ЯЗЫКИ НАРОДОВ ЗАРУБЕЖНЫХ СТРАН (С УКАЗАНИЕМ КОНКРЕТНОГО ЯЗЫКА ИЛИ ГРУППЫ ЯЗЫКОВ) / LANGUAGES OF PEOPLES OF FOREIGN COUNTRIES (INDICATING A SPECIFIC LANGUAGE OR GROUP OF LANGUAGES)

ENGLISH COMPUTER DISCOURSE IN THE CONTEXT OF STRUCTURAL-SEMANTIC ORGANIZATION

Research article

Yaroslavtseva E.F.[1], *
[1] ORCID : 0000-0002-3114-7596;
[1] M.I. Platov South Russian State Polytechnic University, Novocherkassk, Russian Federation

* Corresponding author (corrida7727[at]yandex.ru)

Abstract

The article is devoted to the study of elements of various sign systems that implement the semantics of English-language computer discourse and ensure the internal integrity of the message and its figurative-cognitive content; the structural and compositional features of the design of English-language computer communication within the framework of the semantic approach are analyzed. The purpose of this work is to identify English-language computer discourse in the context of its structural and semantic characteristics. The scientific novelty of the study is seen in the fact that today, the semantic approach assumes a traditionally pragmatic description of discourse in semiotics, which equates the meaning and situational use of an utterance. Based on linguistic analysis, it has been established that semantic description makes it possible to describe discourse based on its meaning-generating form, since the syntactic form of discourse has the ability to generate meanings.

Keywords: computer discourse, sign system, sign, semantics, communicative act.

АНГЛОЯЗЫЧНЫЙ КОМПЬЮТЕРНЫЙ ДИСКУРС В КОНТЕКСТЕ СТРУКТУРНО-СЕМАНТИЧЕСКОЙ ОРГАНИЗАЦИИ

Научная статья

Ярославцева Е.Ф.[1], *
[1] ORCID : 0000-0002-3114-7596;
[1] Южно-Российский государственный политехнический университет им. М.И. Платова, Новочеркасск, Российская Федерация

* Корреспондирующий автор (corrida7727[at]yandex.ru)

Аннотация

В статье проведено исследование элементов различных знаковых систем, реализующих семантику англоязычного компьютерного дискурса и обеспечивающих внутреннюю целостность сообщения и его образно-когнитивного содержания, проанализированы структурно-композиционные особенности оформления англоязычной компьютерной коммуникативности в рамках семантического подхода. Цель исследования – определение англоязычного компьютерного дискурса в контексте его структурно-семантических характеристик. Научная новизна исследования видится в том, что на сегодняшний день, семантический подход предполагает традиционно-прагматическое описание дискурса в семиотике, которое уравнивает смысл и ситуативное употребление высказывания. На основании лингвистического анализа установлено, что семантическое описание позволяет описать дискурс с опорой на его смыслопорождающую форму, поскольку синтаксическая форма дискурса обладает способностью генерировать смыслы.

Ключевые слова: компьютерный дискурс, знаковая система, знак, семантика, коммуникативный акт.

Introduction

In the modern linguistic context, discourse is usually considered as a complex unit formed by a sequence of sentences united by a certain semantic connection. Native speakers of any language have at their disposal a key principle that allows them to track the process of semantic interactions between units at almost any level of discourse. This key principle, operating at all levels of the language system: phonetic, morphemic, lexical and syntactic, allows:

– easily deploy discursive structures with traditional semantics;
– manage the composition of structures when creating non-traditional meanings.

The relevance of this study is embodied in the fact that modern linguistics pays close attention to the semantic aspect as a means of revealing the communicative essence of language. In addition, human cognitive activity is directly based on the content side of language, which is included in the field of study of many sciences that study the process of formation and transmission of knowledge, among which are both computer science and linguistics.

The object of this study is one of the common types of discourse today – computer discourse. The term "computer discourse" can have two interpretations. On the one hand, it can imply any type of communication using a variety of electronic communication signals in computer networks. On the other hand, communication within the framework of computer topics, taking into account its characteristic features, can also be defined as computer discourse. Both interpretations of computer discourse are relevant for this study.

Based on the intended goal, the following ***tasks*** are identified:
– determine the definition of discourse within the semantic approach;

– consider the language system in which the semantics of English-language computer discourse is manifested;

– analyze the structural and compositional means used to design computer communication in English.

Research methods and principles

The choice of research methods is determined by the purpose and set of tasks. The search for the studied language constructions was carried out using the continuous sampling method. The descriptive-analytical method made it possible to describe the linguistic material and create a structural classification of comparative constructions. Inductive and comparative methods were used to identify similarities and differences between the constructs under study.

