INTERDISCIPLINARITY IN ENVIRONMENTAL TERMINOLOGY

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Abstract

Environmental terminology, regarded as a unitary set of terms, arouses the interest of linguists in the linguistic research of the contemporary period, building a bridge between the terms of specialized vocabulary and the domains in which they appear with identity or change of meaning. Therefore, this study aims to highlight and analyze several terms taken over from biology, physics, chemistry, medicine, part of the interdisciplinary scientific vocabulary used in environmental terminology.

Key-words: *terminology, definition, term, meaning, interdisciplinary scientific vocabulary*

Résumé

La terminologie de l'environnement, considérée comme un tout unitaire de termes, suscite l'intérêt des linguistes dans le domaine des recherches linguistiques à l'époque contemporaine, constituant un pont entre les termes du lexique spécialisé et les domaines où ils apparaissent avec identité ou changement de sens. Donc, cette étude se propose de mettre en évidence et d'analyser quelques termes repris de la biologie, de la physique, de la chimie, de la médecine, qui font partie du lexique scientifique interdisciplinaire utilisée dans la terminologie de l'environnement.

Mots-clés: *terminologie, définition, terme, sens, lexique scientifique interdisciplinaire*

Introduction

A natural consequence of the modernization of our society is the continuous development of all scientific areas in order to keep pace with international innovations. A large number of new notions have emerged in Romanian, which has led to an increased concern for the study of terminology. This permanent enrichment of the Romanian vocabulary is supported by the flexibility and hospitality that characterize this language compartment, which is the most subject to change. Environmental terminology, viewed as a set of terms specific to science, is increasingly attracting the researchers' interest, a fact underpinned by global changes over the last years. The study of terminology is necessary due to the development of all branches of science and their specialization and the emergence of numerous new notions. From this point of view, we join the opinion of E. Pavel and C. Rucăreanu that terminology is a dynamic science which is constantly developing and improving[1].

Many loans and internal creations are recorded in lexicographic works, but usage indicates that many of them have not been inventoried yet; that is why we consider research on contemporary vocabulary more than necessary.

[1]Pavel, Eugeniu, Rucăreanu, Costin, 2001: 16.

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The analysis of environmental terminology is of linguistic concern and can be made from several perspectives (semantic, morphological, stylistic-functional, etymological). Given the object of study of environmental terminology, one may note that the terms used are preponderantly interdisciplinary scientific terms, "specialized terms used in more than one scientific language"[2]. For example, ecology is "closely related to many other biological and nonbiological disciplines[3]: biology, geography, physics, chemistry, mathematics, pedology, climatology, physiology, electricity, pedagogy, music, astronomy, meteorology, transport, religion, gymnastics, history, monetary language, logic, arts. Interdisciplinarity also illustrates "the great mobility of vocabulary[4], the migration of terms either from a specialized language to another specialized language, or from specialized language to common language or vice versa, with an emphasis on the existence of the common lexical nucleus"[5] .

The terms that make up the semantic category of environmental terminology are characterized by diversity, being the fruitful result of some lexical, semantic, grammatical and/or figurative methods. The naming procedure is fully motivated, harmonizing with the evolution of society at the global level. Along with other categories of words, the lexemes belonging to the terminology of the environment contribute to the enlargement of the vocabulary of the Romanian language, providing a rich and diversified research basis.

The delimitation of the environment as a domain is favoured by the establishment of national and international bodies with environmental concerns, such as: the Ministry of the Environment and Climate Change of Romania, the National Agency for Environmental Protection, the National Environmental Guard, international bodies: the European Environment Agency, the European Environment Information and Observation Network (EIONET), the Environment Council (part of the Council of the European Union), the Global Environment Facility (GEF), the Intergovernmental Nations Environment Program (UNEP), the World Nature Organization (WNU), etc.

Corpus analysis

Environmental terminology operates with both terms specific to the terminology of the environment and interdisciplinary terms, used by several specialized languages. In this paper we have focused on the interdisciplinary scientific terms that designate the main factors to which the environmental domain refers (climatic factors). The analyzed corpus consists of five terms selected from the official online source of the Ministry of the Environment[6]. In the course of the analysis, we have tried to observe the definition of these terms in a general usage dictionary (DEX), their diastratic marking in DEX and the identity of or difference in meaning of interdisciplinary terms in various specialized languages. For word etymology, we have used MDA.

From the sector of climatic factors, we will analyze the terms *mediu* ('environment'), *lumină* ('light'), *căldură* ('heat'), *temperatură* ('temperature'), *ecosistem* ('ecosystem').

