MOLDOVA STATE UNIVERSITY

DOCTORAL SCHOOL OF HUMANITIES

As a manuscript

U.D.C: 81`373.46:[57.089:616-7]=111=135.1(043)

GOBJILA NATALIA

A STRUCTURAL-SEMANTIC STUDY OF TERMINOLOGY FROM THE DOMAIN OF BIOMEDICAL ENGINEERING IN ENGLISH AND ROMANIAN

621.04. Lexicology and lexicography, terminology and special languages, translation studies (the English language)

Summary of the doctoral dissertation in Philology

CHIȘINĂU, 2023

The dissertation was written at the Doctoral School of Humanities, Moldova State University

Doctoral supervisor:
Grădinaru Angela, PhD in Philology, associate professor
Scientific advisors:
Druță Inga, Dr. habil. in Philology, associate researcher
Breahnă Irina, Dr. habil. in Philology, associate professor
Șaganean Gabriela, PhD in Philology, associate professor

Doctoral Committee:
Zbanț Ludmila, Dr. habil. in Philology, full professor, Moldova State University – *head of the doctoral committee*;
Grădinaru Angela, PhD in Philology, associate professor, Moldova State University – *doctoral supervisor*;
Druță Inga, Dr. habil. in Philology, associate researcher, Moldova State University – *official reviewer*;
Butuc Marin, PhD in Philology, associate researcher, The Military Academy of the Armed Forces "Alexandru cel Bun" – *official reviewer*;
Stoianova Inga, PhD in Philology, associate professor, Free International University of Moldova – *official reviewer*;
Dementieva Diana, PhD in Philology, Moldova State University – *scientific secretary.*

The defence of the dissertation will take place on the 24th February, 2023, at 2 p.m., at the meeting of the Doctoral Committee within the Doctoral School of Humanities, Moldova State University, Chișinău, 65 M. Kogălniceanu Street, block 3, room 434.
The dissertation and the abstract can be consulted at the Moldova State University library and ANACEC website. The abstract was sent on _____

Author _____ **Gobjila Natalia**
Doctoral supervisor: _____ **Grădinaru Angela,** PhD, assoc. prof.
Scientific secretary: _____ **Dementieva Diana**, PhD

TABLE OF CONTENTS

CONCEPTUAL REFERENCE POINTS OF RESEARCH

The topicality and importance of the research. Terminology is a fundamental aspect of any field of knowledge, being the formal reflection of the conceptual organisation of that field and a necessary medium for professional expression and communication. Its importance lies in facilitating specialised communication and translation, in the appropriate use and management of specialised vocabulary, in the transfer of knowledge and in the development and advancement of various fields of science and technology. Although interest in terminology is largely determined by its applied value in the above-mentioned aspects that coincide with the demands of contemporary society, where epistemological reflections have given way to more pragmatic attitudes, it also presents a field of theoretical research that has shaped its own object of study, concepts and scientific approaches that have contributed to its recognition as an autonomous field of an interdisciplinary nature. Its systematic development in recent decades, including the development of the principles, bases and methodology of study, and its applied value, reflect the increasingly significant role that terminology plays in contemporary society where technological and scientific progress are of paramount importance. The choice of the domain of biomedical engineering for the present study is determined by the fact that it is very dynamic, characterised by a continuous development and implementation of technological and scientific innovations.

The aim of the reasearch is a comparative study of the terminology in the domain of biomedical engineering in English and Romanian including structural and lexico-semantic aspects. Identifying and examining the representation of these aspects, explaining how they function within the terminologies will provide a multidimensional picture of the terminological system in the field. The proposed aim will be achieved by meeting the following **objectives**:

- to investigate the fundamental principles and aspects of terminology;
- to address the linguistic and pragmatic dimension in the study of special languages;
- to establish the characteristic features of the terminological unit as a cognitive, linguistic and communicative element;
- to investigate the methods of term formation;
- to perform an analysis of the peculiarities of terms formation in the domain of biomedical engineering in English and Romanian;
- to examine the concept of semantic relation by establishing its main characteristics;
- to carry out a lexico-semantic analysis of the terminology in the domain of biomedical engineering in English and Romanian, including the relations of polysemy, synonymy, antonymy, hyponymy, meronymy.

The hypothesis underlying the present research is that the terminology in the domain of biomedical engineering in English and Romanian is characterized by certain structural and lexical-semantic peculiarities determined by the nature of the studied languages and the nature of the specialized domain, the examination of which contributes to a deeper understanding of how the terminology in the domain of biomedical engineering works. The current research aims to confirm the following theses:

- the study of the structural and lexical-semantic peculiarities of the terminology in the domain of biomedical engineering offers the opportunity to understand the internal mechanisms that influence the behavior of the terms in the terminological system as well as the way in which conceptual information is organized within the specialized field;

- the structural and lexical-semantic peculiarities of the terminology in the field of medical bioengineering in the English and Romanian languages are similar, taking into account the international character of the language of science, as well as the circulation of scientific knowledge globally.

Scientific research methodology. Qualitative and quantitative research methods have been used: the bibliographic study method, observation, the descriptive method, the structural analysis method, the lexical-semantic analysis method, the corpus analysis method and the statistical method.

Corpus analysis. The terminological corpus represents a comparable corpus consisting of 1200 terms extracted from original texts created in English (600 terms) and Romanian (600 terms). The terms for the English corpus were extracted from "Medical Devices and Human Engineering" by Joseph D. Bronzino and Donald R. Peterson. The terms for the Romanian corpus were extracted from "Instrumentație Biomedicală" by Anatolie Iavorschi, Călin-Petru Corciovă and Victor Șontea, created in partnership between experts in biomedical engineering from the Technical University of Moldova and the University of Medicine and Pharmacy "Grigore T. Popa" Iași, Romania.

The scientific novelty and originality lies in revealing the peculiarities of the formation of terms in the domain of biomedical engineering in English and Romanian by performing a structural analysis identifying the specific characteristics of each means of term formation, as well as performing a lexical-semantic analysis of the terminology studying the peculiarities of each lexical-semantic relation and its importance in organizing concepts and structuring information within the domain of biomedical engineering.

The result obtained, which contributes to the solution of an important scientific problem, consists in determining the structural and lexical-semantic

peculiarities of terminology in the domain of biomedical engineering in English and Romanian by performing a structural-semantic study, resulting in revealing the f these peculiarities in the terminology of the studied languages, in order to apply them in the further study, use and management of specialized vocabulary.

The theoretical value of the research is determined by the fact that it represents an attempt to carry out as exhaustive a research as possible which would encompass the most important aspects of the study of terminology as a theoretical discipline, as well as a structural-semantic study of the terminology in a constantly evolving field.

The applied value of the present research lies in the fact that the results obtained could be used to facilitate the use and management of specialised vocabulary, building and completing the terminological bases pertaining to the domain of biomedical engineering, specialized translation, which would support the process of critical technological innovation and integration in the current social context.