The practical significance of the study lies in the need to identify the features of compositional means used to design computer communication in English. In the future, the main provisions, results and conclusions of the study can be used in the methodology of teaching English to develop teaching aids and complexes, as well as in classes on a practical English language course.

Main results

A sequence of statements that contain information reflecting the interaction of objects, phenomena and situations in both the material and spiritual spheres forms verbal communication.

The purpose of verbal communication is reduced to the implementation of a cognitive act, i.e.the process of establishing connections between material and spiritual phenomena, as well as notifying the recipient of communication about the results of their own knowledge of an object or event. The purpose of such notifications is to stimulate the addressee to perform certain actions of an intellectual or material nature.

To carry out a communicative act, it is usually necessary both for the addressee to have a high level of language proficiency and to use a sufficient level of background knowledge that underlies the adequate perception of certain information. It is necessary to take into account the immediate level of knowledge of the receiving party in the process of generating and addressing discourse, since the manner of presentation and structure of the latter are usually determined by the volume and specialization of the addressee's knowledge. Within the framework of communication, discourse implements information connections between communicants who have a certain level of knowledge that ensures understanding and assimilation of the relevant material by each party. The addresser and the addressee must have an equivalent language component. The degree of equivalence of the thesaurus of the communicating parties determines the degree of effectiveness of the cognitive side of communication, that is, complete or partial perception and understanding of the content of communication. With equal linguistic competence, the thesaurus of communicants is considered as an integral component of the cultural and scientific competence of the latter.

Firstly, linguistic competence is an effective condition for the communicant to form and send information to the addressee, and secondly, it ensures the necessary degree of perception by the addressee of this information. Consequently, the linguistic units structuring this information must have a meaningful plan, since this characteristic serves as the basis of communication as such, while the meaningful nature of linguistic units is ideally determined not by structural parameters, but by the real features of the time period of reality, which forms the semantic basis of the linguistic units used.

Being presented within discourse as a context with a certain duration and dynamic deployment, the semantic properties of linguistic signs in most cases demonstrate a significant difference from the semantic properties of the same signs, but considered separately or in a short context. In this regard, first of all, we are talking about the sentence as the main linguistic unit [6, P. 327].

At the same time, the study of textual connections of a sentence underlies the scientific analysis and development of the theory of connected text, within which it is necessary to take into account the extent to which individual sentences forming the structure of the text demonstrate compatibility in their syntactic forms and semantic meanings [4, P. 102].

Since the main means of constructing a text is a sentence, it serves to convey new information in the process of formation and deployment of tests of various types. In a textual context, virtually every sentence exhibits potential connections to surrounding sentences. Lexical, grammatical and lexico-grammatical means ensure the implementation of these connections.

English-language computer discourse is characterized by the presence of various sign systems, which can be displayed by verbal means, mathematical symbols, and various graphic elements. When a communicator begins to create discourse, he consistently uses components of both verbal and graphic systems to "encode" his message. When implementing the semantics of concepts that practically coincide in meaning, the means that are part of various sign systems can enter into paradigmatic, syntagmatic, integrative relationships, thereby ensuring the completeness of the message through its cognitive content.

A significant linguistic feature of English computer discourse lies in its well-established terminological apparatus, represented by a variety of structural organization. Computer terms can consist of single-word, multi-word and multi-component units, which are formed using primary and secondary nomination and perform a nominative function: "*The DL 380 is one of the most popular rackmount servers in the HP Proliant family. Heroix EQ is a remote monitoring and management tool for Windows, Unix / Linux and netware server, to discover and manage a number of applications. If congestion becomes an issue, then switching to the higher frequency is the answer. Additionally, since most broadband connectors are between 1.5 and Mbits/sec, the 1 Mbits/sec bandwidth of 802.11 b is more than sufficient for sharing them wirelessly. When we looked inside the system case we were impressed by a balanced, well thought-out range of components including a 2.66 GHz Pentium4, 512 MB of DDR Pc2100 system memory and a 12GB Seagate Barracuda hard disc. It includes some handy programs such as Word 2002, Encarta 2002, Autoroute 2002 and Picture it Photo*" [14].