[2] Bidu-Vrănceanu (coord.), 2001: 4.
[3] Daia, 2011: 8-9.
[4] Bidu-Vrănceanu (coord.), 2000 : 2
[5] See Bidu-Vrănceanu (coord.), 2000: 2-4.
[6] http://www.mmediu.ro/

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Environment is a well-known term, being used in both common vocabulary and specialized languages (biology, chemistry). In general usage, the lexeme *mediu* ('environment'), n.n.<Lat. *medium* represents "all natural factors and those created by human (anthropic) activities, which determine in a close interaction the conditions for human existence and the development of society"[7]. The expression *surrounding environment* is well-known and frequent in use, being considered a pleonasm, therefore only the term *environment*[8] is used within the scope of this domain. "Surrounding nature and the totality of external factors where beings and things exist" (DEX: 714). The Law on environmental protection delimits the concept of environment while defining it as "all natural conditions and elements of the Earth: a) air, water, soil, and subsoil; b) all layers of the atmosphere; c) all organic and inorganic materials as well as living beings; d) interacting natural systems comprising elements from "a" and "c", including the resulting historical, cultural, and aesthetic values"[9]. In the specialized encyclopaedic dictionary DEM, the lexeme *mediu* ('environment') is defined as follows: "(ecol.) a complex resulting from the combination of landscape conditions, geological structure, climate, soil, vegetation, waters, etc., in which organisms live (…); (ecol.) syn. medium, ecological medium, medium for life, all physical, chemical, climatic, biological factors with which an organism comes into contact"[10].

The unity between an organism and the environment is expressed in a synthetic manner by the interaction between the living matter and primary inorganic nature (abiotic factors). The first definition is common and captures the sense of the term *environment* as the nature surrounding us, comprising certain factors and specific conditions. The specialized definition makes a clearer reference to the organism-environment relationship, through syntagms that highlight the domains involved and emphasize the interdisciplinary character of this field, ie the environment.

In biology, the term *mediu* ('environment') appears in such phrases as: *mediu de cultură* ('culture medium'), "sterilized nutrient solution used to multiply microbes in the laboratory for various purposes" (DEX: 812); in medicine, it is part of the phrase *mediu intern* ('internal medium'), "all the humors that bathe the cells of the body" (DEX: 812); in physics, the term acquires the meaning "solid, liquid or gaseous substance, electromagnetic or gravitational field, in which physical phenomena occur" (DEX: 812); in chemistry, the following structures are used: *mediu bazic* ('basic medium'), "inorganic or organic compounds which in aqueous solutions dissociate or ionize forming hydroxyl-OH ions" (DEX: 35), *mediu acid* ('acidic medium'), "aqueous solution, it has a sour taste and reddens the litmus paper, and in combination with metals, it forms salts" (DEX: 9). The term has many meanings in the common vocabulary: "that is in the middle", "moderate, balanced, tempered" (DEX: 812).

Light is a well-known term, used in both common vocabulary and specialized languages (forestry, astronomy, biology, physics, maritime/air transport). *Lumina* ('light'), f.n.< Lat. *lumina*, "radiation or complex of electromagnetic radiation emitted by incandescent bodies (with or without a flame) or luminescent and impressing the human eye; the effect of this radiation" (DEX: 665). In the terminology of the environment, the lexeme *lumină* ('light') is used with the meaning - with direct reference to

[7] https://legeaz.net/dictionar-juridic/mediu-inconjurator
[8] https://legeaz.net/dictionar-juridic/mediu-inconjurator
[9] Law no.137/1995.
[10] DEM 2005: 29.

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the sunlight – "complex of electromagnetic radiation emitted by the Sun" and in the phrase *lumină naturală* ('natural light') in the sense of "completely unpolarized light, characterized by the diversity of the oscillation directions of the electromagnetic radiation composing it, evenly distributed around the propagation direction" (DEX: 665). In environmental terminology, too, the term *lumină* ('light') is used in the phrase *lumina apei* ('water light') with the meaning the surface/gloss of water. In the specialized encyclopaedic dictionary, the phrase *lumină antisolară* ('antisolar light') occurs, referring this time to the field of astronomy, "a very faint spot that can be seen in the sky at night in the place opposite the Sun"[11]. In physiology the phrase *lumină animală* ('animal light') is used, "light produced by some animal organisms based on the chemical energy of some substances" (DEX: 665). In physics, we find the structure *lumină electrică* ('electric light'), "lighting based on electric light" and the phrase *lumină de control* ('control light') , "luminous indication that serves to control the state and operation of a remote control device, switches, and railway signals" (DEX: 665). In maritime, air transport, *light* is defined as "luminous source (usually coloured) on a ship, aircraft, used to indicate position or signaling" (DEX: 665). In the common vocabulary, *lumină* ('light') is used with ordinary meanings: *lumina zilei* ('daylight') (produced by the Sun), *lumina electrică* ('electric light'), *lumina lumânării* ('candlelight') (light produced by a lit candle).