Summary and structure of the research. The thesis contains the following compartments: annotations in Romanian, English and Russian, introduction, three chapters, general conclusions and recommendations, bibliography consisting of 209 sources, 2 annexes, statement of accountability, author's CV.

Keywords: abbreviation, antonymy, borrowing, compounding, concept, derivation, eponym, hyponymy, lexical-semantic relation, meronymy, neonym, polysemy, special language, synonymy, term, terminology.

CONTENTS OF THE DISSERTATION

The introduction presents the importance and topicality of the research, the aim and objectives, the research hypothesis, the summary of the research methodology, the theoretical value and the applicative value of the thesis, the summary of the chapters of the thesis, the approval of the scientific results.

Chapter 1 "Fundamental aspects and principles of terminology" aims to present an overview of the field of terminology starting with the identification of terminology as a discipline of study against the background of other linguistic disciplines, the synthesis of the main approaches and theories in the study of terminology, continuing with the investigation of the concept of specialized language and the examination of the notion of term as a linguistic, cognitive and communicative unit, and ending with the conclusions. The sources of documentation were chosen so as to provide a comprehensive synthesis of research in the field, consulting the works of leading researchers including Maria Teresa Cabré, Rita Temmerman, Juan C. Sager, Kyo Kageura, Pamela Faber, Jennifer Pearson, Angela Bidu-Vrănceanu, which allowed us to carry out a conceptual investigation of the the topic addressed.

Thus, the study begins by defining the notion of terminology and establishing its status as a field of research. According to Juan C. Sager, it is now necessary to distinguish three meanings of the notion of terminology: the set of practices and methods used to collect, describe and present terms; the set of premises, arguments and conclusions necessary to explain the relationships between concepts and terms; the vocabulary of a specialized domain [18, p. 3], all of which are important for conducting comprehensive research in the field. Regarding the status of terminology, there are different opinions on this topic. Maria Teresa Cabré notes that not all experts share the view that terminology constitutes a separate discipline or a field of theoretical research. Some

researchers see terminology as a practical activity diven by social, political or commercial needs. In the view of others, terminology is a genuine scientific discipline that relies heavily on concepts borrowed from other fields, but is still considered a separate discipline because it has reformulated and synthesised fundamental principles of its own in order to build a research field in its own right. There are also views situated in intermediate positions which, while acknowledging that terminology has some original theoretical aspects, only address it within other disciplines [3, p. 6-7]. According to Johan Myking, the idea that terminology is a field of research is supported by the existence of so-called "demarcation dichotomies", which indicate that terminology is a separate discipline by placing it in opposition to other disciplines such as linguistics, lexicology and lexicography [13, p. 76]. We have shared this view of terminology in the current study by presenting these demarcation dichotomies.

Chapter 1 continues with the presentation of the main classical schools within which the fundamental approaches in the study of terminology have taken shape. New research perspectives and theories are also summarised, demonstrating the continuity and evolution of research in the field. Thus, in terminology research a distinction is made between the Vienna School, the Prague School and the Soviet School [21, p. 18], and terminology in its present form emerged in the 1930s. An important contribution in the field was made by the Austrian engineer Eugen Wüster, considered the founder of terminology and the one who established the Vienna School and the General Theory of Terminology [17, p. 124]. Classical Wüsterian terminology has five basic principles: in the study of terminology concepts have priority over terms (onomasiological perspective), concepts are clearly defined and assigned a place in the conceptual system of a field, concepts must be defined by a traditional definition, a term permanently designates a concept, terms and concepts are

viewed synchronically [21, p. 4]. In the early 1990s, socioterminology and the Communicative Theory of Terminology appeared as a reaction to the General Theory of Terminology. Both theories present a more realistic view of terminology because they base their description on how terms are actually used in communicative contexts. They describe terminological units in discourse and analyse sociological aspects and discursive conditions that give rise to different types of texts [5, p. 113]. Current approaches go even further by including such categories as mental activity, anthropocentrism, cognitive individuality [1, p. 29], signifying the shift to the cognitive period in terminology research.

The next important concept addressed in this chapter is that of special language, where the stages of research, and fundamental approaches of this concept were presented from a linguistic and pragmatic perspective. Language, according to Maria Teresa Cabré, is made up of subcodes that speakers employ based on their expressive needs and the dynamics of communicative events. Regardless of their differences, all languages share a set of units and laws that all speakers are familiar with. The common or general language is the collection of rules that most speakers of a language know. The units of general language are used in what we call "unmarked" situations. Instead, we speak of special languages to refer to a set of sub-codes (which partly overlap with the sub-codes of the general language), each being characterised by certain features, such as the field of specialisation, the type of interlocutors, the communicative situation, the intentions of the speakers, the context of the communicative exchange, the type of exchange, etc. Situations involving the use of special languages can be regarded as "marked" [3, p. 58-59]. Robert de Beaugrande notes that linguistic theory has not traditionally provided any explicit means for defining the status of a special language [2, p. 2], but there are several approaches summarised by him, namely: special languages are language codes that diverge from general languages in that

they contain unique rules and units; special languages are variations of the general language; special languages are pragmatic subgroups of a language [3, p. 61-62], approaches that have been presented in detail in the sub-chapter devoted to this topic.

The last concept studies in this chapter is that of terminological unit through a linguistic, cognitive and communicative perspective. In addition to this, the notion of concept has also been presented, as well as the term-concept relationship as fundamental to the study of terminology. Thus, Maria Teresa Cabré defines the term or terminological unit as a lexical unit with a morphological or syntactic structure corresponding to a minimal autonomous conceptual unit in a given domain. Some authors have introduced other notions, e.g. Rita Temmerman's "unit of understanding" or Maria Teresa Cabré's "unit of specialised knowledge". Terminological units correspond to a certain type of specialised unit of knowledge, all of them are always defined within a concrete field of knowledge [4, p. 1-2]. Terms are cognitive units because they constitute the linguistic representation of a concept, the linguistic domain equivalent of a concept belonging to the conceptual domain. Their content is primarily determined by the position of the concept in the conceptual structure of the domain and is codified by the expert community. Terms are linguistic units, i.e. linguistic signs with lexical meaning. They occur naturally in specialised texts and form syntactic and semantic relationships with other linguistic units. Terms are communicative units because they occur in specific communicative contexts. Their form and content adapt to the situation in which the discourse is produced [6, p. 24].

Chapter 2 "The Peculiarities of Term Formation in the Domain of Biomedical Engineering in English and Romanian" begins with the idea that the aspect of term formation is essential to understand the internal mechanisms that

influence the behaviour of terms at the structural level. Thus, this chapter aims to reveal the peculiarities of term formation in the domain of biomedical engineering by performing a structural analysis identifying the fundamental features of the term formation process, the main methods and procedures, the specific character of each term formation mechanism, and its use within the studied terminology. Bearing in mind that the methods of term formation are the same as those used when talking about word formation, in order to outline a more comprehensive picture of the mechanisms involved we have resorted not only to researching terminological studies dealing with this aspect, but also to lexicological and morphological studies that could explain in more detail the peculiarities and specific role of each process.