English computer discourse can appear in a formal style, advertising tone: "*Wireless networking is easier than you may think, so to help you achieve a cable — free existence, we have outlined what you need to know. Of all the technologies to arrive in recent years, wireless networking is one of the most exiting.; Range and speed are intrinsically linked, with the 802.11 specification claiming a range of 120 m outdoors at its top speed.; What every our requirements, building a wireless networks is very simple.; Connect one to your network hub, and you're ready to share its resources with any wireless adaptor in range.*

So if you want to see the benefit of 802.11a or g adaptors, you'll need to connect them to fast cable networks or desktop interfaces. Over the following pages we'll tell you everything you need to know" [14].

When organizing computer discourse, the main point is the orientation towards the addressee, which has a significant impact on the structuring of discourse. When receiving new information, the recipient tends to divide it into semantic segments, with subsequent interpretation of the latter. At the same time, the recipient's choice of information for reading or listening involves a search for the most informative fragments in the discourse. The further analysis of these fragments allows us to draw a conclusion about how relevant the information is for the addressee. In this regard, an essential condition is the fullest possible implementation of the principle of highlighting the pragmatic within the discourse, in other words, the search and selection of segments of the utterance that are the most significant in communicative terms [5, P. 18].

Directly in computer discourse, information can be grouped into two types of arrays: general computer focus or highly specialized focus. Within computer discourse, therefore, both esoteric fragments understandable only to specialists are distinguished as an internal component, and popular exoteric fragments understandable to non-specialists as an external part of the discourse. The composition of such texts traditionally includes an introduction, a main part and a conclusion.

The introduction of computer discourse is a different type of construction and, considering it from a pragmatic aspect, the following parts can be identified: 1) general information; 2) evaluative-problematic; 3) information-selective or summarizing [2, P. 29].

Discussion

The specificity of the general information part of the introduction lies in the variability of diachronic elements, links and generally accepted terms. The set of meanings that accumulates in this part of the introduction forms a certain information core of an affirmative nature. Let's give a clear example: *After intense hype and years of massive investment and effort, it's fair to say that the telecommunications industry has delivered on the initial phase of 5G and over 500 operators have invested in 5G, making it a reality in most of the world* [13].

The evaluative-problematic part of the introduction indicates its occasional nature. The prevailing factors in it are: interrogative intonations and partial judgments of the addresser, as well as facts of a theoretical and experimental nature. With their help, a certain conceptual barrier is built that differentiates exact knowledge and ignorance, demonstrative and intuitive, for example: *Some may be inclined to think that 5G is a done deal, but this can lead to frustration, for it having fallen short of delivering upon its promise to fuel a new generation of disruptive applications and massive performance gains across the mobile network* [13].

Constructions that have a connotation of opposition or doubt, such as: *no evidence, however, several attempts, although* and others, are also being introduced into this area of the information space.

The information-selective or summary part includes the logical end of the introduction. Using relatively neutral vocabulary, the addressee informs about the nature of the work done and its most significant results. This part is of particular significance in a conceptual sense, since, through analysis, the addressee preliminarily evaluates the work as a whole. This part of the introduction plays the role of a psychological "trap", on the basis that the addressee, when analyzing the data and noticing its deficiency due to the insufficiency of the information presented (its retention or conciseness), is interested and motivated to further familiarize itself with the information. Here's an example: *The majority of views would be highly inaccurate, as there's still much to come with 5G, with new tools and techniques aimed at delivering on its widely-touted possibilities, all while improving the business case of mobile operators* [13].

It should be noted that an important role in the main part of computer discourse belongs to formalized sign systems, which are convenient to use to form the logical structure of the algorithm.

Arguments and arguments are mainly given within the framework of the symbiosis of various sign systems. Consequently, it can be argued that one of the important components of the act of communication is the interaction of these sign systems, which, in turn, are determined by the pragmatics of discourse. This can be seen in the following example of a fragment of computer discourse containing formalized sign systems: *Leveraging the upcoming Release 18 from the 3GPP standards-body, 5G-Advanced is set to enable a next-generation of extended reality, high-accuracy positioning, low-power IoT applications, and other emerging use cases to provide better network performance, resiliency, and efficiency* [13].

It should be emphasized that a characteristic tendency of the descriptive part of computer discourse is the presence in it of a large number of binary syntagmas, for example: *Cfunctions, functionmain, Cprogram, braces{}.*

The presence of binary syntagmas determines their special significance from the standpoint of decoding. This is explained by the fact that such binary constructions are capable of conveying new semantic meaning in common virtual signs. Let us examine the case using the example of the binary syntagma *Cprogram*: in the linear series *Cprogram*, the virtually designated program is specified by the designated *C*, implying the identity of the general and the specific. In this regard, the opinion of A.A. Ufimtseva seems correct: "In language there are no other means of relative and absolute actualization of virtual words, except for the semantic juxtaposition of verbal signs in a linear series" [7, P. 82].

