
RECURRENCE IN THE INTERDISCIPLINARY SPACE: FROM LINGUISTIC CATEGORY TO UNIVERSAL METHODOLOGICAL CONCEPT

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INTRODUCTION

Recurrence as a fundamental category, encompassing the idea of cyclic repetition, iterativity, and structural invariance, has a decisive influence on a wide range of modern fields of knowledge. Within the framework of mathematical modeling and the theory of dynamical systems, recurrence is considered as the ability of a system to return to states close to the initial ones, which was reflected in the classical works of the French mathematician Henri Poincaré¹. Within the framework of the general theory of systems, founded by Ludwig von Bertalanffy², recurrent processes act as a key tool for identifying patterns in complex structures. The research of the German theoretical physicist Hermann Haken³ demonstrated that in self-organized systems, it is the repetition and correlation of elements that allow the system to maintain integrity. This opens up new horizons for understanding linguistic phenomena, because repetition indicates the basic principles of information ordering. At the same time, the concept of interdisciplinarity is gaining increasing importance in the modern Western scientific space. According to the ideas of the French philosopher Edgar Morin⁴ regarding the «component of thinking», the integration of knowledge provides a comprehensive approach to solving scientific problems. In this context, recurrence appears as a methodological bridge that allows finding points of convergence between natural and socio-humanitarian fields.

¹ Poincaré H. The Three-Body Problem and the Equations of Dynamics / transl. B. D. Popp. New York : Springer, 2017. 248 p.

² Bertalanffy L. von. General System Theory: Foundations, Development, Applications. New York : George Braziller, 1968. 295 p.

³ Haken H. Synergetics: An Introduction: Nonequilibrium Phase Transitions and Self-Organization in Physics, Chemistry and Biology. Berlin : Springer, 1983. 390 p.

⁴ Morin E. On Complexity. Advances in Systems Theory, Complexity and the Human Sciences. New Jersey : Hampton Press, 2008. 127 p.

In the linguistic plane, recurrence as a means of ensuring textuality was studied in the works of European scholars Robert-Alain de Beaugrand and Wolfgang Dressler⁵. They emphasize that repetition is a necessary parameter of text cohesion. From a pragmatic point of view, as noted by the prominent Dutch linguist Ten van Dijk⁶, recurrent structures in discourse serve as tools for actualizing strategic meanings and influencing the recipient. In modern scientific discourse, the category of recurrence acquires new cognitive-discursive interpretations. In particular, the British researcher Christopher Hart⁷ in his recent works considers recurrent structures as key tools for constructing mental models in political and media discourse. He proves that the repetition of certain linguistic patterns not only structures the text, but also creates the effect of a «shared reality» between the author and the recipient. The interdisciplinary vector of recurrence in the context of digital communication is thoroughly analyzed by Christian Fuchs⁸. His research in 2022–2024 focuses on how recurrent algorithms and linguistic repetitions in social media form new digital ideologies. For Fuchs, recurrence acts as a mechanism for strengthening social meanings in the global information space. The issue of textual cohesion through the prism of computational linguistics and big data analysis is being developed by Danielle McNamara⁹. Her recent research confirms that the recurrence of lexical and syntactic units is a fundamental parameter for assessing the intelligibility and logical coherence of complex texts, which allows combining linguistics with cognitive psychology and IT technologies. The interdisciplinary potential of recurrence is further supported by studies in the field of research methodology¹⁰, complexity dynamics in communication¹¹, and quantitative analysis of recurrent patterns across natural languages¹².

The purpose of the article is to study the place of recurrence in the interdisciplinary space and analyze its impact on the formation of new knowledge and approaches to solving complex problems. The relevance of

⁵ Beaugrande R. de, Dressler W. U. Introduction to Text Linguistics. London : Longman, 1981. 286 p.

⁶ Van Dijk T. A. Discourse and Context: A Sociocognitive Approach. Cambridge : Cambridge University Press, 2008. 261 p.

