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## **CONCEPTS THROUGH A LINGUOSYNERGETIC LENS (ON THE EXAMPLE OF THE CONCEPT OF *DEATH*)**

У статті розглядається функціонування концептів з лінгвосинергетичної точки зору. Метою дослідження є вивчення функціонування концепції смерті з лінгвосинергетичної точки зору та розробка моделі для розуміння синергетичної взаємодії лінгвістичних та контекстуальних факторів у концептуалізації смерті. Дослідження побудовано на принципах когнітивної лінгвістики та лінгвосинергетики. Для розробки основної гіпотези дослідження використовуються загальнонаукові методи, такі як аналіз, синтез, індукція, дедукція, абстрагування, пояснення та опис.

Отримавши статус наукової парадигми в лінгвістиці, гуманітарний та епістемологічний виміри синергетики дають можливість застосовувати синергетичні моделі у вивченні процесів, пов'язаних з когнітивною діяльністю людини. Пропонується універсальна лінгвосинергетична модель концепту, яка відображає його виміри як у статичній, так і в динамічній формі та демонструє його функціонування. Дослідження пояснює, як працює модель відповідно до законів і правил лінгвосинергетики. У статті представлено комплексне дослідження концепту СМЕРТІ з використанням принципів лінгвосинергетики та теорії фракталів. Обґрунтовується доцільність такого підходу, позаяк він забезпечує глибше розуміння складноструктурованих багатомасштабних стереоскопічних об'єктів будь-якого генезису. Концепт DEATH використовується в англomовному дискурсі, щоб продемонструвати адекватність моделі та показати, як цю модель можна застосувати до інших концептів. Категоріально-понятійні інструменти синергетики в лінгвістиці використовуються для опису того, як концепт саморегулюється та функціонує як відкрита нелінійна система. Доводиться, що концепт має фрактальні характеристики, включаючи самоподібність, динаміку, нерегулярність, рекурсивність і дробовість, з аттрактором у центрі. Стаття демонструє потенціал теорії фракталів у дослідженні складних систем. Запропонована в дослідженні теорія фракталів відкриває нові можливості для аналізу складноструктурних багатомасштабних стереоскопічних об'єктів будь-якого генезису. Стаття сприяє вивченню лінгвосинергетичного підходу та теорії фракталів і пропонує новий погляд на функціонування та динаміку концепту «DEATH».

*Ключові слова: лінгвосинергетика, концепт, модель, функціонування, аттрактор, фрактал.*

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**Introduction.** Death is a complex and multifaceted phenomenon that has been a subject of interest across various disciplines, including philosophy, anthropology, psychology, and linguistics. In linguistics, the study of the concept of DEATH has been a topic of research for a long time, but its comprehensive analysis still presents many challenges [Prihodko &

Prykhodchenko, 2018; Pryhodko, 2013; Ruiz de Mendoza & Galera Masegosa, 2014; Uberman, 2018]. The traditional approaches to concept analysis are often inappropriate in capturing the dynamic nature of the concept and its relationship with other concepts. Therefore, the development of new methods and approaches is necessary to provide a more accurate and holistic understanding of the concept.

According to W. Croft & D. Cruse [2004, p. 7], the term 'concept' is a fundamental element of how we understand the world. However, it is also one of the most disputed topics in contemporary linguistics. N.V. Tatsenko [2021, p. 112] suggests that concepts are complex and can be interpreted in various ways, with each interpretation emphasizing different aspects and characteristics. Thus, there is a great deal of ambiguity surrounding the definition of 'concept.'

Most scholars agree that even though the concept may be interpreted differently, a person's perception of reality involves different mental processes such as systematization, classification, categorization, and identification, which reveal the concept's functioning and assess its appropriateness.

In this article, we propose a linguosynergetic approach to explain the DEATH concept functioning. This approach considers the complexity and multidimensionality of the concept and offers a more dynamic and integrated model that can reflect its various aspects and characteristics. Therefore, the research is *aimed* to investigate the DEATH concept functioning from a linguosynergetic perspective and develop a model for understanding the synergistic interplay of linguistic and contextual factors in the conceptualization of death.

To realize this, the following objectives should be fulfilled: (1) To examine the existing literature on the conceptualization of death and the role of language in shaping our understanding of this concept. (2) To introduce the concept of linguosynergetics and its potential for analyzing the interplay of linguistic and extralinguistic factors in conceptualization. (3) To apply the linguosynergetic approach to the concept of DEATH and create a model that comprehends the changing and evolving characteristics of the concept. (3) To provide examples of how linguistic and extralinguistic factors interact in the conceptualization of death and contribute to our understanding of the concept. (4) To discuss the implications of a linguosynergetic perspective on our analysis of the concept of DEATH, and the potential application of this model to other concepts.

The subject matter of this article is the functioning of the concept of DEATH from a linguosynergetic perspective. The article aims to explore how the interplay of linguistic and extralinguistic factors contributes to understanding of the concepts.

The study follows the principles of cognitive linguistics and linguosynergetics as advocated by various scholars in the field [Allwood, 2006; Dancygier, 2017; De Beaugrande, 2004; Dirven, 2005; Dombrovan, 2014, 2018; Köhler, 1993; Kövecses, 2018; Pichtovnikova, 2016, 2020; Tatsenko, 2017, 2020; Yenikeeva, 2022]. In particular, the synergetic model, as proposed by T.I. Dombrovan, is employed to reflect the dynamic changes in a system, as it moves towards a new stable state via bifurcation points [Dombrovan, 2014, p. 122]. This approach, which has been acknowledged as a scientific paradigm in linguistics, allows for the application of synergetic models in the study of human cognitive activity [Dombrovan, 2014, p. 26; Dombrovan, 2018].

