

UDC 811.11

## PROFESSIONAL TEXT IN THE FIELD OF ECOLOGY AS STRUCTURAL AND FUNCTIONAL UNITY

I. Voloshchuk, T. Boyko

*Kyiv, National Technical University of Ukraine*

*“Igor Sikorsky Kiev Polytechnic Institute”*

irina\_voloshuk@ukr.net

The new approaches in linguistics focused on textology outlines the necessity in linguistic study of professional text in the field of ecology from the point of text analysis as integral unity of semantically, grammatical and functional relations within one text system. The integrity of the text represents the result of retrospective or prospective communication with a specific purpose and function and responsible for the structural unity of text and expanding the idea of the text by traditional criteria of textuality. The criteria of textuality of professional text: cohesion, coherence, communicative intention, completeness, informativeness, contextuality and intertextuality as the ability of the text to be related to a specific type. Thus professional text, being the result of communicative activity, is a coherent, logically structured, complete, consists of comprehensive statements that describes the specific profession facility, is adequate for the communicative situation by correspondent language means and can be supplemented by visual means such as symbols, graphs, drawings.

**Key words:** criteria of textuality; professional text; integral unity; contextuality and intertextuality.

**Introduction:** Today the benefits of globalization result in the boost of scientific communication and consequently to the research of the product of this communication – professional texts as the unit of professional language. The new approaches in linguistics focused on textology outlines the necessity in linguistic study of professional text in the field of ecology from the point of text analysis as integral unity of semantically, grammatical and functional relations within one text system. Such integrity is indispensable category of text and appears in the text within the process of text formation. The text integrity, indeed realizes the consecutive meaning of information and comprehension of the text intention by the recipient. Thus integrity being responsible for the structural unity of text and continuum of information is the subject of text analysis.

Provided the professional language realizes the function of communication among the experts in particular field of science and research and the result of this communication is represented in particular professional text which has the structural and functional unity.

**The aim of our research** is to classify the professional texts of ecology according to typology of different genres by means of corpus linguistics and analyze the linguistics means ensuring its semantically, structural and functional unity.

Such scholars as N. Dercach [1], N. Kovalchuk [3] V. Liychik [4], A. Mishchenko [6], contributed a lot to the problems of linguistics of professional texts and terminology. The aspects if their research was focused on the models and methods of coding and decoding of professional text; actualization of the general laws of language in a professional text, the system of grammatical, semantic and prosodic categories of professional text and the outcomes of their research laid the perspectives for the study of oral professional text.

Summarizing their ideas we note that professional languages represented in the national languages as an independent ones, with its own terminological tools, grammatical and syntactical structures and stylistic peculiarities, provide the communication function on different levels depending on the participants of communication (industry experts, specialist of related industries, consumers), the forms of its realization in speech (oral or written) and socio-functional differentiation (professional language, language of scientific argumentation, language of production and perception of primary and secondary texts, language of consumers' instructions and manuals, etc.).

Since the text is a product of speech and mental processes which is completed, presented in the form of a written document, literary processed in accordance with the document type and consists of the name (title) and some special units (over phrasal unities), which are integrated by different types of lexical, grammatical, logical, stylistic relations. These integrity represents the result of retrospective or prospective communication with a specific purpose and function [6]. Mishchenko defines text as “... the result of mental and lingual treatment of known object in the conventional model. It is systemic and represents a complete work which has its own content, organized according to an abstract model of an existing language forms of communication, and is characterized by certain differential features” [6].

Therefore the professional text is the result of mental and lingual process of an object specific for the professional sphere and possessing the traditional criteria of textuality. Consequently a professional text is the result of communicative activity of experts, is a coherent, logically structured, complete, consists of comprehensive sets of utterances (over phrasal unities) that describe specific for a certain profession object or a process, is relevant for

the particular communicative situation, represented by specific linguistics means and can be supplemented by visual means such as symbols, graphs, drawings.

Thus, the modern approach in professional text research is based on the problem solution of unambiguous interpretation of the semantic units of the text, the creation of the so-called formal grammar of the text in the form of certain rules, procedures and schemes. The outcomes of thorough study of speech acts, their patterns and functioning in professional fields, give perspectives to modulate structures of different types of texts, as well as the General theory of the text due to mechanisms of regulation and standardization of professional communication.