⁷ Hart C. Ten Lectures in Cognitive Linguistics: Cognitive Critical Discourse Analysis. Leiden : Brill, 2024. 240 p.

⁸ Fuchs C. Digital Capitalism: Media, Communication and Society. *Volume Three*. London : Routledge, 2022. 342 p.

⁹ McNamara D. S., Graesser A. C., McCarthy P. M., Cai Z. Automated Evaluation of Text and Discourse with Coh-Metrix. Cambridge : Cambridge University Press, 2014. 278 p.

¹⁰ Tobi H., Kampen J. K. Research design: the methodology for interdisciplinary research framework. *Quality & Quantity*. 2018. Vol. 52, № 3. P. 1209–1225.

¹¹ Abney D. H., Paxton A., Dale R., Kello C. T. Complexity matching in dyadic conversation. *Journal of Experimental Psychology: General*. 2014. Vol. 143, № 6. P. 2304–2315.

¹² Guzmán-Vargas L., Almendral J. A., Leyva I., Marro J., Moreno Y. Recurrence networks in natural languages. *Entropy*. 2019. Vol. 21, № 5. P. 517.

the topic is due to the need for a deeper understanding of the mechanisms of interaction between different branches of science, as well as identifying the potential of recurrence as a method capable of promoting innovation and research that goes beyond traditional frameworks. Within this framework, it is important to explore how recurrence can serve as a bridge between disciplines, simplifying the process of generating new ideas and approaches in the modern interdisciplinary scientific environment.

1. Theoretical foundations of recurrence

Recurrence is defined as a property of a system or process characterized by repeating elements or structures. It plays a key role in mathematics, especially in the theory of recurrence relations, where the definition of the meaning of a sequence relies on its previous elements. For example, in recurrence relations, such as the Fibonacci sequence, each subsequent element is defined as the sum of the two previous ones: $F(n) = F(n-1) + F(n-2)$, which illustrates the foundations of recurrence in pure mathematics. Recurrence in linguistics, similar to Fibonacci numbers in mathematics, reflects the dependence of linguistic phenomena on their previous states, where each subsequent state can be viewed as the result of the interaction of the two previous ones, which allows us to study changes in pronunciation, word formation, and grammatical structures over time. As O. Honcharuk notes, the category of recurrence in the system of linguistic concepts appears as «a complex multi-level phenomenon that goes beyond simple linear repetition, integrating the properties of iterativity and invariance, which ensure the structural integrity of the language system in its diachronic development»¹³.

Let us imagine that we want to determine the meaning of a certain linguistic phenomenon ($F(n)$) based on two previous states of this phenomenon ($F(n-1)$ and $F(n-2)$). Where $F(n)$ is the current state of the linguistic phenomenon that we want to determine. $F(n-1)$ is the previous state of this phenomenon. $F(n-2)$ is the state that preceded the previous one. So, as an example, changes in the pronunciation of sounds: $F(n)$ is the pronunciation of the sound «а» in the modern Ukrainian dialect. $F(n-1)$ – pronunciation of the sound «а» in the previous generation. $F(n-2)$ – pronunciation of the sound «а» even earlier. Using this formula, one can study how the pronunciation of a sound changes over time, based on previous stages of language development. Another example: the formation of new words, where $F(n)$ – a new word that appeared in the language. $F(n-1)$ – words that existed before that, which influenced the

¹³ Гончарук О. М. Категорія рекурентності в контексті інших лінгвістичних понять. *Наукові записки Бердянського державного педагогічного університету. Філологічні науки*. 2024. № 22. С. 26–31.

formation of a new word (for example, by combining bases, adding suffixes, etc.). $F(n-2)$ – even more ancient words, which could also influence the formation of a new word through certain historical processes. In the context of word-formation nomination, as noted in recent research¹⁴, recurrence acts as a cognitive-derivative mechanism that ensures the continuity of the language system through the repetition of morphemic and semantic models. This allows us to consider neolexemes not as isolated units, but as the result of the recurrent interaction of already existing linguistic resources. Thus, recurrence helps to understand how new words arise on the basis of already existing ones, taking into account the previous stages of language development. This formula can also be used to determine grammatical changes. $F(n)$ is a modern grammatical construction. $F(n-1)$ is a previous version of this construction. $F(n-2)$ is an even older version. Recurrence allows us to study how grammatical rules and structures change over time, based on previous states of the language. It is important to note that the formula $F(n) = F(n-1) + F(n-2)$ is a simplified analogy. In linguistics, changes occur under the influence of many factors, and it is not always possible to reduce everything to such a simple dependence. The recurrent approach in linguistics helps to study the dynamics of language, its changes and development over time.