The process of conducting research involves a combination of general scientific, interdisciplinary, and specific scientific methods. To develop the main research hypothesis, general scientific *methods* like analysis, synthesis, induction, deduction, abstraction, explanation, and description are used. In order to replicate the dynamics of concepts, interdisciplinary methods such as the extrapolation of synergetic principles and synergistic modeling are used. The researcher also employs a specific scientific technique called cognitive-discursive analysis, which is designed to analyze the functioning of the concept as a system.

The objective of this study is to offer a more thorough comprehension of the DEATH concept and to demonstrate the effectiveness of the linguosynergetic approach in modeling complex concepts and explaining their functioning. The novelty of this framework provides new opportunities for investigating complex concepts in a more nuanced and detailed manner. By utilizing this approach, the author hopes to provide a more comprehensive understanding of concepts and their role in language and communication.

## Methodology

Our research is based on the principles of synergetics, which is a recently developed scientific field that addresses both material and non-material systems [Yenikeeva & Klymenko, 2022, p. 418]. Synergetics was first coined by H. Haken, a German theoretical physicist, to describe a new way of understanding the world as an open, nonlinear, and multivariate system that has the ability to self-organize and self-evolve [Haken, 2000].

The ability to apply the laws of synergetics to various disciplines demonstrates the interdisciplinary and all-encompassing nature of this theory. The fundamental principles of a synergetic perspective align with the holistic philosophy that emphasizes the universal structure and evolutionary principles of all systemic objects [Yenikeeva & Klymenko, 2022, p. 419]. The emergence of linguosynergetics signifies a major paradigm shift in linguistics, indicating that every aspect of language structure is not self-contained but interdependent on genuine language activities and human cognitive structures. The conventional linear connection between language components, where one follows another due to external causes, has been replaced by a simultaneous and integrated connection.

The underlying principles of linguosynergetic methodology can be summarized in Table 1.

Table 1.

### Methodology of linguosynergetics

Self-organization and self-regulation of the language	Appearance of a new whole out of complex coherent behavior of its constituents. Haken explains it as follows: a system is self-organized if it acquires spatial, temporal or functional structure without any external influence. The main indicator of a self-organized system is its openness/nonlinearity.
Word as a way of semantic condensation	Word is not just a sound, it is a subtly organized sound energy.
Recursiveness and fractality	Phenomenon of large-scale invariance, when subsequent forms of self-organization resemble the previous ones by their structure.
Language seeking from chaos to order	Chaos is an unstable state of a system that orders, leading to a stable state of a system.
Interdisciplinarity of the synergetic research	Language is an instrument of cognition within anthropological sciences.
Coherence	Agreed behavior of complex system components that provides its united concurrent functioning.
Emergence	Continuous process of structuring when structure = consequence = cause (e.g., the process of acquiring new meaning by a concept under the influence of the realities of the surrounding world).
Fluctuation	Stochastic deviation from the habitual mode of complex system functioning, loss of stability.
Bifurcation	Critical point, divarication of the possible modes of system functioning when only one among many is chosen.
Attractor	A relatively stable structure, factor, which promotes self-organization of the system with its transition to a new ordered stable variant. The aim of the system, to which it strives.
Control parameters	Variables at macro-level that manage behavior of the components at micro-level (e.g., grammatical categories).
Fractal	The main constructor of linguosynergetics, when a small fragment of structure is like another bigger fragment of structure or even the structure on the whole.
Dissipation	Process of diffusion of inhomogeneities in an open nonlinear system, when surplus goes out of the system boundaries (e.g., sifting out unnecessary words).

Using the categorical and conceptual tools of synergetics in linguistics, we aim to elucidate the processes underlying the self-regulation of concepts. In doing so, we conceive of concepts

as complex, spontaneously self-organizing systems characterized by homeostatic, hierarchical structures that are open and nonlinear. Through this lens, we can establish the fractal nature of concepts, meaning that their functioning repeats itself at different scales, with an attractor located at the center of this self-similar pattern. This attractor is a focal point that draws the concept towards a stable state of equilibrium, and its presence helps to explain why concepts tend to be resilient and resistant to change. Ultimately, by analyzing the mechanisms that drive the self-regulation of concepts, we can gain a deeper understanding of how language functions and how we use it to communicate and better comprehend the world around us.

### Literature overview

The term 'concept' was first introduced into Western linguistics by philosopher G. Frege in 1892. He created a model of a lingual sign in the shape of a triangle, which included a name / meaning / object, a concept / meaning and a representation / denotation [Slater, 2000]. According to G. Frege, a name represents an object that can be perceived through the senses, while meaning refers to the collection of features that define the object and its objective. Representation, on the other hand, pertains to the individual's unique and subjective interpretation of the object within their worldview.

G. Frege's ideas were ahead of his time, but he aligned his theory with the prevailing structuralist paradigm of his era. As a result, he neglected to incorporate mental imagery into linguistic meaning and failed to link the concept's function with an individual's cognitive activity.

V. Evans proposed a theory of lexical concepts and cognitive models [Evans, 2009a], in which the author distinguished between the verbal expression of a concept and its cognitive essence. The concept was defined as a collection of linguistic information that forms the semantic structure of a symbolic unit, such as a word or grammatical structure. These concepts serve as intermediaries between language and extralinguistic reality.