At the same time, professional text has some similarities, manifested regardless of the genres of their expression (monograph, research paper, report, manuals, etc.) Professional text has the criteria of textuality: 1) cohesion – ensures the semantically, grammatical and logical integrity of the text 2) coherence – is based on continuity of sense, 3) intentionality – the realization of addressing communicative intention to produce sensible textual unity, 4) audibility – how recipient finds the text meaningful and useful, 5) informativeness – informative value and novelty of content for the recipient, 6) situationality – relevancy to actual or simulated communicative situation, 7) intertextuality – contextuality and intertextuality as the ability of the text to be related to a specific type and to be distinguished from another type of text. Robert-Alain de Beaugrande specify these criteria for the definition of the text and outlines the role of them in transferring the text idea [1].

Consider these criteria of textuality in particular for professional text in the field of ecology:

**Cohesion** is realized in the sphere of pragmatics and provides a meaningful, logical and semantic integrity of the professional text. Therefore, the creation of coherent professional text requires addressant professional knowledge in particular field, presupposes hypothetical recipients, knowledge of professional communication within the subject area and stylistic peculiarities of their implementation in the respective samples of professional text, the selection of the semantically and pragmatically relevant lexical units which manifests the general meaning of the text, and the development of logic between the structural element at the text level.

**Coherence** presents referencing and relational coherency on the text level. The first is provided by full references of the described objects, phenomena and processes, and the second, relational coherency, actualize relational links between elements of the texts, based on logical or associative connections of various types. It is characterized by logical sequence of presentation, an ordered system of relations between parts of utterances, the intention of author to accuracy, conciseness, unambiguity. Coherence is realized by functional words: *on, after, instead of, in addition etc.*, parathetical constructions to ensure the logical connections between text elements: *thus, moreover, however, also, without doubts, besides, on the other hand*. Linearity markers are essential in professional texts they fall into such categories:

1) markers of sequence information input (*first, second, next, last, finally, in this section, to start/ begin with, to conclude by, as previously mentioned*);

2) markers of exemplification (*for example, for instance, e. g.*);

3) markers of paraphrasing (*to put it simply, in other words, thus*) [1, c.253].

Intentionality and audibility achieved by semantic organization of professional text which regulates its consistency, clarity, accuracy and proper usage of terminology. Since a text is broken into meaningful segments, reflecting the movement of thought from particular to general or from general to specific therefore only a text has sequence from which the recipient perceives the message and draw the conclusion. Therefore **consistency** is the existence of semantic relations between consecutive units of text.

The **clarity** as the criteria of scientific terminology involves comprehension, accessibility. Furthermore precision of scientific vocabulary implies the unambiguity of understanding. Therefore, scientific texts tend to lack imaginative, expressive means; words are used mainly in direct meaning

According to V.M. Leychik [4] and D.S. Lotte [5] the most typical lexical features of professional text is the saturation of text with terms and term combinations. Terms are words that have the same linguistic properties as the other units of the vocabulary, but their function is to express the concept specific for science and technology. Terms are an essential part of professional texts and are one of the main causes of difficulties in the translation, considering their homonymy between fields of science, the lack of translation correspondences in case of internationalisms and pseudo international words. By means of corpus linguistics we conducted linguistic and informative analysis of professional texts in the field of ecology. We distinguish the semantic organization of professional ecological text fall into following group:

– *object, process, physical values* ( semantics of general concepts)

– *instrumentality* (mechanisms and devices, names of substances with generalized semantics of process): Bar Screen, Chlorinator, Ozonator, Carbon Absorber, Catalytic Incinerator, Cyclone Collector, Scrubber, Biostabilizer, Inertial Separator, Activator, Carcinogen, Desiccant, Dispersant, Irritant.;

– *names of substances with specific semantics*: Pollutant, Chlorofluorocarbons, Halon, Colloids, Phenols, Radioactive Substances, Agent Orange etc.;

- *nomenclature, titles and company names*: Facility Emergency Coordinator, Remedial Project Manager;
- *lexical-semantic group of names denoting processes and actions* realized by nouns and verbs: Abatement, Corrosion, Chlorination, Decontamination, Reduction, Monitoring, Baling, Neutralization, Diffusion;
  - *attributiveness* realized by nouns, adjectives denoting quality characteristics of subjects and substances: Alkaline, Impermeable, Phytotoxic, Onconogenicity, Resistance, Toxicity;
  - *lexical-semantic groups of variables, magnitude of physical quantity, dosages, units of measurements*, including Coefficient of Haze, Global Warming Potential, Percent Saturation, Salinity, Administered Dose, Detection Limit, Permissible Dose
- *terminological proper names and regalia*: Accident Site, Aquifer, Burial Ground, Feedlot, Lagoon, Sink, Vulnerable Zone;
- *conventions, protocols, declarations, practices and methods*: Hydrology, Limnology, Urban Ecology, Best Management Practice, Method 25, Administrative Order, Control Technique Guidelines, Environmental Impact Statement, Montreal Protocol .
- *semantically group of eco-neologisms* represents newly coined terms, professionalisms and nominates process of new ecological concepts, denotes protection, sustainable development, aggravation processes: environmental revolution, ecological revolution, hydrogen revolution, blue revolution, green revolution, brown revolution, biotech (enological) revolution, eco-industrial revolution.

