# Cognitive Science and the Study of Syntactic Speech Construction: Modern Issues

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**ABSTRACT**

This article deals with the problem of applying the discourse approach to the analysis of different types of texts, which is of paramount importance for modern linguistics. The **subject** of the study is the syntactic structure of different types of contemporary media texts. The **purpose** of the research is to broaden the ways of the discourse analysis with the help of cognitive science. The **relevance** of the topic of the present paper is determined by the rapid development of studies in the sphere of cognitive linguistics and the need to apply the latest approaches to the analysis of the syntactic structure of speech. The **scientific novelty** lies in the fact that the authors single out modern trends in syntactic analysis of speech construction on the example of contemporary media texts and give an outlook on further significant developments in the sphere, discussing the issue of developing and optimizing telescopic texts for the purposes of modern science, management, education and other essential spheres of life. Within the framework of the present study, the authors used the **methods** of system analysis, analysis of statistical data, official documents and works of the consummate professionals in the sphere of the cognitive science. Based on the **results** of the research, it was revealed that modern technologies give marvellous opportunities to create a specific digital data format of various texts, associated development and display tools. The authors **concluded** that the "telescopic text" is now becoming a way for effective digital communication and information exchange.
*Keywords:* cognitive linguistics; discourse; cognitive syntax; communication; media discourse; telescopic text; technology telescopic text; telescopic interface

# Когнитивная наука и исследование синтаксической структуры речи: актуальные проблемы

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**АННОТАЦИЯ**

Данная статья посвящена проблеме применения дискурсивного подхода к анализу различных типов текстов, что имеет первостепенное значение для современной лингвистики. **Предметом** исследования является синтаксическая структура разнообразных видов современных медиатекстов. **Цель** исследования — расширение спектра способов анализа дискурса с помощью когнитивной науки. **Актуальность** темы настоящей работы определяется стремительным развитием исследований

в области когнитивной лингвистики и необходимостью применения новейших подходов к анализу синтаксической структуры речи. **Научная новизна** заключается в том, что авторы выделяют современные тенденции в синтаксическом анализе построения речи на примере медиатекстов и дают прогноз относительно развития дальнейших значимых событий в данной сфере, обсуждая вопрос разработки и оптимизации телескопических текстов для целей современной науки, управления, образования и других важнейших сфер жизни. В рамках данного исследования авторы использовали **методы** системного анализа, анализа статистических данных, официальных документов и работ непревзойденных профессионалов в области когнитивной науки. По **результатам** исследования было выявлено, что современные технологии дают прекрасные возможности для создания определенного цифрового формата данных различных текстов, сопутствующих средств разработки и отображения. Авторы пришли к **выводу**, что «телескопический текст» сегодня становится способом эффективной цифровой коммуникации и обмена информацией.

*Ключевые слова:* когнитивная лингвистика; дискурс; когнитивный синтаксис; коммуникация; медиадискурс; телескопический текст; технология телескопического текста; телескопический интерфейс

## Introduction

At the present stage of the development of science, one of the most progressive approaches to the study of the syntactic constructions of oral and written speech is the discursive approach. At the end of the 20th century, a new branch of linguistics emerged — cognitive linguistics: "A new branch of linguistics emerged in the last decades of the 20th century — cognitive linguistics. The real understanding of speech is possible when many aspects are taken into consideration, not only purely linguistic ones, but everything that accompanies our speech — the whole discourse". [1, p. 138–139]. In this connection, a new paradigm, the "cognitive-discursive" paradigm, emerges [2]: "The end of the 20th century was marked with the emergence of the new scientific paradigm: functionalism together with cognitive science were recognized as a new turn in linguistics. The performance of every new knowledge paradigm is invariably linked to reconsideration of those heritages which it gains from the previous paradigms and, mainly, from the fundamental ideas comprising the topical area in science. Such situation has also influenced the definition of language per se within the cognitive science which considers it as an access arrangement to the brain's functions, mental activity and processes performed by the person" [3, p. 298].