Furthermore, V. Evans identified cognitive models as a component of non-linguistic knowledge that contributes to the construction of concepts [Evans, 2009b]. During discourse, different cognitive models are layered depending on an individual's perception of reality, which can lead to misunderstandings since the same lexical concept can elicit various associations in different people.

In essence, V. Evans' theory highlights the dynamic and subjective nature of concepts and their formation. While concepts are rooted in linguistic information, their cognitive essence is influenced by an individual's unique cognitive models and perspective on reality. Therefore, understanding the nuances of how different individuals perceive concepts is crucial for effective communication and avoiding misunderstanding.

P. Chilton proposes an alternative approach to concept modeling, which involves utilizing the scheme of associations [Chilton, 2009]. This approach employs a geometric construction of cognitive space to structure the concept, with the aim of analyzing the content dynamics of spatial concepts through visual graphics. This approach focuses on the associations between concepts and the mental space in which they exist, as well as how they relate to each other.

D. Glynn proposed a usage-based approach to concept modeling [Glynn, 2009], which is based on the Lexical Network approach suggested by R. Langacker [Langacker, 2009]. Glynn developed an improved approach called the Quantitative Multifactorial method to enhance the Lexical Network approach, which involves analyzing how words are used in various contexts. This information is then used to examine the cognitive and functional features of the word in a specific context. The method involves analyzing a large number of word usages in different contexts, including grammar, semantic content, and extralinguistic features, to determine the meaning and characteristics of the word in a particular language, discourse, or dialect. This approach is beneficial as it links the study of language units with discourse analysis. However, it is time-consuming since it requires analyzing a significant amount of language units.

K. Fisher [2010] builds on the ideas of Glynn's usage-based approach and proposes a combination of cognitive semantics and corpus linguistics within the Quantitative Multifactorial method for concept modeling. In addition to analyzing the usage of language units in different contexts, Fisher emphasizes the importance of corpus databases in providing material for research.

Considering the ambiguous meanings of the concept, we adopt the viewpoint of V. Evans, who asserts that concepts offer a way to access intricate and multifaceted conceptual knowledge

[Evans, 2009a, p. 133]. We propose that a concept functions hierarchically and should encompass all the components that define it as a semantic entity, as well as everything that contributes to its significance in culture, including sensory imagery, informational content, and interpretive context [Tatsenko & Molhamova, 2021].

To accurately define a concept, it should be integrated into its functioning and reflect all of its features and properties. Thus, a newly introduced approach called linguosynergetic analysis can help, as it views the concept as a dynamic cognitive model that combines both collective and personal knowledge. This approach acknowledges that the concept functions spontaneously in cognitive and communicative activities and is influenced by internal and external factors [Tatsenko, 2020, p. 396-397]. The linguosynergetic approach uses a universal metalanguage that can describe the multicomponential, multileveled, and spatio-temporal heterogeneity of concepts [Tatsenko, 2017, p. 78]. We believe that using the linguosynergetic model is currently the most effective way to explain the functioning of a concept, as it not only identifies the characteristics and hierarchy of its components, but also highlights the changes in its existence over time.

### **Synergetic nature of a concept**

According to N.V. Tatsenko [2017], the concept goes through several stages of development, starting from its physical form and progressing through various levels, including the nervous system, the level of perception and emotion, the level of categorization, the linguistic level, the discursive level, and finally the socio-cultural level [Tatsenko, 2017]. This process is complex and results in the concept becoming an open and dynamic system that interacts with the environment through the exchange of matter (such as sound and graphics), information, and energy.

To expand on this, the researcher highlights the relationship between the physical and psychological dimensions of language use. When we speak or think, our bodily actions impact the environment in various ways, such as producing sounds or manipulating objects. Conversely, external stimuli, like seeing or hearing something, can trigger physiological responses in our bodies. These responses then activate the nervous system, which is responsible for processing and interpreting sensory information. As a result, emotions and feelings arise, which play a key role in shaping our perception and understanding of the information.

L.S. Pikhtovnikova's analysis delves even deeper into the neural mechanisms that underlie the processing of concepts [Pikhtovnikova, 2020, p. 86]. The brain's neural network is responsible for integrating and processing the information received through the senses, and assigning a specific concept to a group of neurons can be challenging. The process of forming and storing concepts in our natural memory takes time and involves various forms of social communication, including both verbal and nonverbal communication. Our personal reasoning also plays a role in shaping how we interpret and understand concepts, and this can influence the way we express them through language. Ultimately, the non-verbal representation of concepts through emotions and feelings is an important aspect of how we understand and communicate using language.

Concepts are integrated into more complex and meaningful wholes at the perceptual-emotional level [Tatsenko, 2017]. These wholes activate the corresponding lexically represented concept in the mind. During this process, some keywords that describe the properties of the concept are also encoded. L.S. Pikhtovnikova [2020, p. 87] further elaborates on this by stating that the notional component of the concept is actualized at the level of the neural network. This actualization is then represented at the linguistic level through the lexical-semantic field of the concept.

At the conceptual-categorical level, incoming information is comprehended and organized into speech. At the linguistic level, the concept is given a physical form and becomes a tangible reality. The conceptual system is responsible for processing information, sound, graphic matter, and energy, and presenting the results in the discursive environment. At these levels, the lexical-semantic field is supplemented by individual psycho-linguistic experience and becomes a part of a complex semantic network.

