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THE ROLE OF MORPHOLOGICAL AND SYNTACTIC DERIVATION IN THE FORMATION OF NEUROLINGUISTIC TERMS

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Abstract

This article analyzes the role of morphological and syntactic derivation in the formation of neurolinguistic terminology. Neurolinguistics is considered an interdisciplinary field that studies the relationship between language and the brain, the manifestation of language units in the human brain, and the neurophysiological foundations of speech activity. Therefore, terms related to this field are formed at the intersection of linguistics, neurology, psychology, neuropsychology, and medical terminology. The study examines morphological methods of derivation such as affixation and composition, as well as syntactic derivation processes arising on the basis of attributive, predicative, and terminological combinations. Using neurolinguistic terms as examples, the structural and semantic features of units such as neurolinguistics, neurolinguistic, aphasia, agrammatism, neuroplasticity, lexical retrieval, semantic processing, syntactic processing, and speech production are revealed. As a result of the analysis, it is substantiated that morphological derivation serves to form new terms in a concise and systematic manner, while syntactic derivation serves to express complex scientific concepts clearly and differentially.

Keywords: neurolinguistics, term, terminology, morphological derivation, syntactic derivation, affixation, composition, terminological combination, neuroplasticity, aphasia, linguistic term.

The development of modern science accelerates the emergence of new concepts and the need to name them. The development of a terminological system is of particular importance, especially in disciplines formed at the intersection of several scientific fields. Neurolinguistics is one such interdisciplinary field, which develops in close connection with linguistics, neurology, neuropsychology, psychology, and cognitive sciences. J. Niemi, M. Laine, and J. Tesak describe neurolinguistics as a science at the intersection of linguistics, psychology, neuropsychology, and neurology that studies the manifestation and processing of language in the human brain [1]. In modern research, phenomena such as aphasia, speech production, lexical processing, semantic and syntactic processes are considered the main research objects of neurolinguistics [2; 3].

As neurolinguistics develops, its specialized terminological system is also expanding. In this process, along with the use of existing general scientific and general linguistic units, the formation of new terms through morphological and syntactic methods plays an important role. The creation of a new unit in terminology is not limited to the formation of a new word. When naming a specific scientific concept, semantic accuracy, systematicity, motivation, and the relationship with other terms are also taken into account. The ISO 704:2022 standard notes that the main principles of terminological work are linked to the relationship between concept, object, definition, and designation, and that there are general principles for the formation of terms [4].

From this perspective, the morphological and syntactic derivation of neurolinguistic terms should be studied not only as a phenomenon of word formation but also as a means of systematizing scientific concepts.

The specificity of neurolinguistic terms is primarily determined by their interdisciplinary nature. In this field, the terminological resources of several scientific disciplines may be involved in the formation of a single term. For example, aphasia is closely linked to medicine and neurology, syntax and semantics to linguistics, and processing and retrieval to cognitive psychology. Consequently,

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neurolinguistic terminology actively utilizes international terms of Greco-Latin origin on the one hand, and word-formation and phrase-formation models of modern English on the other. The interdisciplinary nature of neurolinguistic terminology is also reflected in its term-formation models. For example, the term neurolinguistics is formed from the combination of the components neuro- and linguistics. Here, the neuro- component denotes a concept related to the nervous system and the brain, while linguistics refers to the scientific discipline that studies language. As a result, combining the two components forms a new name for a scientific discipline.

The significance of such a model in terminology is that it allows for a partial understanding of a new term's meaning through its constituent parts. Sager views term formation as a process related to naming new concepts in specialized fields of knowledge, emphasizing the importance of using existing linguistic resources in term creation [5]. Cabré, on the other hand, interprets terminology as an interdisciplinary field that encompasses the relationship between concepts, their naming, and specialized communication, rather than merely a set of words [6]. Thus, when studying neurolinguistic terms, it is crucial to determine not only their lexical meaning but also the morphological and syntactic models on which they are based.