The term "discourse" can be considered one of the most popular and widely used in the modern humanities [4]. With all the variety of existing today's definitions of this concept, specialists in different fields of knowledge talk about such types of discourse as personal and institutional, everyday and everyday life, computer and newspaper, cultural and culturological, political and publicistic, philosophical and scientific, religious and pedagogical, business and advertising, medical and mass information; in addition, researchers distinguish the discourse of reports and interviews, narrative and poetic, monological and dialogic, written and oral. The functions and structure, substantive and formal coherence, modal characteristics, and many other properties of discourse are closely studied.

It should be noted that originally the term "discourse" in the French linguistic tradition meant speech in the general, broad sense of the word. In addition, in the early stages of research on these problems, the concepts of "text" and "discourse" were used by many linguists as interchangeable terms: the term "text" was used in relation to written communication, and "discourse" — in relation to the oral one. With the development of the pragmalinguistic branch in the description of language, these terms began to differentiate, and under the notion 'discourse' began to be understood "the text immersed in the context of language communication and interaction" and, more widely, "the text together with its communicative-pragmatic context" [5, p. 125]. E.O. Mendzheritskaya offers the follow-

ing definition of discourse: "discourse is the transmission of the cognitive content invested by the addressee to the addressee through the text in its linguistic embodiment and certain strategies of information presentation embedded in it" [6, p. 53].

The researcher E. S. Kubryakova points out the connection between the concepts of "text" and "discourse": "From the cognitive and linguistic point of view, the concepts of discourse and text are connected, among other things, by a cause-effect relationship: a text is created in a discourse and is its brainchild". [7, p. 73]. According to E. S. Kubryakova, the angle of consideration of these concepts is different because discourse is an activity immersed in life, and the study requires taking into account all the social parameters of what is happening, as well as all the pragmatic factors of its implementation. It seems impossible to analyse discursive activity without cultural and socio-historical data, without information about who, for what purpose, under what conditions, and from what positions the discursive activity was carried out. The text can be analysed in the abstract from many of the factors in the list above. The researcher is satisfied with what can be extracted from the text as such and thus studies it "as a complete linguistic work" [7, p. 73].

## Further prospects of cognitive analysis application

Many modern scholars note the fact that the analysis of discourse should be carried out taking into account not only linguistic but also extra-linguistic features. Professor O. V. Aleksandrova points this out in her article "On the problem of contemporary discourse in linguistics": "Many of the contemporary scholars point out that the analysis of discourse is focused on the linguistic knowledge based on the level above words, phrases or sentences and, mainly, on the context of not only linguistic, but also extralinguistic nature". [3, p. 300]. The same idea is reflected in the monograph by E. S. Kubryakova "Language and knowledge: On the way of obtaining knowledge about language"...: "The cognitive approach is associated not only with the consideration in a new light of different linguistic processes, categories and units. In

essence, it is connected in linguistics with the new understanding of language as such: if it is necessary to involve not only own linguistic knowledge, but also extra-linguistic knowledge in processing of texts, the basis of new models of language should be the thesis of interaction of various types of knowledge...". [2, p. 45].

It should be highlighted that the discourse analysis is very closely connected with the syntactic studies: that is about how we construct speech to make it understandable for the audience. The structure of a language cannot be described and explained unless we treat it from the point of view of functions it fulfils within a particular language, and the most important is the communicative function. Discourse analysis is very often associated with the communicative phenomena, which include not only the fact of its creation, but also its dependence on many extralinguistic factors" [1, p. 139–140]. In addition, the connection between cognitive linguistics and pragmatics within the framework of the discourse approach to the study of speech construction is emphasized: "Discourse analysis is the subject of cognitive linguistics and here pragmatic studies in fact go in the same direction with cognitive studies" [1, p. 140].

Due to the formation of ideas about cognitive science in general and cognitive linguistics in particular, the term "cognitive syntax" was established in science. [8, p. 220]. Cognitive syntax is based on the transition from the formal logical level to the level of thoughts, feelings, and psychology of the addresser and addressee of information when analysing grammar. The researchers consider the theory of expressive syntax developed by Professor O. V. Aleksandrova and her students to be the basis of this approach [9]. It is worth mentioning that, due to the development of the discourse-cognitive paradigm, modern linguistic science pays much attention to the strategies of information presentation and their linguistic embodiment. Of particular interest to modern scientists is the study of the so-called "quality press".