In the natural sciences, the concept of recurrence is also important. For example, in biology, recurrence can be reflected in population modeling, where the future abundance of a species depends on its past abundance. Also in physics, recurrent processes can be captured in the final forms of energy that repeat in cyclic systems, such as the rotation of planets or changes in the states of matter.

Recurrence is reflected in many scientific disciplines. In computer science, for example, recurrent algorithms are used to solve problems where each step depends on the previous one. This can include algorithms for data processing, pattern recognition, and computer graphics, allowing complex structures or behavior to be modeled.

In the social sciences, recurrence can be observed in the analysis of social processes. For example, the study of cycles of economic activity (booms and busts) can reveal regularities in the behavior of markets, which helps in predicting future trends. In psycho-emotional research, recurrent patterns can manifest themselves in the form of repetitive patterns of perception and response of individuals. This can be revealed through the analysis of behavior, where individuals constantly repeat the same reactions in similar conditions.

¹⁴ Гончарук О. М. Значення рекурентності у творенні слів. *Вісник науки та освіти. Серія «Філологія»*. 2026. № 3(45). С. 555–564.

Recurrence, therefore, becomes an important factor in understanding psycho-emotional contents and social interactions.

Historically, the concept of recurrence has its roots in ancient mathematical traditions. The first widespread examples can be found in the works of ancient Greek mathematicians such as Euclid, who studied arithmetic structures. However, the term “recurrence” began to be actively used only in the 19th century, with the development of mathematical analysis and number theory.

With the development of modern sciences, the concept of recurrence has become broader and more multifaceted. In the 20th century, improvements in computer technology led to an increase in interest in recurrent algorithms and their application in various fields, such as artificial intelligence and machine learning. This, in turn, has contributed to the spread of interdisciplinary research, where recurrent models have become the basis for innovations in science and technology.

Thus, recurrence acts as a powerful concept that unites different disciplines, providing new tools for studying complex phenomena and forming new solutions at the intersection of knowledge. In the modern interdisciplinary context, this concept is becoming increasingly significant, stimulating further research and the implementation of new methods.

2. Interdisciplinarity: definition and features

Interdisciplinarity is a concept that reflects the integration of knowledge, methods, and concepts from several academic disciplines to solve complex problems that cannot be adequately solved within a single field alone. It is based on the principle that many contemporary challenges, such as climate change, health care, technological progress, or social change, require an integrated approach, where different disciplines add their knowledge and methods to create a more holistic understanding. As emphasized in modern Ukrainian studies, «the interdisciplinary approach has become a strategy of scientific cognition that enables the study of objects as holistic self-organized systems»¹⁵.

For example, research in the field of health care often requires the integration of knowledge from medicine, psychology, sociology, epidemiology and economics, which allows for the most effective approach to the prevention and treatment of diseases. Interdisciplinarity is an important aspect of modern science, as it allows you to avoid narrow thinking and promotes the emergence of innovations. «Transdisciplinarity is considered the most progressive form of

¹⁵ Плющ О. М. Соціально-психологічні стратегії побудови суспільства. Кропивницький : Імекс-ЛТД, 2023. 124 с.

integration of sciences, which involves the formation of a common subject of research and a single methodological arsenal»¹⁶.