Grammatical and syntactical organization of professional text is manifested by:

1. The usage of subordinated or coordinated complex sentence with homogeneous synonymous pairs *The broadest definition is that the Arctic is the region of permafrost or permanently frozen subsoil.*
2. The usage of passive constructions which determines the information objectivity: *The test was especially pronounced when hydrolysis was effected by trypsin.*
3. Functioning of non-transitive verbs: *The aircraft can fly large-size equipment.*
4. The usage of phrasal verbs – *to look at, to look through, to look by, and verbs with the dependable prepositions – to depend on, to have influence on, to refer to.*
5. Adjectives in post position: *materials available, properties attainable, problems to be solved.*
6. Omission of article denoting devices and objects in specifications and manuals.
7. Attaching of attributive combinations to defined terms with the help of *type, of the type, design, grade, for instance: the water-protected type electric machines, light-weight design units.*
8. Combination of preposition with the adverbials: *hereof, thereof, hereupon, thereupon .*
9. Usage of inversion in emphatic construction: *Considered in the next section are the most important conditions of the chemical reaction.*
10. Means of modality for expressing scientific assumptions: *Shall* is usually used to dictate the provision of a functional capability: e.g. *“The selected generator shall provide a minimum of 80 Kilowatts”*
11. Infinitive, Participial and Gerundial constructions: *This subject is rather complicated, belonging as it does to theoretical physics. None of this is to deny that the emergence of a global warming can influence the structure of ecosystems.*

Stylistic features of scientific language reflecting the emotionality and expressiveness in professional texts are expressed differently than in other styles because of an objective intellectual presentation of scientific data. The perception of professional texts can trigger certain feelings in the reader, but not as a response to the emotion of the author, but as a recognition of scientific fact. Although the author of professional text does not always discard emotionally-evaluative stylistic means to facts and events about which he reports. As rightly noted by O. M. Ilchenko commitment to a limited use of the author's “I” is not a tribute to the etiquette and the expression of the abstract generalized stylistic features of scientific language that reflects the form of thinking: for instance the rhetorical question which is no question at all but an emphatic statement [2].

So, we outline a concept of professional text, being the result of communicative activity, is a coherent, logically structured, complete, consists of comprehensive statements that describes the specific profession facility, is adequate for the communicative situation by correspondent language means and can be supplemented by visual means such as symbols, graphs, drawings. The criteria of textuality of professional text: cohesion, coherence, communicative intention, completeness (the main idea or communicative aim which is expanded in such forms of communicative process as description, discussion, report, instruction and the communicative aim is achieved by progressive advance of the general idea of the text and its explanation – the text is considered to be accomplished), informativeness, contextuality and intertextuality as the ability of the text to be related to a specific type.

Classification of professional text is based on the selection of such relevant features that enables to differentiate professional texts on different types, and the task of typology of the text is to highlight common signs for a certain type of text. By means of corpus linguistics we distinguished common signs for a certain type of texts belonging to ecological field, with the help of computer – based program the criteria of contextuality and

intertextuality of ecological texts have been considered and processed. By means of program **AntConc**, we download texts and such platform enables us to provide linguistic analysis and informative analysis of the texts. We distinguish the typology of professional texts in the field of ecology: biotechnology (scientific articles), ecoproduction (manuals and instructions), advertisements: (booklets and leaflets) for consumers, sustainable development (conference proceedings, expert abstracts) etc. and the semantic organization of abovementioned professional texts which regulates their consistency, clarity, accuracy and relevant choice of terminology.

