

Questions about Interdisciplinary Terminology

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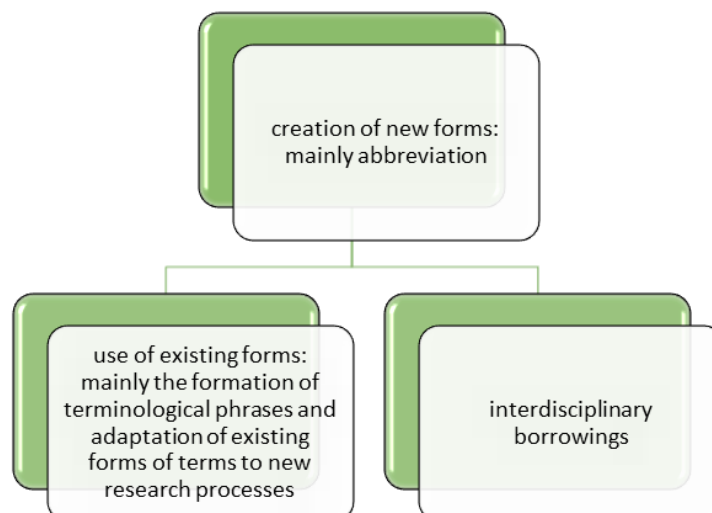
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Abstract

The article analyzes and discusses the phenomenon of interdisciplinary terminological problems in scientific literature. The interdisciplinarity of modern science raises the problem of mutual understanding between specialists with basic research and cognitive experience in different scientific fields. One of the sources of difficulties for such mutual understanding is consubstantial terms used in parallel in different professional fields, or in professional and everyday communication. This complexity cannot be overcome only by using specialized terminological dictionaries of individual disciplines, focused only on representatives of one professional field.

Keywords: scientific term, evolution of scientific knowledge, interdisciplinary terminology, semantics of terms, mutual understanding.

The topic of this article is to study the peculiarities of the formation of terms of interdisciplinary sciences in modern English based on the terminology of human biomechanics. Despite the fact that biomechanics appeared at the intersection of two of the most traditional scientific disciplines with a long history of development (biology and physics), as an independent discipline, united with neurophysiology into a single science - the physiology of movements, it began to be studied only in the twentieth century. The key difference between mechanics and biomechanics is that the former studied the methods and laws of motion of nonliving bodies, while the latter studies the mechanical processes that occur during movement in living organisms, in individual organs of deformable systems. Biomechanics is a complex science; it includes a wide variety of knowledge from other sciences, such as mechanics and mathematics, functional anatomy and physiology, age-related anatomy and physiology, pedagogy and the theory of physical education [1].



However, the vocabulary of biomechanics has not yet been subjected to systematic terminological study. There is no dictionary of biomechanics terms. Biomechanics is often viewed as the relationship between structure and function. Human biomechanics uses terms of anatomy to describe musculoskeletal structure and terms of mathematics and physics to describe function: the application of movement and to measure various quantities: length, mass, time, temperature, force, etc. Basic concepts of physics, used to describe mechanical processes during movement, are subject to semantic changes in biological systems that have an associative connection with them. There is a process of reterminologization of existing concepts. Thus, the terminology of biomechanics within the term system has its own characteristics and undergoes lexical and structural changes, which should be studied in the current conditions of the development of society and the demand for this science.

The scientific terminology of many branches of knowledge is the result of a long evolution; therefore, it can give an idea of the history of the formation of certain scientific ideas. And although these words are used to designate sound features, the name of the letter is clearly used to form them, i.e., in fact, the term “sound” and “letter” are not differentiated. This is not the only case of reflection of syncretism in the perception of a sound unit and its graphic appearance. Thus, among the speech therapy terms naming various manifestations of dyslalia (violation of sound pronunciation), many derivatives are found, created on the basis of the names of the letters of the Greek alphabet. Thus, the terms gammacism, cappacism, chitism are used to designate violations in the pronunciation of back-lingual sounds, rhotacism and lambdacism, correlate with problems of articulation of [r] and [l], iotacism, is associated with the manifestation of additional iotaic articulation in all consonants, regardless of their position in the word, and the term sigmatism refers to disturbances in the pronunciation of whistling and hissing sounds [4]. It is impossible to imagine the formation of such a term in modern science, with its strict requirement to distinguish between sound and letter. But in the era of the dominance of the comparative-historical paradigm in linguistics, when the most important object of study were dead ancient languages, this, apparently, was not so significant, since the main source of empirical material was written monuments. Let us recall the term sigmatic aorist, motivated by the name of the Greek letter sigma; It is quite obvious that for the researcher the main identifying feature of this form in the ancient Greek text was precisely this letter in the suffix of the verb form. Despite the fact that such terms are incorrect from the point of view of modern linguistics, they nevertheless continue to be successfully used both in teaching practice and in scientific work.