The theoretical research on each studied method is accompanied by relevant examples of terms and an explanation of how each aspect discussed relates to the terminology from the domain of biomedical engineering. This analysis has also made it possible to reach some conclusions about the way in which terms are created depending on the nature of the studied languages and the rules characteristic of each of them. In addition to the analysis of each process of term formation, we have also devoted a sub-chapter to the description of the specialist field in order to give a more detailed picture of it.

The theoretical investigation of the approaches presented is underpinned by research of published works by such authors as Juan C. Sager, Maria Teresa Cabré, Laurie Bauer, Rochelle Lieber and Pavol Štekauer, Pius ten Hacken, Geert Booij, Elisa Mattiello, Sergio Scalise and Irene Vogel, Angela Bidu-Vrănceanu, Inga Druță and others.

In order to reveal the peculiarities of term formation, the classification proposed by Juan C. Sager was used, according to which terms are the result of a process of conscious creation in which we distinguish between the primary type

where there is no linguistic precedent and the secondary type where there is an analogous previous term [18, p. 61]. Juan C. Sager distinguishes three methods of term formation, namely: using existing linguistic resources, modifying existing linguistic resources, creating new linguistic entities [19, p. 28]. Term formation by modifying existing resources is achieved by means of derivation, compounding, conversion and abbreviation. Functionally, derivation and compounding serve the purpose of closer determination of a concept – narrowing the intensification – while showing the relationship that exists between the new concept and its origin [18, p. 73]. Derivation (en: *transfusion, inorganic, abiotic*; ro: *amplificator, ventilare, inductivitate*) is a particularly important means of designation in special languages because of its ability to contribute to precision of expression and systematic reference, compound terms (en: *noninvasive arterial mechanics, pulse generator, resorbable collagen implant, electroencephalograph*; ro: *focusare izoelectrică, incubator neonatal, stimulator cu comandă atrială, electromiografie*) also being characterised by their potential for systematicity and regularity which is exploited to the full to create coherent terminological systems. Abbreviation is present in form of initialisms (en: *MRR, ATM, MR*; ro: *TC, SLI, IPB*), acronyms (en: *GRASS, FLASH*; ro: *VEMS*) and shortenings (en: *Pro*; ro: *SYS*). As far as conversion is concerned, its productivity is low in scientific English, where there is a considerable proportion of terms derived from Latin and Greek elements with identifiable noun endings that are not suitable for conversion [16, p. 1927], so this process has not been included in the current study. Another aspect, however, widely discussed was that of the designation of terms using eponyms (en: *Larmor frequency, Poiseuille flow, Björk-Shiley tilting disc valve*; ro: *transformata Gabor, zgomotele Korotkoff, puntea Wheatstone*) frequently encountered in specialized languages, the existence of which, however, is a subject of some debate in the scientific

community. Each aspect is accompanied by the graphical representation of the data in English and Romanian, including the typology of terms formed by derivation, compounding, abbreviation and the typology of eponymous terms.

The last aspect studied in Chapter 2 is term formation by creating new linguistic entities. Terminological neologisms result from the need to uniquely name new concepts for which there is no linguistic model or precedent in the form of a native model. There is no single method for the formation of neologisms; several quite distinct processes are used. Neologisms can be classified into two types: either they are entirely new creations that are extremely rare in most languages, or they are borrowings from other languages [19, p. 38]. Maria Teresa Cabré observes that distinguishing a neologism is not a simple process, as certain aspects that are to some extent arbitrary have to be taken into account. Thus, there are several possible parameters to determine whether a unit qualifies as a neologism or not: diachrony, lexicography, systematic instability, psychology. These non-exclusive criteria do not yield the same results, nor can they be applied in the same contexts. Neologists tend to favour the lexicographic parameter as the most systematic for determining whether a lexical unit is a neologism or not. According to this criterion, a term is a neologism if it does not appear in the lexicographic corpus chosen as the reference corpus [3, p. 205]. Analyzing the corpus of terms and the nature of the sources from which the studied terms were extracted, we can state that no terms were identified that could be considered neonyms from a lexicographic point of view or from the perspective of systematic instability. Thus, the other two criteria were used to identify examples of neonyms (en: *targeted muscle reinnervation, uper-resolution optical imaging, live cell electron microscopy*; ro: *topologia Multi-Feedback, tehnica de Windowing*): the psychological and the diachronic ones. Although these criteria are characterized by a certain degree of subjectivity, they

could still provide a perspective that would facilitate the identification of terms that present a certain degree of novelty in the specialized domain.

As far as borrowing is concerned, according to Juan C. Sager, there are two major traditions in many European languages. The first is borrowing from ancient Greek and Latin, which has become the main source for importing new linguistic elements. The vast majority of English scientific vocabulary originated by borrowing elements from Greek (*histogram, plasma, prosthesis*) and Latin, which were then anglicised in different ways. After Greek and Latin (*ventilation, sensor, detector*), English borrows from French, although with such a long tradition of borrowing from all three languages it is not always clear whether a term came into English via French or was taken directly from one of the classical languages. The other tradition of borrowing concerns the borrowing of terms from modern languages in the secondary type of term formation. Some borrowings of this type are successful and become fully embedded in the language. In other cases, the original borrowed term is later replaced by a formation more appropriate to the language pattern [19, p. 38-39]. Following the study of English terms, we can conclude that Juan C. Sager's theory on the origin of borrowings has been fully confirmed, with the Romanian language preferring French as the source of borrowed terms, their origin being predominantly traced to Latin (*imagistică, densitate, difuzie, concentrație*) with a few examples of terms originating from Greek (*diagnostic, lipidă, electrolit*). In addition to terms borrowed from French and already integrated morphologically, phonetically and orthographically into Romanian, there were also terms borrowed from English that kept their foreign form, thus not being adapted grammatically (*Windowing*) or being adapted only morphologically (*bufferul*), but the number of these was small.

Chapter 3 "Lexico-semantic Analysis of the Terminology from the Domain of Biomedical Engineering in English and Romanian" is based on the idea that

the research of lexico-semantic relations in a terminological study is of primary importance, because it gives us the opportunity to understand how information is organised within a specialised field. The identification of connections in the conceptual space and their lexical representation, the identification of the place occupied by a given term in the terminological structure by highlighting common, differentiating or specifying semantic features, their hierarchical ordering and classification within content areas, all contribute to the creation of a complex picture of the conceptual and terminological system of the specialised field.

Thus, this chapter aims to carry out a lexical-semantic analysis of terminology in the domain of biomedical engineering by studying the main lexical-semantic relations from the perspective of various approaches, the features of each relation and its importance in organizing concepts and structuring information within the field of biomedical engineering, the ways of identifying them and the mechanisms of their creation. In order to carry out this analysis, we have resorted to research in the fields of terminology, linguistics, semantics, lexical semantics, computational linguistics, corpus linguistics, bioinformatics.