I would like to draw attention to one more aspect, which is due to the fact that a special role in the compositional plan of computer discourse belongs to the conclusion, as a component of the external block. Here it is useful to list two main output functions:

– clarification and specification of information contained in the information-selective part of the introduction. The output is the final link of the external information block;

– forecasting further research and opportunities, namely: the sender's transition to the level of qualitative explication, thereby significantly reducing the likelihood of the appearance of elements of formalized languages.

Conclusion

So, based on the above, we can draw the following conclusions:

– the presence of signs and symbols of various etiologies that prevail in computer discourse confirms its multifunctionality, which is based on two key components: pragmatics and adequate referential correlation;

– the active involvement of both verbal and non-verbal means contributes to the explicitness of the information block in computer discourse, at the same time, traditional methods of designing a scientific work and structural and compositional factors occupy an important place here.

Thus, as a result of the study, firstly, the set goal was achieved: English-language computer discourse was studied and defined in the context of its structural and semantic characteristics. Secondly, the tasks outlined in the introductory part have also been fully resolved: the definition of discourse within the semantic approach has been determined, the language system in which the semantics of English-language computer discourse is clearly visible has been considered, an analysis has been carried out of the structural and compositional means used to design computer communication in English.

Summarizing the above, it seemed possible to assert that English-language computer discourse contains in its structure tools that increase the level of concentration of cognitive information. It was found that it is the logical, and not the associative-figurative way of constructing computer discourse that provides the unconditional advantage of cognitive information in computer discourse. This is made possible by special linguistic tools, namely the tools of semantic and formal cohesion, which require further linguistic research.

<table>
<tr><td>

Конфликт интересов
Не указан.

Рецензия
Все статьи проходят рецензирование. Но рецензент или автор статьи предпочли не публиковать рецензию к этой статье в открытом доступе. Рецензия может быть предоставлена компетентным органам по запросу.

</td><td>

Conflict of Interest
None declared.

Review
All articles are peer-reviewed. But the reviewer or the author of the article chose not to publish a review of this article in the public domain. The review can be provided to the competent authorities upon request.

</td></tr>
</table>

Список литературы / References
1. Агапова С. Г. Основы межличностной и межкультурной коммуникации (английский язык) / С. Г. Агапова. — Ростов–на–Дону : Феникс, 2004. — 288 с.

2. Бех П. А. Некоторые особенности структурно-семантической организации научного текста / П. А. Бех, Т. А. Тарасова // Научный и общественно-политический текст: лингвистические и линводидактические аспекты изучения. — Москва : Наука, 1999. — С. 27–39.

3. Борботько В. Г. Общая теория дискурса (принципы формирования и смыслопорождения) : автореф. дис. д-ра филол. наук / В. Г. Борботько. — Краснодар : Изд-во Кубанск. гос. ун-та, 1998. — 20 с.

4. Воробьева О. П. Текстовые категории и фактор адресата / О. П. Воробьева. — К. : Выш. шк., 1993. — 200 с.

5. Наер В. Л. Прагматика научных текстов: (вербальный и невербальный аспекты) / В. Л. Наер // Функциональные стили: Лингвометодические аспекты. — Москва : Наука, 1985. — 239 с.

6. Степанов Ю. С. В поисках прагматики / Ю. С. Степанов // Известия АН СССР. Серия литературы и языка. — 1981. — Т. 40. — № 4. — С. 325–332.

7. Уфимцева А. А. Лексическое значение: принцип семиологического описания лексики / А. А. Уфимцева. — Москва : Наука, 1986. — 241 с.

8. Формановская Н. И. Речевое общение: коммуникативно–прагматический подход / Н. И. Формановская. — Москва : Рус. яз., 2002. — 216 с.

9. Чернявская В. Е. Дискурс и дискурсивный анализ: традиции, цели, направления / В. Е. Чернявская // Стереотипность и творчество в тексте. — Пермь. — 2002. — 134 с.

10. Чигридова Н. Ю. Речевое поведение коммуниканта в жанре деловых эпистолярий : автореф. дис. канд. филол. наук / Н. Ю. Чигридова. — Ростов–на–Дону, 1999. — 23 с.

11. Шейгал Е. И. Семиотика политического дискурса / Е. И. Шейгал. — Москва : ИТДГК «Гнозис», 2004. — 326 с.

12. Crystal D. Language and the Internet / D. Crystal. — Cambridge, 2001. — 212 с.

13. 5G Americas Explores 3GPP's Release 18 and Beyond in 5G – Advanced // Microwave Journal. — 2024. — URL: https://www.microwavejounal.com (accessed: 02.03.2024).