According to S.A. Zhabotyenskaya [2013], this semantic network is composed of basic frames that incorporate propositional schemes. These schemes help to structure and organize the semantic network, making it easier to navigate and understand. In this process, the figurative component of the concept is actualized, which is represented in the form of a network frame model at the linguistic level.

In the realm of linguistics, N.V. Tatsenko [2017] explains that concepts operate at various levels of complexity. At the discursive level, the speaker influences the listener by using language to activate concepts in their mind. This interaction takes place in a socio-cultural context where both parties share common linguistic and cultural knowledge. The cognitive processes involved in this exchange result in the activation of the valuable component of the concept in the mind of the individual, especially when they possess a developed ethnic worldview. This valuable component can be understood as a matrix model of the concept domains, which takes into account the individual's cultural background and experiences.

The process of concept functioning involves multiple levels of perception and interpretation. At the physical level, the body's interactions with the environment influence the concept's formation. This physical interaction leads to the activation of neural networks and the production of emotions that process information in a certain way. At the perceptual-emotional level, concepts become integrated into complex meaningful wholes that activate the concept in the mind. The notional component of the concept and key words that characterize its properties are coded at this level.

At the conceptual-categorical level, incoming information is comprehended, and speech is constructed. The concept is given physical form at the linguistic level and becomes a reality. At these levels, the individual's psycho-linguistic experience complements the lexical-semantic field, becoming part of a complex semantic network. During this process, the figurative component of the concept is actualized and represented as a network frame model.

The valuable component of the concept is actualized at the socio-cultural level, where the concept is embedded in the national consciousness and ethnic worldview. The individual's attitude towards the concept determines bodily sensations, linking back to the physical level. Overall, the mechanism of concept activation is a complex and dynamic process that involves multiple levels of perception, interpretation, and interaction (see figure 1).

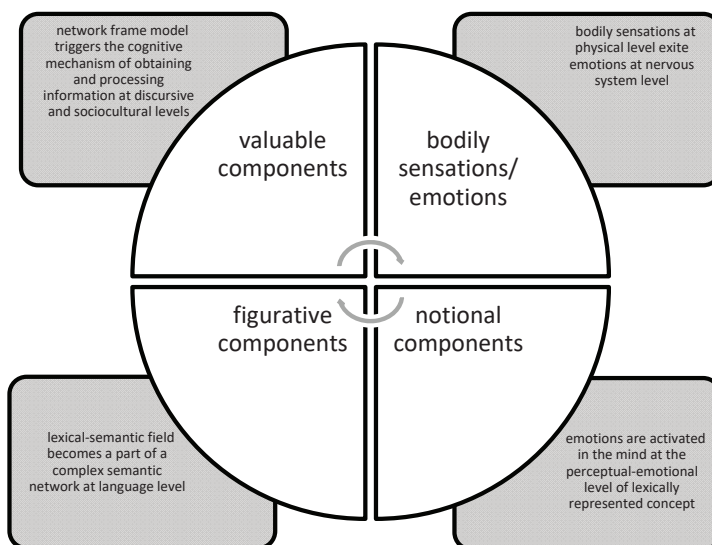


Figure 1. Linguosynergetic model of a concept

Since recognition that the notion is transformed into a concept in the mind of the holder of culture at the time of its evaluation and subjectivation, the functioning of the concept in the form of a synergetic model, in our opinion, is the most relevant explanation. Moreover, correlating with the level decomposition of the concept according to N.V. Tatsenko, this model explains the non-verbal representation of the concept in the form of emotional states and the linguistic representation of the concept in the form of lexical-semantic fields [Langacker, 2009], frames [Fillmore, 2010], conceptual networks based on basic propositions, conceptual

metaphors and paremia), matrix models of concept domains [Langaker, 2000; Zhabotynska, 2013]. A single system with the neural system of the brain is formed, which equips the entire mental experience of the individual on the principle of semantic nuclei through the conscious and unconscious dynamics of associative connections [Bondarenko et. al., 2017]. As a result, we visualize the concept as a single entity.

To verify the adequacy of the model, the mechanism of concept functioning is illustrated in the context of the DEATH concept, as verbalized in a literary English discourse. Specifically, the example of "The School" by Donald Barthelme [2014] is used to demonstrate how the model operates. The story presents situations that deal with the theme of death, making it an ideal text for analysis. The story starts as a darkly funny tale but gradually intensifies as a series of ominous events unfolds, culminating in a thought-provoking attempt to reconcile life and death. The author uses various events in the story to activate the concept of DEATH in the minds of the readers. These events elicit emotions and feelings associated with death, which are influenced by individual differences and cultural backgrounds, ultimately shaping our attitudes towards the phenomenon of death.

In this story, a pivotal moment occurs when the eternal human fear of encountering death and the perennial human desire to understand the phenomenon of death are both expressed in the form of a question: "*Is that death which gives meaning to life?*" From that point on, the story becomes a deep and thought-provoking exploration of the reconciliation between life and death. By analyzing the use of the DEATH concept in this literary work, we can gain insights into the functioning of the model in a real-world context.

In Donald Barthelme's story "The School", death is introduced to the schoolchildren when they plant trees, and all the trees end up dying. The sight of "*thirty dead trees*" is a physical stimulus that excites the children's nervous system and produces an emotion of depression. This emotional response is evidence of the non-verbal realization of the DEATH concept at the physical level: "*the trees all died...all these kids looking at these little brown sticks, it was depressing*". This is 'obvious' because we assume that the evaluation component of a concept includes social attitudes toward the DEATH concept, which are reflected in people's feelings and emotions toward the phenomenon of death.