The theoretical research on each aspect is accompanied by relevant examples of terms and an explanation of how each aspect relates to the terminology from the domain of biomedical engineering. The lexical-semantic analysis of the examples serves to illustrate the peculiarities of the established semantic relations in English and Romanian, allowing us to reach relevant conclusions.

The theoretical investigation of the approaches presented is based on research of works published by such authors as David Alan Cruse, John Lyons, Maria Teresa Cabré, Pamela Faber, Steven Jones, M. Lynne Murphy, Carita Paradis, Caroline Willners, Verginica Barbu Mititelu and others.

Thus, Chapter 3 begins by defining and characterizing the concept of semantic relation, which constitutes associations of meaning between concepts, entities or groups of entities. They can be seen as directional connections between the concepts/entities involved in a given relation [11, p. 159-160]. Lexical-semantic relations are of two orthogonally opposite types: paradigmatic and syntagmatic. John Lyons mainly approaches lexical-semantic relations from a paradigmatic point of view, focusing on relations such as antonymy, synonymy and hyponymy [14, p. 386], the approach we have adopted for the current study, adding to the lexical-semantic relations mentioned above the relation of polysemy and meronymy. According to Gerhard Budin, the description of relations between the elements of a terminology is an important component of research and practical use. Terminological systems are usually structured according to criteria of conceptual logic and are considered, at least implicitly (in terminology standardization also explicitly), as the highest level in the development of terminologies [23, p. 16].

The first lexical-semantic relation investigated is polysemy. In many cases, in terminology the phenomenon of polysemy is investigated in connection with that of homonymy. Thus, Maria Teresa Cabré argues that in terminology polysemy is regarded quite differently from how it is regarded in lexicography. The semantic value attributed to a term is determined exclusively based on its relation to a certain conceptual system. Recognizing a term as belonging to a specialized field implies its placement in a certain conceptual system. Consequently, what lexicography considers polysemy, terminology views as homonymy [3, p. 108]. Analysing the corpus of terms in the domain of biomedical engineering both in English and in Romanian, we can find examples of such terms that exist in other fields as well, denoting different concepts en: *conductor, filter, pump*; ro: *frecvență, amplificare, fulguрație*). Despite this

principle, identical terms with distinct meanings may exist in a single specialized domain. Belonging to various branches of the same domain cam justify their autonomous conceptual status [3, p. 109]. Having an interdisciplinary character that combines concepts belonging to several domains, biomedical engineering is characterized by the existence of such terms (en: *absorption, plasma, filter*; ro: *impuls, interferență, reactiv*).

The next lexical-semantic relation investigated is synonymy. Radek Vogel emphasises the idea that theoretically one of the main features of terminologies should be the unequivocal nature of their components represented by terms. This is the view held by the traditional school of terminology. It is assumed that each term has a well-defined meaning, and a concept should be represented by a single term so as to avoid potential confusion. However, reality proves that the phenomenon of synonymy is also present in special languages [22, p. 91]. Valeriya Petrovna Danilenko argues that in terminology synonyms are related to the same concept, and do not designate different characteristics of it. Thus, this phenomenon is called by some researchers as terminological doublets, the existence of which is often caused by the various sources of term formation [24, p. 73]. If we are to talk about the research of the phenomenon of synonymy in biomedical language studies, they predominantly focus on identifying and extracting synonyms from a terminological corpus, as well as determining the degree of similarity between them. The classification of synonyms provided by Maria Teresa Cabré was used to investigate the phenomenon of synonymy in the current study, with each term accompanied by its definition to illustrate the basis for establishing the relation of synonymy between terms. Thus, Maria Teresa Cabré argues that synonymy exists between units of different levels: between designation and its definition (en: *oximetry – „the determination of blood or tissue oxygen content, generally by optical means”*; ro: *pneumotahografie –*

„măsurarea debitului respirator cu ajutorul spirometrelor în circuit deschis”), between designation and illustration of the same concept, between equivalent terms belonging to different languages (to illustrate this case of synonymy Romanian equivalents for English terms were chosen: *defibillation – defibrilare*), between designations belonging to different functional styles (en: *neuroimaging/brain imaging/brain scanning*; ro: *oftalmoscopie/examenul fundului de ochi*), between alternative designations in the same language (en: *angiography/arteriography*; ro: *cardiointevalogramă/ritmogramă*). Synonyms for a single concept, however, do not always correspond to absolute equivalents, but rather manifest a number of possible cases. Sometimes synonymy exists between two semantically equivalent units where one form is derived from the other. This type of relation occurs between: initialisma and the extended term (en: *MRI = magnetic resonance imaging*; ro: *CRF = capacitatea reziduală totală*), abbreviations or shortenings and the extended term (en: *biosensor = biomedical sensor*) [3, p. 109-110]. Following the analysis of the examples we can conclude that in both languages the phenomenon of synonymy manifests itself in a similar way, proving that, in the vast majority of cases, special language shows the existence of absolute synonymy as a relation established between designations referring to the same concept, these having the ability to substitute each other in various contexts without modifying the meaning of the sentence. Even in the case of terms belonging to different functional styles, it is not the meaning that changes, but the degree of specialisation of the term used, which is proved by the fact that the designations are defined by a single definition, i.e. they refer to a single concept. At the same time, it is important to note that these examples appear in an extremely small number compared to the other types present in the classification proposed by Maria Teresa Cabré.

The following lexical-semantic relation studied is antonymy. According to Steven Jones, M. Lynne Murphy, Carita Paradis and Caroline Willners, antonymy occupies a unique position in that it represents a binary relation compared to the other lexical-semantic relations [10, p. 1]. Thus, between members of antonym pairs there is minimal difference in terms of content and maximum in terms of configuration. They denote the same semantic feature, but occupy opposite poles of the same structure [15, p. 289]. Regarding antonyms in terminology, Anne-Marie Gagné and Marie-Claude L'Homme note that very few terminologists have described the opposition relation in specialized resources, giving two reasons for this. It can partly be explained by the fact that the focus has been on nouns and very often on nouns denoting entities, while prototypical antonymy is formed between adjectives and less prototypical forms of opposition between verbs. In terminology pairs of terms that might have been defined as opposites were more naturally examined from the perspective of co-hyponyms. [7, p. 3-7]. The classification of antonyms proposed by Steven Jones [12, p. 2160-2161], who chose to categorize antonyms in terms of their function based on their co-occurrence in context, as opposed to semanticists who classified antonyms based on logical properties, was used to study the phenomenon of antonymy in the domain of biomedical engineering. Analysing the examples of antonyms extracted from the English source, we can conclude that most antonym pairs fall into the category of coordinated antonyms, one of the two major categories proposed by Steven Jones (*nontransvenous electrode – transvenous electrode, solid metal devices – liquid metal devices*). In this case the antonyms are connected by the conjunctions *and* and *or*. In Romanian terminology the extracted examples show the existence of a wider range of antonymy categories than in English. However, as in English, most examples of antonymic term pairs fall into the category of coordinated antonyms (*repolarizare lentă – repolarizare*

rapidă, semnale biologice continue – semnale biologice discontinue) signalled in context by juxtaposition using the comma or by conjunction using the coordinating copulative conjunction and in most examples even less so using the coordinating disjunctive conjunction *sau*. As in English, most terms in Romanian are compound terms, the antonymy relation being determined on the basis of the opposition established between the modifier of each part of the antonymic pair.

