



CONTEMPORARY LINGUISTIC APPROACHES TO THE STUDY OF PARTONOMY

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Abstract: This article provides a systematic examination of the theoretical foundations of partonomy and analyzes its treatment within cognitive, conceptual, computational, and linguo-cultural approaches. Special emphasis is placed on the cross-linguistic universality of whole–part relations and their role in the organization of lexical meaning. The paper also reviews recent international theses and global research initiatives, including multilingual WordNet projects and other conceptual network frameworks, which demonstrate the growing scholarly interest in modeling meronymic and holonymic relations across languages. By situating Uzbek linguistic data within this broader international context, the study highlights the significance of integrating lesser-described languages into global semantic resources and computational linguistic platforms.

Keywords: partonomy, semantic relations, cognitive linguistics, conceptual network, whole–part structure, meronymy–holonymy, WordNet, cross-linguistic research.

In contemporary linguistics, increasing attention is being devoted to studying language not only as a communicative tool but also as a system that reflects the conceptual structure of human cognition. The semantic relations between linguistic units represent how objects are organized in the human mind and how they relate to one another [6; 15]. From this perspective, partonomy—a type of semantic relation that denotes the “whole–part” connection between lexical items—deserves particular analytical focus.

Partonomic relations play a crucial role in understanding the internal structure of objects in language and in constructing their conceptual models. Examples such as car – engine – wheel in English and uy – eshik – tom in Uzbek demonstrate the universality of this relation. The study of partonomy has moved beyond traditional lexicological analysis and has become one of the central issues in cognitive and computational linguistics [1; 26].

When discussing the theoretical foundations of partonomy, linguistics treats it as a lexical–semantic relation alongside hyponymy, antonymy, and synonymy. However, the key distinction lies in the fact that partonomic relations reveal the structural and compositional integrity of an object [7; 46]. For example:

in English: tree – branch – leaf;

in Uzbek: tana – bosh – qo'l.

These relations represent the semantic architecture between a whole and its constituent parts. The classification of partonomic relations proposed by Winston, Chaffin, and Herrmann (1987) remains widely used today. They identify five primary types of partonomic relations [8; 417–444]:

1. Component-object: keyboard – computer
2. Place-area: room – house
3. Substance-object: wood – table
4. Action-instrument: handle – door
5. Member-collection: sheep – flock

This classification continues to serve as a foundational semantic model in the development of modern semantic networks such as WordNet, FrameNet, and ConceptNet [2; 14]. Another important perspective is the cognitive approach, which views partonomy as a mental mechanism through which humans perceive the world as a system divided into parts [5; 18]. Every object or concept is mentally segmented into components, and this segmentation is encoded linguistically. Expressions such as “the head of society,” “the heart of the system,” or “the body of thought” represent metaphorical extensions of whole-part relations and function as key tools in conceptual modeling.

Cognitive analysis shows that partonomic structures are used not only to describe physical objects but also to represent abstract concepts. This connects partonomy directly with conceptual metaphor theory. A further approach concerns computational linguistics. In contemporary artificial intelligence systems, “part–whole” relations constitute a crucial component of semantic analysis. In WordNet [2; 16], partonomic relations are modeled through meronymy (part) and holonymy (whole). Such models play an essential role in machine translation, semantic analysis, automated question–answering systems, and the construction of knowledge graphs. Uzbek linguistics has also made notable progress in this area. The automatic identification of partonomic relations in Uzbek and their integration into electronic dictionaries and AI-based linguistic systems represent a promising research direction.

In this regard, it is necessary to highlight the significance of B. Qilichev's study titled “Partonimiya in the Uzbek Language.” As the research emphasizes, given the wide variety of relational patterns such as partonomy, synonymy, and hyponymy, it is natural to question how each lexical item participates in these networks. For example, the general linguistic nature of the word “daraxt” (tree) can be analyzed within its synonymous, gradonymic, hyponymic, and partonymic series [10; 13].

Additionally, A. Haydarov's textbook “Semantics and Word Structure” offers an extensive discussion of semantic relations—synonymy, antonymy, graduonymy, and partonymy—within the system of lexical meaning [9; 61–71].

From a linguocultural perspective, partonomy also constitutes an important object of analysis. Certain words do not merely denote anatomical or physical parts but convey concepts rooted in national mentality and cultural values. In Uzbek, for instance, the words “bosh,” “ko‘ngil,” and “yurak” denote not only body parts but also symbolically express social and moral values [4; 6]. This demonstrates that partonomic units play a vital role in cultural encoding.

In conclusion, the theory of partonomy today is evolving into an interdisciplinary model that harmonizes lexicosemantic, cognitive, conceptual, and computational analytical approaches. It occupies an important place in uncovering the internal structure of the



linguistic system, the conceptual mechanisms of human cognition, and the cultural meanings expressed through language.

In the future, constructing a digital model of partonomic relations for the Uzbek language, integrating it into WordNet-type networks, and embedding it within AI-linguistic systems will remain a priority on the international research agenda. These directions will be examined in greater detail in our subsequent work.

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