

The Role Of Eponyms In Scientific Terminology And Their Principles Of Development

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Abstract: Eponyms occupy a significant place in scientific terminology as linguistic units derived from the names of scholars, researchers, or historical figures who made substantial contributions to the development of science. They serve not only as nominative tools but also as markers of scientific heritage, continuity, and intellectual recognition. This abstract examines the role of eponyms in the formation and standardization of scientific terminology, highlighting their cognitive, cultural, and communicative functions. Particular attention is given to the principles governing their development, including motivation, internationalization, stability, and adaptation to modern terminological systems. The study emphasizes that while eponyms enrich scientific language, their use requires systematic regulation to ensure clarity, consistency, and intercultural comprehensibility in contemporary scientific discourse.

Keywords: Eponyms; scientific terminology; term formation; nominative function; standardization; scientific discourse; linguistic development.

Introduction: Scientific terminology is an important mirror of scientific development. With the emergence of a new theory, law, unit, or technology, the need to name it inevitably arises. One of the most widespread methods of term formation is eponymization. An eponym (from Greek *epi* "upon" and *onoma* "name") is the naming of a discovery, phenomenon, or scientific object after the person who created it or studied it.

G. Rees defines the place of eponyms in scientific heritage as follows: "Eponyms are a kind of history of science, because each term contains personal labor, intellect, and a historical trace" (Rees, 2018, p. 44).

Today, eponyms are found in many fields such as physics (Newton's laws), medicine (Alzheimer's disease), mathematics (Gaussian distribution), and engineering (the Diesel engine).

Eponyms are considered an integral part of the language of science and technology. The names of scholars such as Newton, Mendel, Fibonacci, and Turing are associated not only with scientific discoveries but also with the historical development of human intellect. Studying eponyms is important for a deeper understanding of scientific heritage, for

comprehending the development of terminology, and for illuminating the historical roots of scientific thinking.

Methodology (Methods). The emergence of eponyms, their historical roots, and their international standardization were examined comparatively. The formation of scientific terms, their semantic features, and linguistic structure were studied on the basis of existing eponyms. The terminological theories presented in the works of Anderson (2019) and Cabré (2003) were taken as evaluative criteria. The study employed terminological analysis, historical-comparative analysis, and structural analysis methods. The combination of these methods made it possible to conduct a comprehensive analysis of the role of eponyms in scientific terminology.

Literature review. Sources such as Britannica, Oxford Scientific Eponyms, A. Hall (2021), and Grant (2017) were used to generalize existing scholarly views. A. Hall notes the function of eponyms as "units that condense scientific ideas" (2021, p. 112). E. M. Kakzanova emphasizes that the concept of the eponym, borrowed from linguistics, should be understood as a term that

denotes a scientific concept (2011, p. 25).

Results and discussion. Science and technology are the foundation of social progress. Globally, the development of these two spheres has had a positive impact both in Western and Eastern countries. For example, in the West: Newton's formulation of the fundamental laws of dynamics in physics; Lomonosov's discovery of the law of conservation of matter; and Mendeleev's periodic system in chemistry. In the East: Muhammad Musa al-Khwarizmi's contributions to mathematics, astronomy, mechanics, history, and geography; Ahmad Mirvazi's work in trigonometry; Abu Ali Ibn Sina's medical doctrine; and the major achievements of Mirzo Ulugbek, Ali Qushchi, Qozizoda Rumi, and Ghiyath al-Din al-Kashi in astronomy and number theory. These great discoveries contributed to enriching the stock of neologisms in the onomastics branch of linguistics with eponyms related to science and technology.

Today, many types of eponyms exist in scientific fields: theories, laws, equations, proofs, and elements have often become eponyms named after the people who first discovered or proved them. As E. M. Kakzanova notes, "The concept of the eponym which is borrowed from linguistics, is understood as denoting a scientific concept of the term," that is, the concept of the eponym adopted from linguistics is understood as a designation of the scientific concept expressed by a term.