Morphological derivation is one of the primary methods for forming a new lexical unit; it involves creating a new lexeme by adding an affix to an existing stem or through other morphological changes. In modern morphological theory, derivation differs from inflection in that it creates a new word with a new meaning [7]. In ISO terminological resources, derivation is also defined as the process of forming a new word through a change in word form or affixation [8]. In neurolinguistic terminology, one of the most active forms of derivation is affixation. The English term neurolinguistic is a clear example of this: neuro + linguistic → neurolinguistic. This unit is formed from the term neurolinguistics via the adjective-forming morpheme -ic. As a result, an adjective denoting a connection to this field is formed from a noun stem representing the name of the discipline. For example, in compounds such as neurolinguistic research, neurolinguistic approach, and neurolinguistic evidence, this adjective enters into a terminological relationship with other nouns. Morphological derivation is also important in the term neuroplasticity: neuro + plastic + -ity → neuroplasticity. This term is used to describe the ability of the neural system to reorganize itself after experience, learning, or injury. Neuroplasticity is considered one of the important concepts in research related to the restoration of language functions and the reorganization of brain networks [3]. Another productive type of morphological derivation is the formation of terminological paradigms using affixes such as -ism, -ic, -al, -tion, and -ity. For example: agrammatism, agrammatic, linguistic, neurological, processing, production, retrieval, plasticity. In these units, derivation is not only a means of forming a separate term but also serves to create various grammatical and terminological forms of a single concept. For example: process → processing; produce → production; plastic → plasticity. Thus, an interconnected terminological paradigm arises around a single conceptual center. This strengthens the systematic nature of neurolinguistic terminology. The productivity of Greek and Latin morphemes in neurolinguistic terms also deserves special attention. Components such as neuro-, psycho-, linguo-, cerebro-, a-/an-, dys-, hyper-, and hypo- determine the semantic direction of various terms. For example, the dys- component is used to express the meaning of disorder or difficulty.

In units such as dysarthria and dyslexia, this component forms the main terminological semantic load. Thus, morphological derivation performs three main functions in neurolinguistic terminology: naming a new concept, demonstrating the semantic relationship between existing concepts, and forming a terminological paradigm. In neurolinguistic terminology, composition—that is, the creation of a new term by combining two or more lexical components—is also widespread. In ISO terminological dictionaries, composition is defined as the process of forming a new word by combining at least two lexemes [8]. The term neurolinguistics is an important example of this process.

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As a result of the combination of the neuro- and linguistics components, the name of the new discipline was formed. Furthermore, morphemic combinations are observed in units such as neuropsychology, neurolinguistics, psycholinguistics, and neuroplasticity, allowing for the concise naming of scientific concepts.

An important feature of such terms is their motivation. That is, the components within a term provide a semantic signal for understanding its general meaning. For example, the term neuropsychology can be divided into the components neuro- "related to the nervous system/brain" and psychology "the science that studies mental processes." On this basis, the general conceptual direction of the term is understood. This feature is important for the terminological system, as the motivation between the term's structure and meaning helps to identify concepts more quickly in scientific communication. ISO 704:2022 also defines the relationship between a concept and its naming as an important terminological issue in the formation of terms [4].

In neurolinguistic terminology, not only single-word terms but also terminological combinations consisting of two or more components are highly active. In particular, syntactic derivation is of special importance in expressing complex neurolinguistic concepts. In such units, the modifier + modified model is typically highly active: language processing, speech production, lexical retrieval, semantic processing, syntactic processing, phonological processing, language disorder, motor speech disorder, word production, sentence comprehension.

The semantic center of these terms is usually located in the last component, while the first component limits their meaning. For example, processing in a general sense means "processing," while semantic processing refers specifically to the process of processing semantic information. Similarly, syntactic processing represents the processing of syntactic information, and phonological processing represents the processing of phonological information. Neurolinguistic studies have shown that the phonological, semantic, and syntactic components of language are researched at various levels. Modern research on aphasia also describes language function through separate but interconnected domains, such as phonology, semantics, and syntax [2].

Therefore, syntactic terminological combinations become an important tool in naming these concepts. In particular, the [terminological modifier + base term] model is highly productive: semantic + processing → semantic processing; syntactic + processing → syntactic processing; lexical + retrieval → lexical retrieval; speech + production → speech production. Through this model, the general concept is differentiated based on various special semantic features. For example, the base term processing can become the center of several terminological units: phonological processing → semantic processing → syntactic processing. As a result, a terminological paradigmatic series is formed. Such terminological combinations also reflect the interdisciplinary nature of neurolinguistics. For example, the term lexical retrieval describes the process of retrieving a lexical unit from memory and is used at the intersection of linguistics and cognitive psychology. Speech production, on the other hand, refers to the process of producing speech and serves as a common terminological unit for linguistics, psycholinguistics, and neuropsychology. In aphasia research, the neurocognitive foundations of word and verb processing, lexical processes, and speech production are studied separately [9]. Syntactic derivation also allows for the step-by-step naming of complex concepts. For example: language → language processing → language processing disorder In this sequence, the initial language denotes a general concept, language processing denotes a process, and language processing disorder denotes a disorder in this process. Thus, as a result of syntactic expansion, the semantic scope of the term narrows, and its scientific precision increases. In neurolinguistic terminology, it is incorrect to consider morphological and syntactic derivation as completely separate phenomena. On the contrary, they often participate in the formation of a single term sequentially or in parallel. For example: neuro + linguistic → neurolinguistic and neur

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