**Conclusion:** We distinguished that professional communication in particular field of ecology is realized by a system of semantic, grammatical, prosodic categories, stylistic features and pragmatic selection of lexical units, which are organized in the text regarding the criteria of textuality. Besides the professional text is considered not only as the sequence of logically connected, semantically and grammatically relevant sentences but as complex speech act, with the help of which addressant intends to establish the communicative relation with addressee, these relations predominant the communicative function of the professional text. In our research we outlined the functions of professional texts in the field of ecology as:

- informative function (objective explanation of facts and events);
- expressive function (for achieving communicative effect between addressant and addressee);
- pragmatic function (for intellectual and responsive impact on addressee);
- contextual function (for physiological response of addressee on the context).

#### REFERENCES

1. Деркач Н.О. Лінгво-стилістичні особливості сучасного англomовного екологічного дискурсу / Н. О. Деркач // Вісник Житомирського держ. Університету ім.І.Франка. – 2011. – № 59. – С. 182 – 185.
2. Ільченко О. М. Англійська мова науки / О.М.Ільченко. – К.: Едельвейс, 2016. – 317с.
3. Ковальчук Н.М.. Семантична типологія англomовних лексичних одиниць термінологічного характеру в галузі охорони довкілля / Н.М. Ковальчук // Вісник Харківського нац. Університету ім. В.Каразіна. – 2009. – № 32. – С.76-82.
4. Лейчик В.М. Терминоведение : Предмет, методы / В.М.Лейчик. – М.: Ком книга, 2006. – 256 с.
5. Лотте Д.С. Основы построения научно-технической терминологии / Д.С.Лотте. – М: Книга, 2001. – 198 с.
6. Мищенко А.Л. Лінгвістика фахових мов та сучасна модель науково-технічного перекладу / А.Л. Міщенко. – Вінниця : Нова книга, 2013. – 448 с.
7. Основы наукового тексту та дискурсу. – New. Greenwich, CT: Ablex, 1997.

#### REFERENCES

1. Derkach, N.O. (2011). Lingvo-stylistychny osoblyvosty suchasnoho anglomovnoho ekologichnoho dyscurcu [ Lingvo-Stylistic peculiarities of modern English ecological discourse ]. *Visnyk Zhitomerskogo derzh. Universitetu im. I. Franka*, 59, 182-185.
2. Pchenko, O.M. (2016). *The language of Science*. Kyiv, Ukraine: Edelweis
3. Kovalchuk N.M. (2009). Semantichna typologiya anglomovnyh leksichnyh odynyts terminologichnoho kharakteru u galuzy okhorony [Semantical typology of English lexical units having terminological character in environmental protection sphere]. *Visnyk Kharkivskogo nats. Universitetu im. V.N.Karazina*, 32, 76-82.
4. Leychik, V.M. (2006). *Terminovedenye: Predmet, metody* [Terminology: subject matter and methodology]. Moscow, Russia: Progress.
5. Lotte, D.S.(2001). *Osnovy postroeniy nauchno-tehnicheskoy terminologii* [The foundation of the scientific and technical terminology ]. Moscow, Russia: Knyga.
6. Mishchenko, A.L. (2013). *Linguistika fakhovyh mov ta suchasna model naukovo-tekhnichnoho perekladu* [Linguistics of professional languages and model of scientific and technical translation]. Vynytza, Ukraine: Nova Knyga.
7. New Foundations for a Science of Text and Discourse. (1997). Greenwich, CT: Ablex.

#### **I. Волощук, Т. Бойко. Професійний текст в галузі екології як структурна та функціональна єдність.**

Нові підходи у лінгвістиці фокус яких зосереджуються на текстології окреслюють необхідність лінгвістичного аналізу фахового тексту, зокрема екологічної галузі, що динамічно розвивається. Фаховий текст як об'єкт нашої наукової розвідки представляє собою інтегральну єдність семантичних, граматичних, стилістичних та функціональних відношень в межах системи фахового тексту. Аналізуються критерії текстуральності фахового тексту та лінгвістичні засоби їх актуалізації.

**Ключові слова:** критерії текстуральності; фаховий текст; інтегральна єдність; контекстуальність та інтертекстуальність.

#### **И. Волощук, Т. Бойко. Профессиональный текст в области экологии как структурное и функциональное единство.**

Новые подходы в лингвистике фокус которых сосредотачивается на текстологии определяют необходимость лингвистического анализа профессионального текста, особенно области экологии, которая динамично развивается. Профессиональный текст как объект нашей научной разведки представляет собой интегральное единство семантических, грамматических, стилистических и функциональных отношений в пределах системы профессионального текста. Анализируются критерии текстуральности профессионального текста и лингвистические средства их актуализации.

**Ключевые слова:** критерии текстуральности; профессиональный текст; интегральное единство; контекстуальность и интертекстуальность.