There are several approaches to the classification of interdisciplinary research, which can vary in the degree of integration and cooperation between disciplines. In general, three main categories can be distinguished. Multidisciplinary research is research in which different disciplines cooperate, but each of them remains separate. Each discipline contributes to the project, but does not integrate its concepts or methods into a single system. In the case of interdisciplinary research, different disciplines interact at a deeper level, combining their methods and concepts to form new approaches to the problem. For example, in ecological research, knowledge from biology, geography and social sciences is often combined to study the impact of human activities on the environment. The level of transdisciplinary research involves not only the fusion of different disciplines, but also the involvement of practitioners, policymakers and society as a whole. This is an approach in which scientists participate in the creation of knowledge that responds to global challenges, taking into account social, political and economic contexts.

The integration of knowledge from different fields is of critical importance for the development of science and society. First of all, it contributes to building a comprehensive understanding of complex problems, which allows for more informed decisions. For example, the problems of global warming require knowledge of ecology, economics, politics and technology, which allows for effective solutions to overcome them.

In addition, interdisciplinarity stimulates innovation. Combining different perspectives and approaches can lead to new ideas and developments that would not be possible within a single discipline. The role of interdisciplinarity is also important in shaping new forms of scientific cooperation and communication, which increases the effectiveness of research and changes the methods of scientific work.

In general, the integration of knowledge from different fields not only improves the quality of research, but also contributes to the creation of a sustainable society, as it allows for a better understanding of the complex components of social, economic and environmental issues.

3. The relationship between recurrence and interdisciplinarity

Recurrence can be considered as an effective methodological approach in interdisciplinary research. It allows us to understand the complexity of

¹⁶ Чайка Я. М. Трансдисциплінарність інтеграційних процесів у науці. *Академічні візії*. 2022. № 3.

systems where elements interact at different levels and in different contexts. Recurrent models help to identify patterns that can be applied in many fields of knowledge. This provides a deeper understanding of the dynamics of processes where repetition plays an important role.

Using recurrence, researchers can adapt their methods to the specifics of the problem under study, which allows us to create multifaceted models. This approach is of particular importance in complex systems, such as ecosystems, social networks or economic models, where elements of the system constantly interact and influence each other. Thus, recurrence becomes an important tool for creating integrated approaches in interdisciplinary research.

One of the illustrative examples of the use of recurrence in interdisciplinary research is the modeling of ecological systems. Scientists studying species interactions can use recurrent models to predict changes in populations over time. This helps predict how environmental changes, such as habitat loss or climate change, will affect biodiversity. Another example can be found in social science research, where recurrent models are used to analyze social networks. Researchers can identify recurring lines of interaction between individuals, which helps determine how information or resources are distributed in communities. This can be useful for developing social intervention strategies, combating misinformation, or improving communication between different social groups.

Recurrent models also play an important role in medical research, where the spread of diseases is studied. Researchers can use recurrent models to predict epidemics, which allows them to develop effective strategies for eliminating disease outbreaks by taking into account previous data on the spread of viruses.

The relationship between recurrence and interdisciplinarity has a significant impact on the formation of new knowledge. First, recurrence helps to identify and systematize knowledge that arises in different disciplines. The repeatability of certain processes or models in different contexts allows the formation of generally accepted patterns that can be used in new studies.

Second, the recurrent approach promotes the development of flexible modifications of theoretical models, which allows scientists to adapt their research to new circumstances and data. This is important in conditions of rapid changes in the scientific environment, where new technologies or discoveries can question existing paradigms.

Finally, recurrence allows for the active involvement of practitioners and specialists from different fields, which enhances the value of knowledge gained from interdisciplinary research. The interaction between theory and practice becomes more valuable.

4. Recurrence as an interdisciplinary vector in modern philology

Recurrence in linguistics goes beyond purely intralinguistic categories, appearing as a universal methodological bridge in interdisciplinary studies. In modern philological discourse, it allows us to understand language as an open self-organizing system, where the repetition of elements ensures not only the structural integrity of the text, but also the translation of socio-cultural and psycho-emotional content. Using recurrent models, linguists adapt methods of mathematical and systemic analysis to the specifics of linguistic material. This is of particular importance in linguosynergetics, where language is considered in constant interaction with the environment. In particular, recurrence becomes a tool for identifying patterns in large data sets, which allows us to create integrated approaches at the junction of philology and computer science.

