MORPHOLOGICAL SYNTHESIS: NEW APPROACHES AND METHODS IN WORD FORMATION

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Abstract: Morphological synthesis is accepted in linguistics as a general term for approaches and methods used in analyzing the process of word formation and developing new words. This scientific article provides detailed information about the main concepts of morphological synthesis, its significance in linguistics, as well as modern approaches and methods. It also examines new morphological techniques in word formation, including affixation, reduplication, conversion, and other morphological processes through which words can be formed. The article is based on important studies related to various branches of linguistics, particularly word formation, semantics, and lexicography. New morphological synthesis methods are creating innovations especially in the fields of computational linguistics and natural language processing, which increases the efficiency of morphological analysis technologies used in automatic language processing. In addition, the article discusses the role of morphological synthesis in language learning and translation processes.

Keywords: Morphological synthesis, word formation, morphology, affixation, reduplication, conversion, computational linguistics, natural language processing, derivation, lexicography, semantics.

Word formation is one of the most important issues in linguistics and constitutes an integral part of the continuous evolution of language. Words, as the basic units that represent language and society, are formed in new conditions and with new meanings. Morphological synthesis utilizes the internal resources of a language in the word-formation process, namely morphemes (the smallest meaningful units of a word) and their combinations. Methods of morphological synthesis serve as the main tools of word formation and influence the semantics, syntax, and pragmatics of language. Nowadays, scientific approaches and techniques of morphological synthesis have significantly expanded, creating new opportunities for linguists and developers of linguistic technologies. Morphological synthesis is mainly based on two fundamental aspects of language: the interaction of morphemes and the semantic formation of words. In the process of word formation, morphemes are combined to produce new words, where affixation, reduplication, conversion, blending, and other morphological processes play an important role. Each approach is characterized by its specific features:

Affixation is the process of modifying the morphological structure of a word by adding affixes (prefixes, suffixes, infixes). It is the most widespread method of morphological synthesis. Through affixation, new words belonging to different parts of speech, such as verbs, adjectives, and nouns, can be created. The Uzbek language has a rich system of affixes that exhibit various characteristics in word formation. For example, from the word *kitob* (book), new words such as *kitobxon* (reader) and *kitobxonlik* (reading culture) can be formed. Affixation also contributes to shaping the syntactic and semantic properties of the language.

Reduplication is the process of creating new meanings through the repetition of a word or its part. Often, this process is accompanied by affixes, but in some cases, simple repetition itself leads to the emergence of new words. In Uzbek, expressions such as *bilib-bilib* ("knowingly") are formed through reduplication. Reduplication adds social and emotional coloring to words and deepens their meaning.

Conversion is the process of forming new words by changing the grammatical category of an existing word. For example, a verb may be transformed into a noun or an adjective, resulting in changes in both meaning and function. In Uzbek, such transformations are common; for instance, from the verb *yoz* (to write), the noun *yozuvchi* (writer) is derived. Conversion-based word formation mainly responds to social and communicative needs.

Blending is the process of creating new words by combining parts of two or more words. Typically, a new lexical unit is formed from the initial part of one word and the final part of another. In English, such words are widespread, for example, *smog* (smoke + fog) and *brunch* (breakfast + lunch). Similar approaches are beginning to appear in Uzbek as well, such as *internetbank* (internet + bank).

Morphological synthesis plays a crucial role in the field of computational linguistics. In natural language processing (NLP) systems, approaches to morphological synthesis are fundamental for word generation and analysis. In NLP, especially affixation and conversion processes are applied algorithmically and serve as important tools for automatic translation, dictionary construction, and the development of lexicographic systems. Morphological-synthesis-based word formation technologies help account for semantic aspects of language and ensure high efficiency in automatic language processing. Morphological synthesis also plays an important role in language learning. A person learning a language studies morphological processes involved in creating new words, which enhances their understanding of the language. The use of morphemes in word formation helps learners construct words and derive meaning. At the same time, morphological synthesis is applied in language teaching as a tool for personal and social communication.

Morphological synthesis is a significant approach in the word formation process and plays a major role in shaping the social, semantic, and syntactic aspects of language. Through this method, it is possible to identify various approaches to creating new words, including processes such as affixation, reduplication, conversion, and blending. The application of morphological synthesis in modern technologies, particularly in computational linguistics and natural language processing, is opening new opportunities for linguistics. Furthermore, studying morphological processes that assist learners in word formation leads to more effective language learning and deeper understanding. The role of morphological synthesis in creating new words continues to increase. As a process that reflects the richness and dynamism of language, it is highly significant not only in education but also in scientific research. Through morphological synthesis, the renewal and modernization of language—especially via innovative word formation methods based on social and technological changes—create new linguistic opportunities.

At the same time, the development of morphological synthesis, particularly within research conducted using computational linguistics and natural language processing technologies, contributes to improving the efficiency of next-generation software systems.

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