In other words, the children's reaction to the dead trees is an example of how the physical stimulus of death can activate the emotional and physiological systems in the human body, which is evidence of the non-verbal realization of the DEATH concept. This realization is not only a cognitive process but also involves emotional and evaluative components, which are shaped by social and cultural factors. Therefore, the example of the dead trees in the story illustrates how the DEATH concept can be realized at the physical level through non-verbal cues and emotional responses, which are shaped by cultural attitudes and beliefs.

In Donald Barthelme's story "The School", another event takes place where Billy Brandt's father is fatally knifed during a struggle with a masked intruder: "*Billy Brandt's father who was knifed fatally when he grappled with a masked intruder in his home*". The author only spends two lines on this event, but through the use of the word "*knifed fatally*", we understand that something terrible has occurred when Billy's father "*grappled with a masked intruder*", resulting in the irreversible cessation of all vital functions, the end of life. At the perceptual-emotional level, the notional component of the concept of DEATH (*knifed fatally, grappled with a masked intruder*) is activated in our minds as we process the information about the event. The properties of the concept, such as being fatally knifed and grappling with a masked intruder, become apparent, and the lexically represented concept of DEATH is activated in our minds. This activation results in the unfolding of the lexical-semantic field of the concept of DEATH. The process of understanding and processing the information adds the figurative component, which is influenced by individual differences and ethnic worldviews, and shapes our attitude towards the phenomenon of death. This individual attitude elicits specific feelings and emotions while reading the above situation, even though the author does not explicitly use the lexeme '*death*'. The fact that we can restore the whole concept with all its features and properties from just one component of the situation is evidence of the complex and intricate nature of human language comprehension.

Furthermore, as we continue to read the story, we encounter various words that denote concepts which are closely linked to the DEATH concept and together they form a conceptual

structure known as a frame (Fillmore), base (Langacker), or domain (Fillmore, Langacker) – terms that are used interchangeably [Croft and Cruse, 2004, p. 16]. These concepts, such as TRAGEDY (“*The tragedy occurred when Matthew Wein and Tony Mavrogordo were playing over where they’re excavating for the new federal office building*”), COURT CASE (“*There was a court case coming out of that*”), HORROR (“*We require an assertion of value, we are frightened*”), LOSS (“*Where did they go?*”) are all related and contribute to the overall understanding of the DEATH concept. They arise at the discursive level and are interconnected in such a way that they form a larger conceptual structure. For example, the concept of TRAGEDY is introduced in the story when two boys were playing in an area where excavation was taking place for a new federal office building, which ultimately leads to a tragedy. Another concept, COURT CASE, is brought up in relation to the incident, indicating that there will be legal consequences. The concept of HORROR is also evoked, as the characters are frightened and require an assertion of value. Finally, the concept of LOSS is introduced, as characters wonder where the two boys have gone. Together, these concepts contribute to the overall understanding of the DEATH concept and form a larger network of interconnected concepts. This demonstrates the complex nature of language and how concepts are intertwined and connected in intricate ways.

We believe that the concept can unfold in the human mind at any level, varying based on the situation or setting it is activated in, because this process is based on the self-organization mechanism. This mechanism allows for the formation of a new entity, created through the coordinated behavior of the elements in the original environment. This means that the concept can arise from any aspect of a person’s experiences, whether it be from their physical, perceptual, emotional, or socio-cultural encounters. The self-organization mechanism ensures that the elements in the environment interact with each other to form a new, unified entity – in this case, the concept. The process of self-organization is dynamic and can be impacted by a variety of elements, such as the individual’s personal experiences, cultural background, and social environment [Tatsenko, 2021]. Thus, the emergence of the concept is not fixed to any particular level and can occur in diverse manners, relying on the situation or environment in which it exists [Dombrovan, 2014, p. 103].

In synergetic terms, the concept formation process involves the reorganization and spontaneous adjustment of complex elements within a system when the system is influenced by external factors. When the system reaches a critical point, known as the bifurcation point, it moves to a new level of operation, resulting in the output of surplus information and the maintenance of balance within the system. However, external factors can cause the system to enter a state of conflict again, leading to an ongoing cycle of adaptation and adjustment. This process is ongoing and never-ending. Essentially, the concept formation process involves constant adjustment and adaptation in response to external influences, in order to maintain balance within the system.

Understanding how the concept is activated in the human mind at different levels of knowledge is a complex task that requires expertise in psychology. However, it is possible to analyze the cognitive functioning of the concept’s verbalization and demonstrate that the concept model is synergistic by using linguistic methods alone. In other words, it is possible to examine how the concept is expressed through language and determine whether the way it is expressed reflects the principles of synergetics. This approach can be useful for gaining insight into how the concept functions in human cognition and how it is represented in language.

### **Linguosynergetic aspects of the functioning of the concept of DEATH**

T.I. Dombrovan suggests that the synergetic terminology can be applied to the field of linguistics through a metaphorical representation of the objects of study [Dombrovan, 2014, p. 101]. However, we believe that concept’s attractor and fractality, which deal with cognitive verbal structures, can serve as valuable tools for linguistic analysis of concepts. These notions can facilitate us in acquiring a more profound comprehension of language and its relationship with cognition.