At the level of cognitive linguistics, recurrence correlates with the concepts of frame and scenario. The recurrence of certain linguistic units in discourse activates stable mental structures in the recipient's mind, which allows us to study language in close connection with neuropsychology. In the digital age, linguistic structures become a key means of organizing social knowledge, overcoming the hermeticity of disciplines. At the level of cognitive linguistics, recurrence correlates with the concepts of frame and scenario. As Z. Pakholok notes, «the recurrence of linguistic units has an epistemological and ontological dimension, determining its key role in the formation of stable mental structures of the recipient»¹⁷. This allows us to study language in close connection with neuropsychology and opens the way to an interdisciplinary study of «digital traces» of thinking through the analysis of recurrent lexemes in social networks.

In the interdisciplinary space of «philology – cultural studies», recurrence is manifested through the reproducibility of cultural codes and precedent phenomena. The repetition of key mythologemes or literary allusions in modern texts is a recurrent process that ensures the continuity of collective memory. Here, philological analysis is intertwined with history and anthropology, where each recurrent element ($F(n)$) acts as a carrier of the genetic code of culture formed by previous eras ($F(n-1)$, $F(n-2)$).

One of the illustrative examples is the analysis of recurring language patterns to predict the emotional states of an individual. In psycholinguistics, recurrence is considered as a marker of suggestive influence. The use of specific phonetic or syntactic repetitions (anaphora, epiphora, gradations) allows not only to structure the text, but also to create a certain rhythmic pattern that affects the subconscious. This is of critical importance for media linguistics and

¹⁷ Пахолук З. О. Гносеологічний і онтологічний статус категорії повторюваності: мовний та мовленнєвий виміри. Луцьк : Вежа-Друк, 2013. 679 с.

the analysis of manipulative techniques, where recurrence serves as a tool for legitimizing certain ideologies.

In the «linguistics-law» field, recurrence modeling allows us to identify individual authorial style by calculating the frequency of specific language errors, pleonasms, or favorite syntactic constructions. This approach turns philological description into an evidence base in forensics.

Thus, recurrence in philology becomes a point of convergence of the humanities and exact sciences. It allows scientists to adapt their research to new circumstances, where language is integrated with artificial intelligence algorithms, forming new solutions at the intersection of knowledge about humans, society, and technology.

5. Case Studies

Recurrence plays a key role in information technology and computer science, where its applications span a variety of areas, from algorithms to programming. One of the most notable examples is recurrent neural networks (RNNs), which are used to process sequential data, such as text or time-based signals. These models are able to remember information about previous states, making them particularly effective for tasks where context is important, such as automatic translation, speech recognition, and text generation.

Recurrent algorithms are also used in various areas of programming, including recursive functions that help simplify code and reduce the complexity of tasks. This is especially evident in solving problems involving data structures, where recurrence allows for elegant navigation and processing of information.

The recurrent approach has also found its application in the development of training methods for artificial intelligence, including deep learning. The use of recurrent networks in this field further increases the accuracy of models when processing data that contain temporal or spatial dependence, which, in turn, provides significant progress in automated technologies.

In the social sciences, recurrence helps to study and analyze the lines of behavior, relationships, and influences between individuals and groups. Social network studies, in particular, actively use recurrent models to identify regularities in human relationships and behavior. For example, the analysis of repeated communications can help to identify connections and influences within social groups, which allows you to study the dynamics of the popularity of information.

In psychology, recurrence has also found wide application, in particular in the study of behavioral patterns and emotional states. For example, a recurrent model can be used to analyze the reactions of an individual in stressful or emotionally charged situations, allowing you to track patterns in their

experiences and reactions, which leads to an understanding of the mechanisms of mental health.

Taking into account recurrent elements in the social sciences allows you to create more detailed models that include the recurrence of events, for example, the cyclicity of conflicts or cooperation in different social contexts. Using these models, researchers can make predictions about future behavior and relationships between participants in social processes.