Discourse is a cognitive process and, therefore, includes the peculiarities of presentation, delivery, and perception of information. Researcher E. O. Mendzheritskaya notes that syntax plays a crucial role in these processes:

"It is the syntactic organization of speech that allows not only to convey information to a certain target audience, but also to influence the readers' opinion, ensuring the adequacy of perception". [8, p. 223]. The analysis of sources takes place at several levels: 1. Minor syntax (word-combination); 2. Major syntax (sentence, division into sentences, division into paragraphs, paragraph structure, text structure).

In addition to the so-called "quality press," researchers are also interested in analysing the texts of glossy magazines, whose linguistic strategies depend directly on the characteristics and needs of the target audience. On the basis of the study of the structure of many well-known publications, it is concluded that "publicistic discourse is not only a textual structure, but is a complex phenomenon that takes into account both the extralinguistic situation and the characteristics of the participants in communication, and the various strategies underlying news production, as well as their respective linguistic, particularly syntactic, framing" [8, p. 223–224]. For example, magazines can be distinguished by gender, age, social status, readers' hobbies, etc.

**Telescopic texts: the modern outlook**

Another significant branch that started its rapid development within the sphere of cognitive studies nowadays is the use of artificial intelligence for efficient construction of multidimensional text spaces. The end of the twentieth and the beginning of the twenty-first century was marked by fast growing information technologies in almost all areas of life [10]. Transmitting data over long distances has no longer been a problem. The ability to provide data almost immediately on demand in any volume should have significantly increased the efficiency of communication, and along with it, productivity, business profitability, quality of education, etc. Powerful data channels created the illusion of complete information transparency, which has become of paramount importance in today's civilized society.

In addition to the provision of efficient data transmission channels and easy access to databases from almost any part of the globe, humanity still lacked one important tool — a mechanism for structuring data in a format ensuring efficient decision-making — to really solve the issue of building an effective information space.

The solution to this problem is the prerogative of the cognitive sciences. The way of effective data structuring and generalization for decision-making lies simultaneously in the sphere of cognitive science, neuropsychology, logic, mathematics, and structural linguistics.

"Telescopic text" is an iterative optimization of an information message of any complexity, which aims to adapt it to a particular consumer, based on their current needs, level of culture, general and professional qualifications.[1]

Optimization is carried out within a single interactive electronic environment by bringing digital, linguistic or logical-symbolic type of information message to another simplified or complicated type or types while maintaining the same thesis through the implementation of mathematical, logical and linguistic simplification/complication of judgments, expressions and graphic representation of information (abstracting, emphasis, structuring, element by element linking, context rotation, etc.).

"Telescopic text" is a multiformat client-oriented interactive environment for presenting information simultaneously to different categories of users, providing an end-to-end balance of key semantic accents and stable logical-syntactic structure.[2]

Through a special interface, the user adjusts the multidimensional text of the report according to their targets or needs, while the report creator puts different "meanings" and emphasis schemes into it depending on the target audience (and thereby controls the perception).

The "telescopic interface" allows the reader to adjust the content of the material "to his needs", based on the level of awareness, education, culture, professional training, and the creator — to put into the text different "meanings" and patterns of emphasis depending on the target audience (government agencies, investors, financiers, industrialists, etc.). The interface allows to make the perception man-

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[1] URL: https://ria.ru/20110627/394160790.html?ysclid=ld3bcy-hc6z770187966

[2] Konurbaev M. E. Telescopic text: facets of creativity — levels of perception. Moscow: RA Expert; 2007.

ageable, directing the thoughts and conclusions of the readers in the right direction.