The purpose of a self-organizing system is to achieve a certain state of calmness under internal or external conditions [Scherbak, 2018, p. 31]. Attractor (English *attract* – to draw) is a relatively stable structure, which inevitably leads to evolutionary processes in open and nonlinear systems [Dombrovan, 2014, p. 110] in the pursuit of stability.



This is a “control parameter”, organizing the beginning, a favorable factor for self-organization of the system, its transition to a new, consistent, relatively stable state. This is a set of points in the phase space of a dynamic system, to which its trace is attracted over time [Scherbak, 2018, p. 32]. This is the ultimate goal of the system. For example, in the physical world, the attractor is the end position (point), reaching which the pendulum stops moving.

In the study of the concept, the attractor is the name of the concept, because it draws all possible meanings of the concept. In other words, the attractor contains the most important information and the most important meanings that attract and structure the meanings around itself. An attractor is a verbal structure that has the same set of characteristics as a physical object. The attractor of the concept is a linguistic sign that most fully and adequately conveys the essence of the concept and usually coincides with the dominant of the synonymous row [Stepanov, 2021].

In the past, we conducted a component analysis of the name of the DEATH concept using English lexicographic sources [Molhamova, 2019]. We separated common (cessation, biological functions, organism) and different (total, permanent, irreversible, ultimate, state, act, fact, cause, occasion, time) senses of the lexical meaning of the name of the DEATH concept.

Our analysis found out that the core meaning of the concept of DEATH, denoted by the word ‘death’, has minimal features and does not carry any significant cultural or personal connotations. This suggests that the concept of DEATH remains stable over time, accurately conveying its essence as an irreversible, final action or state in which all vital functions stop, physical and mental processes cease, and life ends. Death is a non-existence or loss of life that occurs for various reasons and at different times.

Fractals are created around the attractor of the concept. The term ‘fractal’ (Latin *fractus* – broken, small, fragmentary, Latin *frangere* – break, interrupt, form fragments) was coined by Benoit Mandelbrot, the founder of fractal geometry, in 1975. Currently, it is considered the primary tool of synergetics, a phenomenon where self-organization of systems resembles the structure of the previous ones on a large scale.

Fractals can be found in nature, such as in trees, and can be modeled on computers using recursive algorithms. The overall shape of the tree is similar to the shape of its branches, which is similar to the shape of its twigs and leaves. The algorithm’s recursive nature implies that the whole is statistically similar to each of its parts.

In the study of concepts, fractals represent the structure of the meaning of a concept around the attractor. This means that the meanings associated with a particular concept are arranged hierarchically in a pattern that resembles the attractor, which contains the most essential and accurate meaning of the concept.

The fractal nature of concepts implies that the functioning of the meanings associated with the concept is repeated on different levels of detail, with each level providing a more specific and detailed understanding of the concept. A fractal is an object or pattern that repeats itself on a smaller and smaller scale, while maintaining its overall shape and structure [Dombrovan, 2014, p. 112]. It is a self-similar object that looks the same at different levels of magnification. Fractals are characterized by their complex and irregular shapes, as well as their infinite length and limited area. This means that as you zoom in on a fractal object, you will continue to see smaller versions of the same object, repeating infinitely.

We align with the view of L.S. Pikhovnikova [2016, p. 185], who argues that “fractal is not necessarily a picture”. It could be a fundamental word in the verbal expression of a concept, or an artistic image that acquires new verbal characteristics having a self-similar meaning. The crucial aspect is to be able to establish the resemblance of the elements and the persistence of the structure when the scale changes, such as when new components are added and the scale increases.

It is important to note that the concept of fractals is not solely limited to visual patterns, as it also encompasses linguistic and artistic elements. Therefore, it is crucial to focus on the underlying structure of a concept rather than merely on its visual representation. The self-similarity of a fractal object can be exhibited through the recurrence of semantic connections, regardless of whether it is visual or verbal. Therefore, it is essential to analyze the semantic structure of a concept to determine if it has fractal characteristics.

To exemplify the fractality of the concept, we will use the DEATH concept and examine its usage in English discourse, based on the data available through COCA (The Corpus of Contemporary American English) [Davies, 2021]. This corpus is particularly useful due to its large data set and advanced data mining capabilities. We randomly selected 20 contexts that featured the lexeme *'death'* and identified five particularly noteworthy examples to illustrate the fractal nature of the DEATH concept.

By examining these examples, we can see that the concept of DEATH exhibits self-similarity across different scales. The same fundamental meaning is present in each context, even as the specifics of each situation differ. In this way, the concept of DEATH functions as a fractal, with a consistent structure that remains constant despite changes in context or scale.

These examples highlight the fractality of the DEATH concept in different ways. For instance, one example describes the death of a loved one, while another discusses the death of an animal. Despite the differences in context, the core concept of DEATH remains the same. Another example discusses death as a natural part of the life cycle, while yet another describes the impact of death on society as a whole. In each case, the concept of DEATH exhibits a consistent structure and meaning, demonstrating its fractal nature.

(1) *"Why is death any more incomprehensible than sneezing?" What a shocking, heartless sentiment, I thought, though I kept my thought to myself*" [Davies, 2021].