Hyponymy can be defined as a semantic relation based on a principle of hierarchical ordering of terms according to their semantic content, i.e. the association of a term designating a more specific concept with another term designating a more general concept in relation to the first, the latter belonging to the same class. According to researcher Angela Bidu-Vrănceanu, this type of semantic relation takes the form of a hierarchical structure, where the hypernym is the superior element within a class, while hyponyms are the subordinate ones. Angela Bidu-Vrănceanu and Narcisa Forăscu point out that this relation underlies lexicographic and terminographic definitions and contributes to the formulation of proximal gender and specific differences, as it is a one-sided inclusive relation [20, p. 2016]. To illustrate the semantic relation of hyponymy in the domain of biomedical engineering, a multi-level hierarchical structure was constructed based on the term *biomedical sensors*. The relation of hyponymy was based on the analysis of the definitions of the generic term (hyperonym)-specific differences (characteristics that vary between co-hyponyms) according to the criterion of inheritance of characteristics between hyperonyms and hyponyms, as used by Juan Carlos Gil Berrozpe and Pamela Faber in their research on hyponymy [8, p. 11]. As for lexical-syntactic structures that can express the semantic relation of hyponymy, we can mention such expressions in English as *is a subclass of, can be categorized in ... groups, such as* and others. These help us in the first stage of identifying the terms between which the relation of hyponymy

is established, which are then analysed in terms of their semantic characteristics. The structuring of the information in the Romanian source for extracting terms did not allow the construction of a hierarchy as extensive as the English one. Thus, in order to illustrate the relation of hyponymy in Romanian, several smaller hierarchies were created, most of them containing only two levels. In some cases, the criterion of specifying the subordinate level was mentioned in the context, which was an another indicator for establishing the relation of hyponymy in addition to the analysis of definitions and the identification of inherited features. As a result, it was possible to construct two hierarchies with the same superordinate terms, the subordinate terms, however, being grouped according to the typological criterion applied. The lexical-semantic structures in Romanian used are: *pot fi împărțite în / clasificate în următoarele categorii*, *clasificarea acestora este*, *există următoarele forme / categorii de*.

The last lexical-semantic relation studied in Chapter 3 is the relation of meronymy representing the part-whole relation. In order to identify examples of terms between which meronymic relations have been established, we used the method proposed by Roxana Girju, Adriana Badulescu and Dan Moldovan in their study on the identification of meronymy relations. According to them, there are a variety of lexical-syntactic structures that can express the semantic relation of meronymy. There are unambiguous lexical expressions such as *consists of, is made of, is a member of* in English (in Romanian *constă din, este format din, este membru a*), by simply detecting which we can identify the relation of meronymy. However, there are quite a few ambiguous expressions that represent the meronymy relation only in some contexts. In this case its identification is based on extracting the semantic features of the constituents and checking whether these features match the classification rules [9, p. 87-88]. Then, the examples presented were classified according to the taxonomy developed by Morton E.

Winston, Roger Chaffin and Douglas Herrmann delineated six types of meronymic relations: component/ integral object, member/ collection, portion/ mass, stuff/ object, feature/ activity, place/ area [23, p. 420-421]. In both languages, the component/ integral object type of meronymy predominates (en: *enzymatic catalyst – biomedical enzymatic sensor*; ro: electrod de pH/electrod ion selectiv – senzor potențiometric), with few examples detected of the stuff/ object type (en: *polyurethane/polyurea compositions – silicon*; ro: *platină/hidrogen – electrod de hidrogen*) and only one example in English of the portion/ mass type (*hemoglobin – blood*).

GENERAL CONCLUSIONS AND RECOMENDATIONS

1. While terminology retained the applied nature that generated interest in its study during the early stages of development, it has also formed a theoretical basis, the evolution of which has been influenced by the shift in research paradigms from Ferdinand de Saussure's structuralism to the cognitive paradigm. Thus, the research in the field of terminology is of both theoretical and practical interest, with the diversity of theoretical aspects being reflected in the applied part of the current study.
2. As a field of science that has integrated medicine and engineering, biomedical engineering has a complex terminological system. The identification and analysis of the structural and lexical-semantic features of terminology in English and Romanian has been able to provide a broad picture of the way in which terminology operates within this domain in these specific languages.
3. Derivation is an important means of term formation which contributes to the systemic character of specialised vocabulary. Of the 80 derived terms in English, 59% are formed by suffixation, 20% by prefixation, 21% by adding both prefix and suffix. Of the 86 derived terms in Romanian, 66% are formed by suffixation, 13% by prefixation, 21% by adding both prefix and suffix.
4. Compounding is considered an important means of term formation in regard to systematising terminology in a given field. Although syntagmatic compounds were found to be the most numerous in both languages, English (82%), unlike Romanian (73%), is characterized by a more varied typology. Compound terms formed using neoclassical elements are also used in both languages: 18% in English and 27% in Romanian.

5. Although there has been debate about their use, eponyms continue to be an important part of scientific terminology, including the domain of biomedical engineering. Of the 39 eponymous terms identified in English, 21% are formed by a synthetic genitive, 10% by a formal adjective and 39% by a derived noun. Of the 51 eponymous terms identified in Romanian, 68% have the form common noun + person's name, 18% common noun + lui + person's name, 4% common noun + person's name with a suffix that forms an adjective, 10% those that have as connecting element the expression "de tip".
6. In the sources used to extract the terms analysed in the study abbreviations are accompanied by the extended term reducing the risk of ambiguity. Regarding the typology of abbreviations, in both English and Romanian most of them were identified as initialisms (82% in English, 78% in Romanian), with a smaller number of acronyms (12% in English, 11% in Romanian) and shortenings (6% in English, 12% in Romanian).
7. Neologisms or neonyms are considered a means of forming terms when the need arises to designate a new concept, but the delimitation and identification of these terms present a problem, especially because of the diachronic criterion, as all terms can be classified as neonyms at a certain point in time.
8. Borrowing is a widespread phenomenon in both English and Romanian. English has a greater variety of sources of borrowing and more complex ways in which borrowings have been introduced into the language, all of which are fully integrated into the language observing morphological, phonetic and orthographic rules. The Romanian language prefers French as a source of borrowing, the origin of these terms being mainly traced to Latin, with only a few terms originating from Greek, all of which are fully

adapted and integrated into Romanian. Unadapted or partially adapted terms were also identified, originating from English and often used with the equivalent term in Romanian formed through calque.

