unpredictable nature of linguistic evolution. This non-linearity is a hallmark of complex systems, where small changes can lead to significant shifts, much like Chomsky's transformational grammar (Chomsky, 1965). For instance, Zhadan's narrative structure allows for a fluid and spontaneous progression, capturing the essence of a society in flux.

Self-organization is another key vector of concept studying observed in Zhadan's work. The novel's characters and their interactions create a cohesive narrative from seemingly chaotic elements, akin to the emergent phenomena in self-organizing systems described by Kirby (2002) and Haken (1983). This emergent order reflects the dynamic stability of language, balancing between stability and change while adapting to new influences (Hopper, 1987) and evolving concepts.

Order parameters and fluctuations in the novel are highlighted through the stability provided by the protagonist's memories and the fluctuations caused by external conflicts. These elements maintain narrative coherence while allowing for significant developments, much like the syntactic rules and shifts described by Aitchison (2013).

The critical moments of decision and change in the story reflect bifurcation points where small actions lead to major shifts in the narrative, paralleling linguistic shifts in phonological or grammatical systems (Wedel, 2007).

Thus, "Voroshilovgrad" demonstrates the principles of linguosynergetics through its portrayal of language and narrative as complex, adaptive systems. This approach uncovers new layers of meaning and enhances our understanding of how language shapes and is shaped by cultural narratives, providing a nuanced perspective on contemporary Ukrainian discourse.

Conclusions

Linguistic synergetics provides a comprehensive framework for studying language as a complex, dynamic system. It integrates interdisciplinary methods to explore language's structural and functional evolution, emphasizing the interconnectedness and self-organizing nature of linguistic elements. This approach promises to advance our understanding of language, revealing deeper insights into its dynamic behavior and structural complexities. In "Voroshilovgrad," Zhadan's use of colloquial and dynamic language styles exemplifies how linguistic elements interact synergistically, reflecting the chaotic reality of post-Soviet Ukraine. This interaction aligns with the principles of linguosynergetics, showcasing the novel as an open system that evolves and adapts through its interaction with socio-cultural environments. The non-linear and self-organizing aspects of language are evident in the narrative's structure and thematic development, offering insights into the complexities of linguistic evolution within a literary context.

Through this lens, we see how Zhadan's work contributes to the broader landscape of contemporary Ukrainian discourse, marked by themes of identity, resistance, and cultural heritage. The linguosynergetic approach complements traditional linguistic analysis, providing a more nuanced understanding of how language functions within discourse. By emphasizing the dynamic and evolving nature of linguistic systems, linguosynergetics enriches our appreciation of the innovative narrative techniques and linguistic creativity that define modern Ukrainian literary expression.

In conclusion, the application of linguosynergetics to literary discourse, as illustrated through Zhadan's "Voroshilovgrad," highlights the synergistic nature of linguistic concepts and their profound impact on cultural narratives. This approach not only deepens our understanding of individual works but also offers a valuable perspective on the evolving field of contemporary Ukrainian literary discourse.

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