In this scenario, the concept of death acts as an attractor that creates fluctuations in the system when Speaker 1 makes comments that are unusual for Speaker 2. As a result, the system loses its stability, and Speaker 2 is presented with multiple options. At the point of bifurcation, Speaker 2 must choose one of these options, either by adhering to their accustomed view of death or by choosing a different perspective. Through this process, Speaker 2 dissipates their alien attitude towards death and returns to the previous attractor of the DEATH concept that they visualize in their mind. Ultimately, this stabilizes the system. The entire concept of death unfolds in Speaker 2<sup>nd</sup> mind, demonstrating the fractal nature of the concept as it repeats itself on different scales.

(2) *"Invalid credit card, empty wallet, closed road, immovable truck, and Fantastic Love near death from starvation. He fiddled under his chin with his left hand. His beard was bushy"* [Davies, 2021].

In this particular case, we can see that every element of the fractal concept of DEATH contains information about the whole. This is evident in the self-similarity of the structural components of the concept, which can be observed in the different lexical and semantic variants of the lexeme *'death'*. These microfractals, which make up the whole concept, exhibit an organized and interconnected outlook. Despite the fact that death is a natural and inevitable part of daily life, it is often viewed as an inescapable fate that is out of our control.

(3) *"Lisa orders cereal and a banana, then asks if I've read the paper. "No" has her telling me about a bouncer stabbed to death at an East Village nightclub when he tried to enforce the ban on smoking in restaurants and bars. She delivers details"* [Davies, 2021].

This scenario provides a clear illustration of the concept of recursiveness, which involves the description and visualization of an object or process within the same object or process. Recursiveness is evident in both the content and form of information presentation, as seen in the example of an individual chatting with friends and mentioning the death of an unfamiliar person at random times. In this situation, the same pattern of attractor-promoted fluctuations and bifurcations is likely to occur, as the topic of death is repeated and reflected upon in various ways.

Thus, we can see how the fractal nature of the DEATH concept is closely linked to the idea of recursiveness, as the self-similar structure of the concept allows for its repetition and reflection at various levels. This recursive pattern of repetition and reflection ensures that any part of the fractal contains information about the whole, allowing individuals to navigate and make sense of the complex and multifaceted concept of death.

(4) *"What could we say to them? That death comes on a pale gray horse; death takes what it wants, and when? We could tell them that perhaps Death himself takes no pleasure in it, that he's just prisoner to the system of the world like we all are"* [Davies, 2021].

This example clearly demonstrates that a fractal structure does not become simpler at any level. Each microfractal operates independently while also being a part of the larger whole. The self-similarity property guarantees that the concept of DEATH is perceived as a unified whole, even when viewed at different scales. This reflects the law of unity in diversity, which is a fundamental principle in the perception of complex systems. By embodying this principle, the fractal nature of the concept of DEATH ensures that all its features are reflected and preserved across different levels of analysis. Therefore, the fractal structure provides a comprehensive and multi-dimensional view of the concept, allowing for a deeper understanding of its various aspects.

(5) *"Their family is earning money from his death," Ahmad said [Davies, 2021].*

This particular example showcases the usefulness of fractality in revealing the dynamic nature of concepts, particularly in the social context where meanings and associations can evolve over time. Here, the concept of DEATH has acquired new meanings and associations as it becomes linked with money. This evolution can be seen as a fractal process where the new associations are built upon and interconnected with the existing ones, forming a complex and multi-layered structure. At each level of this fractal structure, we can see the same patterns and properties of the concept DEATH, but with new nuances and meanings that reflect its evolving nature. This fractal representation allows us to appreciate the complexity and richness of the concept and its social context, and to see how it continues to evolve and adapt over time.

## Conclusions

Based on the principles of synergetics, we have developed a comprehensive linguosynergetic model of the concept. By employing the theoretical and methodological tools of synergetics in the field of linguistics, we have elucidated the self-regulatory mechanisms that govern the concept functioning as a spontaneously formed component of a homeostatic hierarchical complex, which is positioned as an open nonlinear system. The model considers the dynamic nature of the concept and its capacity to adjust to modifications in the surrounding milieu while maintaining its structural integrity.

During our investigation, we demonstrated the self-similar nature of the concept and placed the attractor at its core. Our findings led us to the conclusion that the fractal structure of the concept is revealed through its fundamental traits, which include (1) self-similarity, meaning that the structure of the concept remains consistent regardless of the level of magnification; (2) dynamics, indicating that the concept is a subject to change over time; (3) non-regularity, implying that the concept is not uniform and may vary in different contexts; (4) recursiveness, denoting that the concept may contain smaller, self-referential structures within itself; and (5) fractionality, referring to the concept's ability to function as a whole while also having individual parts that can operate independently. These characteristics collectively add to the intricacy and abundance of the concept, making it a fascinating and dynamic area of study.

(1) The property of self-similarity of a fractal implies that each part of the fractal holds information about the whole. In the context of the concept, this means that even the smallest components, such as lexical-semantic variants, contain information about the entire concept. These microfractals function independently and contribute to the overall organization of the concept, exhibiting a structured and organized outlook. The self-similarity of the structural elements of the concept ensures that it can be understood and recognized at any scale or level of observation. This property is essential for the fractality of the concept, as it enables the preservation of its essential characteristics and attributes, while accommodating changes and variations in its expression and interpretation.

(2) Fractality is characterized by self-development of any part of the fractal, which is significant not only for concept modeling but also for concept dynamics. The development process of physical, biological, or social phenomena consists of a sequence of temporary and interdependent self-similar states or processes, which can be represented through fractals. Fractality helps to capture the dynamic nature of the concept, highlighting the evolution and interconnectedness of its various components over time. By understanding the self-similarities and interdependence of the concept's components, one can better comprehend the larger system in which it operates.