There are four tools at the heart of creating a telescopic text: structuring, abstracting, linking, accentuating. The text of the report is split into levels of detail, elements of text and graphics are linked to each other and to external sources of argumentation. Visualized accents are created in the most important places. Public documents are presented in several versions for different groups of readers (financiers, strategic investors, industrialists, etc.). The possibilities of the format allow to make the perception manageable, directing the course of thoughts and conclusions of the readers in the necessary direction.

The technology is based on the idea of the human thinking process as a symbol-oriented system. According to this concept, human consciousness operates not with a linear flow of text, but with a set of symbols, each of which contains a set of experiences of a different nature — acoustic, visual, tactile, logical, verbal, etc., — united in a conditionally stable symbolic system.

The main characteristic of a symbol is its broad informativeness, realized at the expense of a system of internal connections. Thus, in the symbol evoked by the word "flower", the reader will uncover an infinite number of experiences from his or her own and collective experience. At the same time, only a small verbal trigger with a threshold informativity of 12 bytes is required to invoke this immeasurable array of experiences. Telescopic text technology uses the information capacity of a symbol as the basis for building an innovative information model.

"Telescopic text" is an array of information organized into a hierarchical symbolic system capable of collapsing and unfolding levels of information detail as the user wishes. This technology makes it possible to create a fundamentally new type of symbolic messages that are simultaneously consistent with the principles of human thinking and do not contradict the traditional linear structure of the text. "Telescopic text" is a tool for effective digital communication in all spheres of social life, including management, education and mass media.

## Conclusion

In conclusion, it should be noted that human consciousness and thinking are constantly changing and being renewed over time. People in the process of communication create different discourses as well as media. This happens thanks to globalization, the development of the Internet and other means of data transmission. Thus, more and more opportunities for the formation of various discourses as well as media discourses through blogging, communication in forums, communities, and social networks are opening up.

At the same time, new technologies allow to create a specific digital data format and associated development and display tools. Development of an effective tool for processing and automatic summarization of information (artificial intelligence) is one of the burning questions of the contemporary science. It should be noted that technologies for structuring arrays of essential information should not lag behind the development of information transmission channels. Lagging can lead to uncontrollable growth of data volumes, increasing information noise, preventing effective management of ongoing processes.

## REFERENCES

1. Aleksandrova O. V., Komova T. A. Modern English Grammar: Morphology and Syntax. Moscow: Publishing Center "Academy"; 2013. 218 p. (In Russ.).
2. Kubryakova E. S. Language and Knowledge: Toward a Knowledge of Language. Parts of speech from a cognitive point of view. The role of language in cognition of the world. Moscow: Languages of Slavic Culture; 2004. 560 p. (In Russ.).
3. Aleksandrova O. V. On the Problem of Contemporary Discourse in Linguistics. *Journal of Siberian Federal University. Humanities & Social Sciences.* 2017;10(3):298–302. DOI: 10.17516/1997–1370–0037
4. Melnikova O. T., Kutkovaya E. S. The Discursive Approach to the Study of Identity. *Moscow University Psychology Bulletin.* 2014;14(1):59–71. (In Russ.).
5. Susov I. P. Semiotics and linguistic pragmatics. Kalinin: Publishing house of KSU; 1980. 51 p. (In Russ.).

6.    Mendzheritskaya E. O. The term "discourse" and the typology of media discourse. *Moscow State University Bulletin. Journalism Series.* 2006;(2):50–55. (In Russ.).

7.    Kubryakova E. S. On the text and the criteria of its definition. *Structure and semantics.* 2001;(1):72–81. (In Russ.).

8.    Mendzheritskaya E. O. Cognitive Syntax of Modern English: Subject and Principles of Analysis. *Samara State University Bulletin.* 2009;7(73):219–225. (In Russ.).

9.    Aleksandrova O. V. Problems of Expressive Syntax. Moscow: URSS; 2009. 211 p. (In Russ.).

10.    Klimova I. I., Kozlovtseva N. A., Konurbaev M. E. New Forms of Scientific Interaction in the Era of Civilizational Shift. *Humanities and Social Sciences. Bulletin of the Financial University.* 2021;11(2):41–46. (In Russ.). DOI: https://doi.org/10.26794/2226–7867–2021–11–2–41–46

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