The main reason for their stability is their compactness, brevity and clear internal form. However, already in the examples given we see that the internal form in different disciplines acquires different meanings. Thus, the speech therapy term sigmatism includes ideas about the problems of pronunciation of sibilants, while the terminological combination sigmatic aorist assumes the presence of the sound [s] in the suffix. These examples of interdisciplinary terminological homonymy do not represent a noticeable linguo-didactic problem, since the training of a speech therapist teacher does not involve studying the history of the Russian language, however, in some cases, in the practice of teaching such related disciplines as speech therapy and the Russian language with the basics of linguistics, a situation of terminological interference may arise. This phenomenon occurs in cases where different sciences use the same term, but put different content into it. Thus, linguists use the term paronyms to mean “words that are similar in morphological composition and, therefore, in sound, but differ in meaning” [1]. Another notable example is the meaning of the term allophone, which linguists refer to as a variant of a phoneme, and speech therapists refer to as a distorted sound resulting from incorrect articulation. Differences between the use of such terms in the speech of linguists and speech therapists are also observed in the sphere of so-called professional vernacular, which includes “non-standardized form of existence of special linguistic means” [2].

In these professional areas, such units arise as a consequence of the tendency to save speech effort. For example, a complete description of a consonant sound by place of formation presupposes an indication of the active and passive organs of speech, but if the characteristic of sound articulation is not the center of a scientific or educational message, then a loss of one of

the components is observed. According to our observations, linguists usually omit that part of the sound characteristic that indicates passive organs. Thus, the characteristic posterior lingual posterior palatal will be reduced to posterior lingual. Speech therapists prefer the term posterior palatal in this situation, which is not accidental, since many of the causes of articulation problems are associated with defects in the structure of the speech apparatus. Sometimes saving speech effort leads to the appearance of such abbreviations, which in one of the scientific communities are considered as defective from the point of view of logic and speech culture, and in another community are perceived as working. These are, for example, expressions such as the formation of word formation: vocabulary, grammar in a child. They are common in speech therapy practice, but cause rejection among linguists, from whose point of view one should talk about the development of a child's vocabulary, grammatical concepts, etc [3]. Thus, the practice of teaching the Russian language for the specialty "speech therapy" is associated with the linguo-didactic problem associated with the danger of terminological interference, which requires work to prevent it. For this purpose, it is necessary to clarify not only the difference in the meanings of terms, but also the reasons leading to the emergence of interdisciplinary terminological homonymy. This could be, for example, the borrowing of a term from another science for example, the term morphology is borrowed by linguistics from biology, the formation of terms in different sciences on the same motivating basis: for example, the term rhoticism in speech therapy means a pronunciation defect, and in linguistics - a transition [s] or other consonants in [r].

Terminological problems may also be a consequence of the fact that fundamental science develops and improves its terminological system, changes it, and the applied branch of knowledge continues to use the previous terminology of this fundamental science. Thus, in speech therapy practice, the terms palatalized/non-palatalized, which were popular in the linguistics of the 19th century, are often used to denote soft and hard consonant sounds. Now they can be successfully replaced with traditional soft/hard ones. The latter are much more convenient for pronunciation, continue the school naming tradition and are presented in textbooks on the modern Russian language, which are used by future speech therapists. To be fair, we note that similar problems also exist in the practice of teaching students of the same specialty. For example, there are known serious terminological problems that arise in the practice of teaching the course "History of the Russian Literary Language", since such important concepts as, for example, style or vernacular, have repeatedly changed their content in the history of Russian studies following changes in the language itself. Thus, terminological homonyms require mandatory clarification in teaching practice. According to our observations, such an explanation will be effective in explaining the reasons that give rise to such problems.

Similar terminological combinations were encountered in this work when describing the terms for the names of axes, planes, amplitudes, etc. in biomechanics. All these terms are multicomponent terminological combinations that reflect the hierarchy and systematicity of concepts in the terminological system of biomechanics. The terms "force - force", "strength - intensity, tension, strength, force", "plane - plane", "axis - axis, center line" [5] are the cores of these terminological phrases. They are defined and clarified by other vocabulary units and give the terms narrower meanings. Speaking about the ways of forming terms in interdisciplinary sciences, abbreviation should be mentioned as one of the productive ways of term formation. One of the trends in term formation in modern English is the reduction of multi-component terms.

Having studied the lexical-semantic corpus and the structural composition of terminology, we came to the following conclusions.

1. Analysis of the lexical-semantic connections of terms shows that these connections can be internally systemic and intersystem.
2. Interdisciplinary concepts are presented in this science in the form of linguistic formulas and logical-geometric models, which brings their essence as close as possible to an unambiguous interpretation and the possibility of use in other scientific disciplines. As a result, it was possible

not to create new basic concepts, but to expand the application of existing concepts in the synthesis of sciences.

3. The corpus of terms mainly consists of multi-component terminological combinations, which is a sign of a relatively young terminological system [4].

4. From the point of view of using terms, we did not find any difficulties, since the terms of each discipline involved in solving specific disciplinary problems in this interdisciplinary science are located in the term field: within the system of their scientific concepts.

5. Terms of intersystem functioning, as a rule, form terminological phrases in which the term is included as an integral part, playing the role of the semantic core of an invariant that specifies the meaning and clarifies information based on the differential feature of the concept.

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