9. Regarding the lexical-semantic aspect, the present research has identified the existence of such semantic relations as polysemy, synonymy, antonymy, hyponymy and meronymy. The analysis of examples confirmed that semantic relations play an important role in the construction of terminological and conceptual systems.
10. Analyzing the phenomenon of polysemy, we identified terms that also exist in other specialized domains, denoting different concepts. Terms denoting different concepts, but remaining within the domain of biomedical engineering, were also identified, the concepts belonging to the domains that form its conceptual basis. We also identified examples of terms having common semantic characteristics, but belonging to different domains and denoting different concepts.
11. The analysis of synonymy shows that completely different designations for the same concept are a less common phenomenon, with most cases of synonymy being represented either by the designation – definition relationship, or by designations whose form is derived from one another, such as initialisms and their extended forms, their existence being motivated by extra-linguistic considerations, thus mitigating the negative effects of terminological synonymy.
12. Most of the analysed terms in both English and Romanian fall into the category of coordinated and alternative antonyms, with a smaller number of distinctive antonyms. In Romanian, two other categories, namely extreme antonymy and auxiliary antonymy, were also found, but these are represented by an insignificant number of examples.

13. In both English and Romanian hyponymy is widely present, manifesting itself in a similar way by adding differentiating features to subordinate terms at each subsequent level of the hierarchy to make their meaning more specific.
14. In both languages, the component/ integral object type of meronymy predominates, with few examples detected of the stuff/ object type and only one example in English of the portion/ mass type.

The scientific results presented above substantiate the achievement of objectives set by the current study. **The hypothesis and these were confirmed**, the study revealing the internal mechanisms that influence the behavior of the terms in the terminological system as well as the way in which conceptual information is organized within the field, the terminologies in the English and Romanian languages presenting similarities from a structural and semantic point of view. The differences can be explained by the differences in the morphological structure of the languages and by the heterogeneous nature of the analyzed corpus.

Based on the current study the following recommendations can be made:

1. Considering the pace of development of the field, the research could be used in further studies of terminology in the domain of biomedical engineering as well as terminology in other specialised fields.
2. The results of the research could be used to facilitate the management of specialised vocabulary, building and completing terminology bases, which support the process of critical technological innovation and integration in the current social context.
3. A potential direction of research of the terminology in the domain of biomedical engineering would be to study it from a translation perspective, and the results of this study could be used to support interlingual transfer.

BIBLIOGRAPHY

1. Alexeeva, L., Novodranova, V. A Cognitive Approach to Terminology. In: Picht, H. (ed.) *Modern Approaches to Terminological Theories and Applications*. Bern: Peter Lang AG International Academic Publishers, 2006. pp. 25-34 ISBN 9783039111565.
2. Beaugrande, R. Special Purpose Language and Linguistic Theory. In: *Unesco Alsed-LSP Newsletter*, Vol. 10, nr. 2, 1987. pp. 2–10. ISSN 0106-0341.
3. Cabré, M.T. *Terminology: Theory, Methods, and Applications*. Amsterdam/Philadelphia: John Benjamin Publishing Company, 1999. 249 p. ISBN 9789027298652.
4. Cabré, M.T., Condamines, A., Ibekwe Sanjuan, F. (Ed.) *Application-driven Terminology Engineering*. Amsterdam/Philadelphia: John Benjamin Publishing Company, 2007. 206 p. ISBN 9789027292995.
5. Faber, P. The Cognitive Shift in Terminology and Specialized Translation. In: Claramonte, V., África. C., Aixelá, J.F. (eds.) *A (Self-) Critical Perspective of Translation Theories*. Universidad de Alicante, 2009, pp. 107-134. ISSN 1888-9867.
6. Fernández-Silva, S., Freixa, J., Cabré, M.T. Multiple Motivations in the Denomination of Concepts: The Case of "Production Area" in the Terminology of Aquaculture in French and Galician. In: *Journal of the International Institute for Terminology Research* Vol. 20, 2009. pp. 21-38. ISSN 1017-382X.
7. Gagné. A.M., L'Homme, M.C. Opposite Relations in Terminology. In: *Terminology. International Journal of Theoretical and Applied Issues in Specialized Communication* Vol. 22, nr. 1. Amsterdam/Philadelphia: John Benjamin Publishing Company, 2016, pp. 30-51. ISSN 0929-9971.
8. Gil Berrozpe, J.C., Faber, P. Refining Hyponymy in a Terminological Knowledge Base. In: *Proceedings of the 2nd Joint Workshop on Language and Ontology (LangOnto2) & Terminology and Knowledge Structures (TermiKS) at the 10th edition of the Language Resources and Evaluation Conference (LREC 2016)*, Portorož, 2016, pp. 8-15. ISBN 978-2-9517408-9-1.

9. Girju, R., Badulescu, A., Moldovan, D. Automatic Discovery of Part–Whole Relations. In: Merlo, P. (ed.) *Computational Linguistics*, Vol. 32, nr. 1, 2006, pp. 83-135. ISSN 1530-9312.
10. Jones, S., Murphy, M.L., Paradis, C., Willners, C. *Antonyms in English: Construals, Constructions and Canonicity*. Cambridge: Cambridge University Press, 2012, 170 p. ISBN 978-0-521-76179-6.
11. Khoo, C.S.G., Na, J.C. Semantic Relations in Information Science. In: Cronin, B. (ed.) *Annual Review of Information Science and Technology Vol. 40*. New Jersey: Information Today Inc., 2006, pp. 157-213. ISBN 1-57387-242-3.
12. Murphy, M.L., Paradis, C., Willners, C., Jones, S. Discourse Functions of Antonymy: A Cross-Linguistic Investigation of Swedish and English. In: *Journal of Pragmatics*, Vol. 41, nr. 11, 2009, pp. 2159-2184. ISSN 0378-2166.
13. Myking, J. No Fixed Boundaries. In: Antia, B.E. (ed.) *Indeterminacy in Terminology and LSP: Studies in Honour of Heribert Picht*. Amsterdam/Philadelphia: John Benjamin Publishing Company, 2007. pp. 73-91. ISBN 9789027292414.
14. Paradis, C. Good, Better and Superb Antonyms: A Conceptual Construal Approach. In: Vachova, M. (ed.) *The Annual of Texts by Foreign Guest Professors Vol. 3*. Prague: Faculty of Arts, Charles University, 2010, pp. 385-402. ISBN 978-80-7308-290-1.
15. Paradis, C., Willners, C. Negation and Approximation of Antonymic Meanings as Configuration Construals in SPACE. In: Paradis, C., Hudson, J., Magnusson, U. (eds.) *The Construal of Spatial Meaning: Windows into Conceptual Space*. Oxford: Oxford University Press, 2013, pp. 287-311. ISBN 9780199641635.
16. Pugh, J.M., Sager, J.C. Terminology in Special Languages. In: Booij, G.E., Lehmann, C., Mugdan, J., Skopeteas, S. (eds.) *Morphologie: Ein Internationales Handbuch Zur Flexion und Wortbildung 2. Halbband*. Berlin: Walter de Gruyter GmbH & Co, 2004, pp. 1924-1928. ISBN 978-3110172782.
17. Sageder, D. Terminology Today: A Science, an Art or a Practice? Some Aspects on Terminology and its Development. In: *Brno Studies in English*,

Vol. 36, nr. 1, Brno: Masaryk University Press, 2010. pp. 123-134. ISSN 1805-0867.