Examples of successful interdisciplinary research that uses recurrence can be found in fields such as energy, healthcare, and data science. For example, in the field of health, studies of the impact of socioeconomic factors on population health often use recurrence models to analyze data, allowing them to detect seasonal and trend effects in the spread of diseases.

In climate change research, recurrent models are widely used to predict weather patterns and to study the impact of interdisciplinary factors such as changes in agronomy, economics, and resource management systems. For example, in integrated models that analyze the impact of climate change on agronomic systems, recurrent models are used to predict crop yields, irrigation systems, product price elasticity, and socio-economic impacts on agriculture. This allows agronomists, economists, and ecologists to jointly develop strategies for adapting to climate change. Another example of successful interdisciplinary research using recurrence can be found in the field of cinema, where sociologists, cultural scientists, and technologists collaborate to understand recurring motifs in films and their impact on cultural context. Studies can use recurrent algorithms to analyze scripts and identify recurring themes, characters, and narrative structures, which can shed light on how different films influence societal behavior and values.

Another important area is energy, where recurrent models are used to predict energy consumption in cities based on seasonal and diurnal patterns of use. For example, collaborative research between energy, urban, and social scientists can reveal how changes in the popularity of renewable energy sources such as solar and wind power affect consumption patterns and integration into energy systems. This allows for better planning of infrastructure projects, reducing the strain on the energy grid.

Thus, recurrence is proving to be a powerful methodological foundation in interdisciplinary research, as it allows scientists to track and analyze patterns and recurring elements across different fields. The use of recurrent models opens up new horizons for effectively solving complex problems facing modern society. It promotes the integration of knowledge and practices, forming new approaches to scientific activity and the application of acquired knowledge in the real world.

6. Challenges and prospects

Despite the significant potential of interdisciplinary research, its implementation faces a number of challenges. First, one of the main barriers is the lack of common terminology and conceptual frameworks across disciplines. Differences in methods, approaches and scientific traditions can make communication and collaboration between researchers difficult.

Second, there is a clear structure of academic institutions that prevails in many institutions, where scientists usually specialize in one discipline. This can lead to insufficient motivation for joint projects, as scientists face bureaucratic obstacles, funding constraints and insufficient support from management.

Furthermore, maintaining a balance between focusing on specific issues of a single discipline and being open to interdisciplinary topics can be problematic. Undoubtedly, scientists face challenges in managing the time and resources required to conduct complex research, as interdisciplinary projects usually require more time for planning and implementation. The prospects for the development of recurrence in an interdisciplinary context look promising. After all, recurrence, as a methodological approach, can actively contribute to the integration of knowledge, scientific practices and approaches to solving complex problems. Recurrent models allow not only to identify patterns, but also to reinterpret them in different contexts, which can lead to the generation of new theories and concepts.

The transition to new technologies, in particular to big data processing, artificial intelligence and machine learning, opens up new opportunities for the use of recurrence in interdisciplinary research. Thanks to these technologies, scientists can efficiently process large volumes of data, identify complex patterns and relationships that previously remained unnoticed.

The growing interest in sustainable development and global challenges, such as climate change, human-nature interaction, social justice, provides new incentives for interdisciplinary research, in which recurrence can play an important role. It can help researchers create and test models that combine environmental, social and economic aspects, allowing them to achieve better results in solving complex problems.

To overcome the challenges and maximize the potential of recurrence in interdisciplinary research, it is advisable to consider several recommendations. Promoting collaboration and communication – researchers should actively interact across disciplines, organizing seminars, working groups, and conferences to exchange ideas and experiences. Developing a common terminology – this means that the creation and use of common terms and concepts across disciplines can help remove barriers to communication and facilitate the integration of

research. Supporting university initiatives – educational institutions should encourage and support interdisciplinary research by allocating resources to fund joint projects.