14. Tabanakova V. D. Methods of Forming Terms for the Global Computer Network Internet / V. D. Tabanakova, E. A. Zykov // Journal of Language and Literature. — 2024. — P. 95–112. DOI: 10.24071/joll

Список литературы на английском языке / References in English
1. Agapova S. G. Osnovy mezhlichnostnoj i mezhkul'turnoj kommunikacii (anglijskij jazyk) [Fundamentals of Interpersonal and Intercultural Communication (English)] / S. G. Agapova. — Rostov–on–Don : Phoenix, 2004. — 288 p. [in Russian]

2. Bez P. A. Nekotorye osobennosti strukturno-semanticheskoj organizacii nauchnogo teksta [Some Features of the Structural and Semantic Organization of a Scientific Text] / P. A. Beck, T. A. Tarasova // Nauchnyj i obshhestvenno-politicheskij tekst: lingvisticheskie i linvodidakticheskie aspekty izuchenija [Scientific and Socio-political Text: Linguistic and Linguistic Didactic Aspects of Study]. — Moscow : Nauka, 1999. — P. 27–39. [in Russian]

3. Borbotko V. G. Obshhaja teorija diskursa (principy formirovanija i smysloporozhdenija) [General Theory of Discourse (Principles of Formation and Meaning Generation)] : abstract. Dissertation of the Doctor of Philology / V. G. Borbotko. — Krasnodar : Publishing house of the Kuban State University, 1998. — 20 p. [in Russian]

4. Vorobyova O. P. Tekstovye kategorii i faktor adresata [Text Categories and the Addressee Factor] / O. P. Vorobyova. — K. : Higher School, 1993. — 200 p. [in Russian]

5. Naer V. L. Pragmatika nauchnyh tekstov: (verbal'nyj i neverbal'nyj aspekty) [Pragmatics of Scientific Texts: (Verbal and Non-verbal Aspects)] / V. L. Naer // Funkcional'nye stili: Lingvometodicheskie aspekty [Functional Styles: Linguistic and Methodological Aspects]. — Moscow : Nauka, 1985. — 239 p. [in Russian]

6. Stepanov Yu. S. V poiskah pragmatiki [In Search of Pragmatics] / Yu. S. Stepanov // Izvestija AN SSSR. Serija literatury i jazyka [Proceedings of AS USSR. A Series of Literature and Language]. — 1981. — T. 40. — No. 4. — P. 325–332. [in Russian]

7. Ufimtseva A. A. Leksicheskoe znachenie: princip semiologicheskogo opisanija leksiki [Lexical Meaning: the Principle of Semiological Description of Vocabulary] / A. A. Ufimtseva. — Moscow : Nauka, 1986. — 241 p. [in Russian]

8. Formanovskaya N. I. Rechevoe obshhenie: kommunikativno–pragmaticheskij podhod [Speech Communication: a Communicative and Pragmatic Approach] / N. I. Formanovskaya. — Moscow : Rus. Lan, 2002. — 216 p. [in Russian]

9. Chernyavskaya V. E. Diskurs i diskursivnyj analiz: tradicii, celi, napravlenija [Discourse and Discursive Analysis: Traditions, Goals, Directions] / V. E. Chernyavskaya // Stereotipnost' i tvorchestvo v tekste [Stereotyping and Creativity in the Text]. — Perm. — 2002. — 134 p. [in Russian]

10. Chigridova N. Y. Rechevoe povedenie kommunikanta v zhanre delovyh jepistoljarij [Verbal Behavior of a Communicant in the Genre of Business Epistolaries] : abstract. Dissertation of the Candidate of Philology / N. Y. Chigridova. — Rostov–on–Don, 1999. — 23 p. [in Russian]

11. Sheigal E. I. Semiotika politicheskogo diskursa [Semiotics of Political Discourse] / E. I. Sheigal. — Moscow : ITDGC "Gnosis", 2004. — 326 p. [in Russian]

12. Crystal D. Language and the Internet / D. Crystal. — Cambridge, 2001. — 212 c.

13. 5G Americas Explores 3GPP's Release 18 and Beyond in 5G – Advanced // Microwave Journal. — 2024. — URL: https://www.microwavejounal.com (accessed: 02.03.2024).

14. Tabanakova V. D. Methods of Forming Terms for the Global Computer Network Internet / V. D. Tabanakova, E. A. Zykov // Journal of Language and Literature. — 2024. — P. 95–112. DOI: 10.24071/joll