18. Sager, J.C. *Practical Course in Terminology Processing*. Amsterdam/Philadelphia: John Benjamin Publishing Company, 1990. 257 p. ISBN 9789027274342.
19. Sager, J.C. Term Formation. In: Wright, S.E., Budin, G. (eds.) *Handbook of Terminology Management. Vol. 1 Basic Aspects of Terminology Management.* Amsterdam/Philadelphia: John Benjamin Publishing Company, 1997, pp. 25-41. ISBN 9789027285577.
20. Staicu, S.N. Hierarchic Structuring Medical Terms according to the Semantic Content. In: *Studii şi cercetări de onomastică şi lexicologie (SCOL)*, Anul VI. nr. 1-2. Craiova: Editura SITECH, 2013, pp. 215-220. ISSN 2247-7330.
21. Temmerman, R. *Towards New Ways of Terminology Description: The Sociocognitive Approach*. Amsterdam/Philadelphia: John Benjamin Publishing Company, 2000. 264 p. ISBN 9789027298638.
22. Vogel, R. Synonymy and Polysemy in Accounting Terminology: Fighting to Avoid Inaccuracy. In: *SKASE Journal of Translation and Interpretation*, Vol. 3, nr. 1, Prešov: University Library of Prešov University, 2008, pp. 91-102. ISSN 1336-7811.
23. Winston, M.E., Chaffin, R., Herrmann, D. A Taxonomy of Part-Whole Relations. În: *Cognitive Science*, Vol. 11, nr. 4. New York: John Wiley & Sons, 1987, pp. 417-444. ISSN 1551-6709.
24. Даниленко, В.П. *Русская терминология. Опыт лингвистического описания*. Москва: Изд-во «Наука», 1977, 246 с.

SCIENTIFIC PAPERS PUBLISHED OF THE TOPIC OF DISSERTATON

Articles published in journals abroad:

1. Gobjila, N. The Semantic Relation of Hyponymy in the Terminology Used in the Domain of Biomedical Engineering. In: *Studii şi cercetări de onomastică şi lexicologie (SCOL)*, nr. 1-2. Craiova: Editura SITECH, 2020, pp. 207-214. ISSN: 2065-7161.
2. Gobjila, N. The Relation of Antonymy in the Terminology from the Domain of Biomedical Engineering. In: *Revista de Analiza Discursului ANADISS*, nr. 31(I). Suceava: Universitatea Ștefan cel Mare Suceava, 2021, pp.147-155. ISSN- 2559-4656.

3. Gobjila, N. The Semantic Relation of Meronymy in the Terminology from the Domain of Biomedical Engineering. In: *Meridian Critic - Analele Universității "Ștefan cel Mare" Suceava Seria Filologie*, Vol. 36, nr. 1. Suceava: Universitatea Ștefan cel Mare Suceava, 2021, pp. 219-228. ISSN 2734-7419.

Articles published in journals listed in the National Register of Scientific Journals:

4. Gobjila, N. The Phenomenon of Synonymy in the Terminology from the Domain of Biomedical Engineering. In: *Studia Universitatis Moldaviae (Seria Ştiinţe Umanistice)*, nr. 4(124), Chișinău: CEP USM, 2019, pp.94-98. ISSN 1811-2668.
5. Gobjila, N. Fenomenul eponimiei în terminologia din domeniul bioingineriei medicale în limbile engleză și română. In: *Studia Universitatis Moldaviae (Seria Ştiinţe umanistice)*, nr. 4(134), Chișinău: CEP USM, 2020, pp.41-44. ISSN 1811-2668.
6. Gobjila, N. Particularitățile de formare a termenilor din domeniul bioingineriei medicale în limba engleză și limba română. În: *Intertext*, nr. 3-4(55-56), Chișinău: ULIM, 2020, pp. 47-53. ISSN 1857-3711.

Articles in the proceedings of the international scientific conferences (published in the Republic of Moldova)

7. Gobjila, N. Considerații privind fenomenul neologiei în terminologie. In: *Filologia modernă: Realizări şi perspective în context european. Eugeniu Coșeriu: 100 de ani de la naștere. Limbajul ca sumă de valori.* Chișinău: Pro Libra, 2021, pp.226-230. ISBN 978-9975-3274-4-2.
8. Gobjila, N. Abordări socio-comunicative și socio-cognitive în studiul terminologiei. In: *Materiale ale Colocviului Internațional „Traducerea – Act creativ: Între știință și artă"*. Chișinău: CEP USM, 2022, pp. 115-118. ISBN 978-9975-159-38-8.

Theses in the proceedings of the national scientific conferences with international participation

9. Gobjila, N. Considerații privind variația terminologică din perspectiva abordărilor moderne. In: *Integrare prin cercetare si inovare. Ştiinţe sociale. Rezumate ale comunicărilor*, Vol. 2. Chisinau: CEP USM, 2019, pp.223-226. ISBN 978-9975-149-51-8.

ADNOTARE

Natalia Gobjila: Studiu structural-semantic al terminologiei din domeniul bioingineriei medicale în limba engleză și limba română, teză de doctor în filologie, Chișinău, 2023.

Structura tezei: introducere, trei capitole, concluzii generale și recomandări, bibliografie constituită din 209 de titluri, 2 anexe, 153 de pagini (text de bază).

Rezultatele cercetării sunt publicate în 9 lucrări științifice.

Cuvinte-cheie: terminologie, termen, concept, limbaj specializat, derivare, compunere, eponim, abreviere, neonim, împrumut, relație lexico-semantică, polisemie, sinonimie, antonimie, hiponimie, meronimie.

Scopul lucrării este elaborarea unui studiu al terminologiei din domeniul bioingineriei medicale în limbile engleză și română incluzând aspectele structurale și lexico-semantice. **Obiectivele** sunt: cercetarea principiilor și aspectelor fundamentale ale terminologiei; stabilirea trăsăturilor caracteristice ale unității terminologice ca element cognitiv, lingvistic și comunicativ; determinarea tipologiei, metodelor și procedeelor de formare a termenilor; analiza particularităților de formare a termenilor în domeniul bioingineriei medicale în limbile engleză și română; examinarea conceptului de relație semantică și principalele caracteristici ale acestuia; efectuarea analizei lexico-semantice a terminologiei din domeniul bioingineriei medicale în limba engleză și limba română.

Noutatea și originalitatea științifică rezidă în relevarea particularităților de formare a termenilor din domeniul bioingineriei medicale în limbile engleză și română prin efectuarea unei analize structurale identificând caracterul specific al fiecărui mecanism și manifestarea acestuia, precum și efectuarea unei analize lexico-semantice a terminologiei studiind specificul fiecărei relații lexico-semantice și importanța sa în organizarea conceptelor și structurarea informației în cadrul domeniului bioingineriei medicale. **Rezultatul obținut care contribuie la soluționarea unei probleme științifice importante în teză** constă în determinarea particularităților structurale și lexico-semantice ale terminologiei din domeniul bioingineriei medicale în limbile engleză și română prin elaborarea unui studiu structural-semantic, având ca rezultat relevarea specificului de manifestare a acestor particularități în terminologia limbilor studiate, în vederea aplicării acestora în studierea ulterioară, utilizarea și gestionarea vocabularului specializat.