Heat *căldură* ('heat'), f.m. < Lat. *caldura*, "the condition or degree of heating of a body; the fact that a body has a certain temperature; the sensation produced by warm bodies; high temperature" (DEX: 172). In the specialized encyclopaedic dictionary, the lexeme is defined as "energy variation in a system resulting from the difference between its temperature and that of its neighbourhoods"[12]. The term is used in physics and in meteorology with a common meaning feature, ie the phrase *fenomene termice* ('thermic phenomena'). The term is diastratically marked in DEX, and is also used in the phrases *căldură specifică* ('specific heat') and *căldură animală* ('animal heat'). In meteorology: *căldură* ('heat')< Lat. *caldura*, f.n., (in the pl.) "warm weather, hot atmosphere; torrid weather" (DEX: 172).

In physics: *căldura*, f.n. < Lat. *caldura*, is "a scalar size expressing the transfer of energy between physico-chemical systems or between different parts of the same system in a transformation in which no mechanical work is done; by ext. part of physics studying thermic phenomena" (DEX: 172).

Temperature *temperatură* ('temperature'), f.n.<Lat. *temperatura*, "the degree, the heat state of an environment, of a body" (DEX: 1238). In the specialized encyclopaedic dictionary, the term is defined as "the degree of heat required by plants, animals and beings in the surrounding universe for growth and development"[13]. The term primarily belongs to the field of physics, being "borrowed" by environmental terminology, with an identity of meaning. Migrating to other domains, the lexeme acquires in physiology the meaning "a constant state of the animal body, representing the balance between the produced heat and the lost heat" (DEX: 128). In medicine, but also in common usage, the term becomes synonymous with fever, "the high degree of heat of the human body, representing a pathological symptom; hotness, fever" (DEX: 128).

[11] DEM 2005: 15.
[12] DEM: 38.
[13] DEM: 654.

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Ecosystem *ecosistem* ('ecosystem'), n.n.<Fr. *écosystème*, occurs in environmental terminology as "an ensemble consisting of biotope and biocenosis, between which close relationships are established both among organisms and between them and abiotic factors" (DEX: 240). Unlike DEX, DEM provides a more complex definition, making use of the specialized language of environmental terminology: "a natural unit that includes all living organisms (*biocenosis*) and the environment (*biotope*) in which they live. The relationships between living organisms and environmental factors are achieved by the mutual exchange of matter and energy between them; it has no fixed limits, its numerical, faunistic, floristic and trophic structure being permanently mobile; it represents the basic structural and functional unit in ecology and constitutes a superior level of organization of the living matter (eg the lake, the forest, the meadow) "[14]. As one can see, the definition provided by DEM emphasizes the belonging of the term to both biology and the vast field of the environment. In the field of geography, we find the phrase *ecosistem terestru*[15] ('terrestrial ecosystem') covering the totality of beings, plants, settlements on the surface of the earth. In the aquatic subdomain[16], the ecosystem acquires the meaning of all living creatures and plants in the flowing and/or still water area.

Conclusions

On the basis of the analysis we can see that the interdisciplinary terms subject to analysis have simple etymology (light, heat, temperature). They are mostly polysemantic, developing meanings which are either related or different in the specialized fields in which they are used. By analyzing the definitions recorded in DEX, we have noticed that not all meanings are diastratically marked, the domain of reference being inferred from the informational body of the definition. The definitions in the specialized dictionaries (DE, DEM) provide concise, concrete, detailed information, and are thus available to non-specialist speakers in the field. As far as interdisciplinary terms are concerned, we can mention that four of them are in the process of determinologisation, being known to both specialists and non-specialists, with reference to the terms *light, heat, temperature, environment*, a fact which demonstrates the mobility of terms between vocabulary compartments.

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[14] DEM: 54.
[15] Posea, 1986: 270.
[16] Idem, *ibidem*.

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ABBREVIATIONS

DEM= Constantin Pârvu, *Dicţionar enciclopedic de mediu, Vol. I –II,* Bucureşti, Editura Regia Autonomă Monitorul Oficial, 2005.
DEX= Academia Română, *Dicţionarul explicativ al limbii române*, ediția a II a, Bucureşti, Editura Univers Enciclopedic, 1996.
EE= Ion Dediu, *Enciclopedie de ecologie,* Chișinău, Editura Ştiința, 2010.
MDA = Academia Română, *Micul dicţionar academic*, vol. I-II, Bucureşti, Editura Univers Enciclopedic Gold, 2010.

SOURCES

http://www.mmediu.ro/
https://legeaz.net/dictionar-juridic/mediu-inconjurator

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