Eponyms included in technical terminology are associated with specific objects or processes of material reality and can be grouped as follows:

1. Apparatus: Kipp's apparatus — Kipp apparatus; Gatso speed camera — Gatso camera.
2. Balances: Cavendish torsion balance — Cavendish torsion balance.
3. Candles: British Standard candle — British Standard candle.
4. Cylinders: Faraday cup — Faraday cup.
5. Tubes: Thiele tube — Thiele tube.
6. Thermometers: Fahrenheit thermometer — thermometer with the Fahrenheit scale.
7. Galvanometers: Weston galvanometer — Weston galvanometer.
8. Pressure gauges: McLeod gauge — McLeod gauge (vacuum/pressure gauge).
9. Devices/chambers: Wilson cloud chamber — Wilson chamber.
10. Engineering structures: Monier arch — Monier arch.

11. Automobile brands: Toyota, Ford — automobile brands.

Many car names—such as Ford, Chevrolet, Ferrari, or Porsche—named in honor of Henry Ford, Louis-Joseph Chevrolet, Enzo Ferrari, or Ferdinand Porsche, as well as words denoting engine types (e.g., diesel, named after Rudolf Diesel), are considered eponyms and have entered common everyday usage.

12. Carriages (coach types): clarence — a closed four-wheeled carriage with seats for four inside and a seat for the driver outside (a type of carriage).
13. Automobile components/engine terms: diesel — an internal combustion engine type.
14. Musical instruments: saxophone, saxotromba — saxophone and saxotromba (wind instruments).
15. Pistols: Derringer — derringer.
16. Revolvers / firearms: Browning — a .30 caliber gas-operated, air-cooled, magazine-fed automatic rifle, often provided with a barrel rest; Berdan — "Berdanka," a single-shot rifle; Davis gun — Davis gun.
17. Machine guns: Gat — a machine gun associated with Richard Jordan Gatling; Joe Manton — a hunting gun and cannon; Long Tom — a heavy gun.
18. Cannons: Armstrong — a cannon of the Armstrong system.
19. Mortars: Stokes — a British two-legged light mortar.

20. Shells: Shrapnel — shrapnel (artillery shells).
21. Rockets: Congreve rocket — a signal and illumination rocket.
22. Grenades: Mills bomb — a British hand grenade.
23. Shelters: Anderson shelter — a slit-type bomb shelter covered with an iron roof.

When writing less commonly used nominative forms of weapon types, lowercase spelling tends to prevail. Partially transferred names denoting various types of weapons are written with an initial capital letter.

In the group under study, the transition of proper names into common nouns occurs through the distribution of a given name across a number of similar objects—that is, through generalization.

In science and technology, as well as in everyday usage, eponymic units functioning as the scientific concept of a term incorporate the following features:

1. They consist of a proper noun or a common noun.
2. They result from the metonymic transfer of a proper noun through a non-affixal method.
3. They are formed as an affixal derivative of a proper

noun.

As can be seen, proper names—i.e., the names of persons, places, or objects—are used to describe general objects, concepts, or qualities. Such words may include eponyms that are sometimes written with capital letters and sometimes with lowercase letters. Eponyms typically originate from personal names, place names, or mythological names, and they refer to the proper noun that served as the source of the word or is considered the source of another name.

CONCLUSION

Eponyms are an important component of scientific terminology and constitute an integral element of scientific heritage, historical memory, and international communication. They help express scientific concepts in a precise, concise, and stable form, while also perpetuating the names of individuals who occupy a significant place in the history of science. The formation and development of eponyms rely on principles such as identification, internationalization, linguistic adaptation, and stabilization.

Nevertheless, eponyms also have certain shortcomings, including low semantic transparency, historical controversy, and ethical issues. Even so, in twenty-first-century science eponyms remain relevant and are expected to continue to be an important part of scientific terminology in the future.

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