Semnificația teoretică a lucrării este condiționată de faptul că aceasta reprezintă o încercare de a efectua o cercetare cât mai exhaustivă care ar cuprinde cele mai importante aspecte ale studiului terminologiei ca disciplină teoretică, plus un studiu strcutural-semantic al terminologiei într-un domeniu în permanentă evoluție. **Valoarea aplicativă** a prezentei cercetări rezidă în faptul că rezultatele obținute ar putea fi valorificate pentru a facilita utilizarea și gestionarea vocabularului specializat, construirea și completare a bazelor terminologice ce țin de domeniul bioingineriei medicale, acestea constituind un sprijin în procesul de inovare și integrare tehnologică esențiale în contextul social curent.

Implementarea rezultatelor științifice. Rezultatele cercetării au publicate sub formă de articole științifice pe paginile revistelor de profil din țară și din străinătate. De asemenea, acestea au fost prezentate în cadrul conferințelor cu statut național și internațional, comunicările fiind publicate în culegerile acestora.

ANNOTATION IN ENGLISH

Natalia Gobjila: A Structural-Semantic Study of Terminology from the Domain of Biomedical Engineering in English and Romanian, PhD Thesis, Chișinău, 2023.

Thesis structure: introduction, three chapters, general conclusions and recommendations, a bibliography consisting of 209 titles, 2 annexes, 153 pages (body text). **Research results** are published in 9 scientific papers.

Key words: terminology, term, concept, specialised language, derivation, compounding, eponym, abbreviation, neonym, borrowing, lexical-semantic relation, polysemy, synonymy, antonymy, hyponymy, meronymy.

The aim of the research is a study of terminology from the domain of biomedical engineering in English and Romanian including structural and lexico-semantic aspects.

The objectives of the research are: to investigate the principles and fundamental aspects of terminology; to establish the characteristic features of the terminological unit as a cognitive, linguistic and communicative element; to determine the typology, methods and procedures of term formation; to carry out an analysis of the peculiarities of term formation in the domain of biomedical engineering in English and Romanian; to examine the concept of semantic relation establishing its main characteristics; to carry out the lexico-semantic analysis of terminology in the domain of biomedical engineering in English and Romanian.

The scientific novelty and originality of the research lies in revealing the peculiarities of term formation in the domain of biomedical engineering in English and Romanian by performing a structural analysis identifying the specific character of each mechanism and its manifestation, as well as performing a lexical-semantic analysis of the terminology studying each lexical-semantic relation and its importance in the organization of concepts and structuring of information within the domain of biomedical engineering. **The result obtained, which contributes to the solution of an important scientific problem in the thesis**, consists in determining the structural and lexico-semantic peculiarities of the terminology in the domain of biomedical engineering in English and Romanian through a strcutural-semantic study, with the result of revealing these peculiarities in the terminology of the studied languages, in order to apply them in the further study, use and management of specialized vocabulary.

The theoretical value of the research is determined by the fact that it represents an attempt to carry out as exhaustive a research as possible that would encompass the most important aspects of the study of terminology as a theoretical discipline, as well as a strcutural-semantic study of the terminology in a constantly evolving field. **The applied value** of the present research lies in the fact that the results obtained could be used to facilitate the use and management of specialised vocabulary, building and completing terminology databases related to the domain of biomedical engineering, and support the process of critical technological innovation and integration in the current social context.

The implementation of scientific results. The research results have been published in the form of scientific articles on the pages of the relevant journals at home and abroad. They have also been presented at conferences with national and international status, with papers published in their proceedings.

ANNOTATION IN RUSSIAN

Наталья Гобжила: Структурно-семантическое исследование терминологии в области биомедицинской инженерии в английском и румынском языках, диссертация на соискание учёной степени кандидата филологических наук, Кишинёв, 2023.

Структура: введение, три главы, общие выводы и рекомендации, библиография, состоящая из 209 наименований, 2 приложения, 153 страниц (основной текст). **Результаты исследования** опубликованы в 9 научных работах.

Ключевые слова: терминология, термин, понятие, специализированный язык, аффиксация, словосложение, эпоним, аббревиатура, неоним, заимствование, лексико-семантическое отношение, синонимия, антонимия, гипонимия, меронимия.

Целью исследования является структурно-семантическое изучение терминологии в области биомедицинской инженерии в английском и румынском языках. **Задачи исследования:** рассмотреть принципы и фундаментальные аспекты терминологии; установить характерные особенности терминологической единицы; определить типологию, методы и способы образования терминов; провести анализ образования терминов в области биомедицинской инженерии в английском и румынском языках; рассмотреть понятие семантического отношения; провести лексико-семантический анализ терминологии.

Научная новизна и оригинальность заключается в выявлении особенностей образования терминов в области биомедицинской инженерии в английском и румынском языках путем проведения структурного анализа, выявляющего специфику каждого механизма и его проявления, а также в проведении лексико-семантического анализа и изучении специфики каждого лексико-семантического отношения и его значения в организации понятий и структурировании информации. **Полученный результат, способствующий решению важной научной задачи,** заключается в определении структурных и лексико-семантических характеристик терминологии в области биомедицинской инженерии в английском и румынском языках с целью выявления конкретных проявлений данных особенностей в терминологии исследуемых языков в рамках дальнейшего изучения, использования и употребления специализированной лексики.

Теоретическая значимость работы обусловлена тем, что она представляет собой попытку провести как можно более полное исследование, охватывающее наиболее важные аспекты изучения терминологии как теоретической дисциплины, а также структурно-семантическое изучение терминологии постоянно развивающейся области. **Практическая ценность** исследования заключается в том, что полученные результаты могут быть использованы для интенсификации работы с специализированной лексикой создания и пополнения терминологических баз, связанных с областью биомедицинской инженерии, и поддержки процесса технологических инноваций и интеграции в современном социальном контексте.

Внедрение научных результатов. Результаты исследования опубликованы в научных журналах Р. Молдова и за рубежом, а также представлены в сборниках материалов научных конференций.

GOBJILA NATALIA

A STRUCTURAL-SEMANTIC STUDY OF TERMINOLOGY FROM THE DOMAIN OF BIOMEDICAL ENGINEERING IN ENGLISH AND ROMANIAN

621.04. Lexicology and lexicography, terminology and special languages, translation studies (the English language)

Summary of the doctoral dissertation in Philology

Approved for printing: 4th January, 2023. Format 60x84 1/16
Offset printing 2,2. Order 10. Edition 30 copies.

Centrul Editorial-Poligrafic al USM
Str. Al. Mateevici, 60, MD, 2009