(3) Fractals do not simplify their structure as they increase in scale. The structure of each microfractal remains complex and able to function independently. However, the property of self-

similarity guarantees that the concept is perceived holistically, fulfilling the principle of unity in diversity. As the scale of the fractal increases, new microfractals appear, but the fundamental structure remains unchanged, allowing for a comprehensive understanding of the concept at any level. This aspect is crucial for modeling the concept and ensuring its integrity.

(4) Recursiveness refers to the idea of describing or visualizing an object or process within itself. It's like a situation where an object contains a smaller version of itself, and that smaller version contains an even smaller version, and so on. Recursiveness can be seen in both the content and presentation of information. It's like a never-ending cycle of repetition and reflection. For example, when discussing the concept of DEATH, we may describe the various aspects of it in a way that reflects the overall concept, resulting in a recursive pattern of information.

(5) The development of a fractal object can be divided into three stages – the initial phase of its existence, intermediate states, and the ending phase of its development. The initial and ending phases are referred to as attractors, which are states of high order and stability of the system. The intermediate states are characterized by fluctuations, which can lead to a bifurcation point where the system can either change and move towards a new attractor or return to the previous attractor through a dissipative process. The number of phases in this process is infinite and the initial and ending phases can be seen as transitional points between the lowest and highest levels of the fractal object's evolution.

This characteristic highlights the dynamic nature of fractal objects and the role of fluctuations in their development. It also emphasizes the importance of attractors, which are states of stability and order that a fractal object can reach. Bifurcation points are crucial in determining the direction of the system's development. This characteristic also suggests that the evolution of a fractal object is not limited to a fixed number of stages and can continue indefinitely, making it a complex and fascinating area of study.

Incorporating the principles of fractal theory within the field of linguosynergetics presents a novel approach for studying complex structures that exist across various scales and origins. This methodology allows for a more comprehensive analysis of the intricate relationships and interdependencies between the different components of these systems, as well as their evolution over time. By utilizing the tools and concepts provided by fractal theory, researchers in linguosynergetics can better understand and interpret the complex phenomena they encounter in their studies.

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## CONCEPTS THROUGH A LINGUOSYNERGETIC LENS (ON THE EXAMPLE OF THE CONCEPT OF DEATH)

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**Key words:** *linguosynergetics, concept, model, functioning, attractor, fractal.*

The article discusses the functioning of a concept from a linguosynergetic perspective as a spontaneous equipment of the structure of a homeostatic hierarchical complex organized as an open nonlinear system. The research is *aimed* to investigate the DEATH concept functioning from a linguosynergetic perspective and develop a model for understanding the synergistic interplay of linguistic and contextual factors in the conceptualization of death. To develop the main research hypothesis, general scientific *methods* like analysis, synthesis, induction, deduction, abstraction, explanation, and description are used.

This system is characterized as an open one because it constantly interacts with the external world and is nonlinear, meaning that it has various options for development at the bifurcation point, but only one is chosen. This continuous process of structuring is known as emergence, which means the concept can adapt to new meanings based on the realities of the world around it. Emergence is a result of the self-organizing mechanism, where the system is reorganized and spontaneously equipped with elements that allow it to move to a new level of operation, while maintaining balance by outputting information from the system's boundaries. However, the system is also influenced by external factors, which can cause conflict and lead to further reorganization. As a result, the emergence process is ongoing and dynamic, with the structure being both a consequence and a cause of the system's development.

Thus, the principle of self-organization, which is the key concept of synergetics, is founded on the notion of instability. In essence, self-organization refers to the spontaneous emergence of order in a system, which results from the interactions and interrelationships between the system's components. As such, the concept of self-organization is closely linked to the idea of nonlinearity, which posits that small changes in the system's components can lead to significant changes in the system's behavior as a whole. In other words, the behavior of the system as a whole is not simply a sum of the behaviors of its individual components, but is instead an emergent property that arises from the complex interactions between those components.

The formation of a new system is not merely a sum of its individual parts. This is, due to the way in which the components of the system connect with one another, a phenomenon known as coherence. Coherence acts as a means to coordinate the various components of the system so that they work together in harmony, rather than independently. Additionally, the system's components change at different rates and are of varying quality. This process is responsible for the system's evolutionary nature and reinforces the principle of evolutionary holism in synergetics. This principle is concerned with understanding the mechanisms by which the system's components come together to form a whole.

In summary, the concept is formed in the human mind through a collection of thoughts, which can take on various forms such as lexical and semantic fields, modes, frames, and emotions. The specific form the concept takes depends on the level at which the bifurcation point impacts the fluctuation of the conceptual structure and discursive environment. Essentially, the concept arises from a system that is in an unstable state and is subject to fluctuations that threaten its structure. When the system reaches the bifurcation point, the individual selects one of the possible models for the concept's development, and this results in a transition from "chaos" to "order" as the concept gains verbal representation.

The activation of a concept in one's cognition occurs at different intensities and is dependent on several factors. These factors include the individual's level of knowledge about the concept, their principles and beliefs, their interests, their life experiences, as well as extralinguistic factors. The activation of a concept can occur in varying degrees, with some individuals having a more profound understanding of a concept compared to others. Additionally, the process of concept activation can be influenced by external factors such as societal norms and cultural beliefs. Therefore, the way in which a person perceives and activates a concept is a complex and individualized process, influenced by both internal and external factors.

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