CONCLUSIONS

The study examined the importance of recurrence as a methodological approach in interdisciplinary research. An in-depth analysis of various aspects of recurrence and its applications across a wide range of sciences revealed that recurrent models have significant potential for integrating knowledge and innovation. The study confirmed that recurrence provides the ability to systematize complex data and identify recurring patterns, which in turn makes it possible to develop more effective strategies for solving global problems.

Examining specific examples of successful interdisciplinary research, such as population modeling in ecology, social network analysis in social sciences, and forecasting in energy, illustrates how recurrence simplifies the processing of complex phenomena while hindering the simultaneous integration of concepts from different disciplines.

Recurrence plays an important role in interdisciplinary research because it transcends the traditional boundaries of individual scientific disciplines. This approach allows researchers to identify connections and patterns that may remain unnoticed in the context of monodisciplinary research. Recurrence not only allows for the formation of new theoretical models, but also contributes to the formation of practical applications of the acquired knowledge to solve real problems. Due to its universality, recurrence serves as a bridge connecting different theories, approaches and methods, which, in turn, stimulates the development of innovations and changes paradigms in scientific communities.

Further research in this area can focus on several key areas. First, it is relevant to study in detail the application of recurrent concepts in the so-called “emerging disciplines”, that is, new sciences such as bioinformatics, neuroscience and social technologies. The study of how recurrent models can be integrated into the memory of artificial intelligent systems can also open new horizons in the field of machine learning.

Secondly, it is necessary to explore methodological approaches to overcome the challenges associated with the implementation of interdisciplinary research. This includes identifying optimal strategies for forming teams that unite different disciplines and developing standards for common terminology and evaluation of research.

Last but not least, there is the need to study practical applications of recurrence to achieve socio-economic and environmental goals. This may include the analysis of successful cases that demonstrate how recurrent models

can be used to improve people's lives, eliminate inequalities, or ensure resilience to climate change.

A separate promising direction for further studies is the development of a comprehensive typology of linguistic recurrence within the anthropocentric paradigm. This involves a transition from the description of formal repetitions to the modeling of recurrent processes as cognitive mechanisms for the formation of meaning. The study of the "recurrent memory" of the text in artistic discourse is considered relevant, in particular in the thriller and action-packed prose genres, where the repetition of phonetic, lexical, and compositional elements acts as the main tool for creating psychological tension (suspense). Such an approach will allow for a deeper understanding of the pragmatics of the text's impact on the recipient, involving data from neurolinguistics and the psychology of perception to verify the results obtained.

In addition, the integration of recurrent analysis into the field of digital philology and linguistic forensics has significant potential. The use of a mathematical model of recurrence for the analysis of large amounts of text data opens up opportunities for the creation of algorithms for automatic recognition of individual style and the detection of manipulative strategies in the media space. The study of recurrent models as markers of idiosyncrasy will allow reaching a new level of objectivity in linguistic examinations, where language is considered not as a static structure, but as a dynamic process that self-organizes under the influence of the recurrent interaction of its elements.

Thus, the results of the study emphasize the significance of recurrence in interdisciplinary research and form a solid foundation for further research that will contribute to the expansion of knowledge and the introduction of innovations in the modern scientific world.

SUMMARY

The article is devoted to the study of recurrence as a fundamental scientific category in the interdisciplinary space. It is established that recurrence, being primarily a concept of mathematics and the theory of dynamical systems, acquires a universal methodological status in modern scientific discourse. The theoretical foundations of recurrence in the natural, social and human sciences are analyzed, in particular in linguistics, cognitive studies, information technologies and social research. The specificity of recurrence as a linguistic category is determined: its correlation with the concepts of frame and scenario, the role in ensuring text cohesion, as well as the potential in the field of linguistic synergetics, media linguistics and linguo-forensics. It is proved that recurrence serves as a methodological bridge between the exact and human

sciences, enabling the identification of universal patterns in complex systems. The challenges and prospects of interdisciplinary research involving recurrent analysis are characterized, in particular regarding digital philology and automatic recognition of individual style. The prospects of further studies related to the development of a typology of linguistic recurrence in the anthropocentric paradigm are outlined.

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