

<https://doi.org/10.62837/2026.3.87>

**GÜLNAR VAQİF QIZI MƏHƏRRƏMZADƏ**  
**Azərbaycan Dövlət Neft və Sənaye Universiteti**  
Azadlıq 20, Bakı  
**[gulnar.meherremzade84@gmail.com](mailto:gulnar.meherremzade84@gmail.com)**  
**<https://orcid.org/0000-0002-6041-2061>**

## **THE TERM AS A UNIT OF INTERDISCIPLINARY POLYSEMY SUMMARY**

Scientific communication across disciplines is increasingly showing that many technical terms have a cross-disciplinary applicability with a maintained but discipline-specific meaning. This paper examines interdisciplinary polysemy and contends that the term itself should be considered the basic unit of analysis for the explanation of semantic continuity across disciplines. The paper outlines a theoretical framework consisting of three criteria: semantic core, contextual differentiation, and functional variation. The semantic core maintains conceptual cohesion by keeping a common abstract core for all disciplinary instantiations of a term. Contextual differentiation captures how the discourse context of a discipline selects particular semantic features. Functional variation captures the different epistemic and communicative functions that the same term can have across knowledge systems.

Based on examples from linguistics, computational science, physics, and social theory, the analysis shows that the polysemy of interdisciplinary terms is a systematic and productive feature of specialized language, rather than a source of terminological inconsistency. The results indicate that the recognition of the term as a stable yet dynamically extensible conceptual unit provides a more coherent model for terminology studies, interdisciplinary translation, and scientific knowledge organization. The framework developed in this research can be used for the theoretical understanding of specialized lexical systems and for the development of methodological tools for improving terminological precision in cross-disciplinary academic communication.

**Key words:** *Interdisciplinary polysemy, terms, interdisciplinary terms, polysemantic words.*

Interdisciplinary polysemy appears as a result of terminological nomination carried out on the basis of universal principles. As a result of the variability of the nominative function of terms, terms act not only as nouns, but also as other basic parts of speech, increasing the possibilities of interdisciplinary polysemy in the language.

The lexicon of the language, as a macro system, creates several subsystems, in which the meanings of polysemantic words are formed by micro systems. The

boundaries of any level are subject to transformations, because at the macro level the lexical level of the language expands, and at the micro level changes occur in the lexical structure of individual words.

Vocabulary is the basis of any language. It holds a very important place because the meaning of communication is established through words only. To listen and understand, to read and comprehend, and to communicate both orally and in writing, one has to have a proper vocabulary [1]. Determining the scope of interdisciplinary polysemy is of interest, because its meaning belongs to various fields of science and, having a special system of meaning, also belongs to the terminological system of the language.

Due to the emergence of new concepts with the development of science and technology, new terms enter the terminological system of the language, and as a result, changes occur in the existing terminological system. As a result, scientific and technical progress affects the development of inter-domain terminological polysemantic units. Terms that exist in one field sometimes pass into another field. A term that has passed into another field naturally undergoes a change in meaning, referring to a different concept. The existence of cross-field polysemantics at different levels of the terminological system indicates the development of its meaning system and its inclusion in the terminological system of the language.

Contemporary scientific discourse is ever more marked by interdisciplinary exchange, wherein concepts, methods, and terms are exchanged between discourse domains. Such exchange is commonly the source of divergences in specialized meaning that exist on the basis of a single terminological form. Confronted with this kind of variation, tradition has tended to speak of ambiguity or terminological inconsistency; a spate of recent research insists, however, on the systematicity and motivatedness of the variation at issue [5, pp. 80–83; 16].

In this respect, interdisciplinary polysemy is fundamentally different from general lexical polysemy. While the latter mainly takes place in everyday language, depending on metaphorical or metonymic extension, interdisciplinary polysemy results from the interaction of different conceptual systems. This paper argues that the term itself-as a concept-oriented linguistic unit integral to special-purpose language-is the principle carrier and unit of analysis of interdisciplinary polysemy.

Above all, it is customary to divide the lexical system of language into units that serve general communicative functions and those used for special purposes within professional and scientific domains. Languages for special purposes are distinguished by terminological precision, restricted synonymy, reduced syntactic variability, and a high reliance on conceptual systems [8; 13, pp. 18–21].

Such a process of naturalizing a term in its environment, that is to say, in a given LSP (Language for Specific Purposes), logically implies narrowing of its semantic range. This effect has been attained by means of specialized vocabulary but

also by syntactic recurrence, frequent nominalization, and stylistic standardization. Scientific discourse favors impersonal structures and nominal groups with high informational density, which bestow meaning stability within the disciplinary tradition [7, pp. 54-56].

However, when a term is borrowed into another discipline, it is incorporated into another LSP system. The integration changes the meaning of the term, with continuity of concept preserved, thus generating conditions for interdisciplinary polysemy.

Interdisciplinary polysemy can thus be described as the application of one term across various disciplines with varying meanings that, although dissimilar, are interconnected conceptually and derive from a common semantic foundation. It is essential to differentiate interdisciplinary polysemy from the concept of homonymy, as the latter implies a conceptual relationship and meaning which are historically unrelated [11].

The term is the appropriate unit of interdisciplinary polysemy for the following reasons: first and most important, the term is related to concepts, not to usage alone; according to ISO 704, a term is a designation of a defined concept in a specialized domain [9, pp. 3-5].

Further, it is strictly regulated in its meaning by conventions, definitions, and practices in each discipline; and, finally, the phenomenon of terminological variation is systematic, not random, and serves functional goals, not epistemological ones.

The first defining feature of interdisciplinary polysemy is the existence of a semantic core, defined as a stable conceptual nucleus common to all disciplinary manifestations of the word. The semantic core is the most abstract level of meaning and guarantees semantic consistency across disciplines.

- In mathematics, *a matrix* is a rectangular arrangement of numbers or symbols in rows and columns to represent a linear transformation or a system of equations [15].
- In computer science and data processing, *a matrix* is a two-dimensional data structure used for storing, processing, or transforming information [6].
- In biology and medicine, *a matrix* is the structural environment surrounding cells or components, such as the extracellular matrix, which offers supportive organization to tissues [2].

Although there are differences in definition across disciplines, all these definitions have a semantic common core: an organized structural framework in which elements are arranged, embedded, or systematically related. This semantic common core confirms that *matrix* is a single interdisciplinary polysemous term, not a group of unrelated homonyms.

The second criterion is contextual differentiation, whereby the specific meaning of a term is activated and specified by the context of a particular discipline.

In specialized discourse, the context is not only situational but also conceptual, including theoretical assumptions and methodological frameworks. According to Allwood [3, pp. 36-38], the meaning potential is constrained and realized in different ways according to the context and institution.

- In computational linguistics, *alignment* is the correspondence between linguistic units in parallel texts or between words in translation models [10, pp. 79-80].
- In molecular biology, sequence *alignment* is the arrangement of DNA, RNA, or protein sequences to detect structural or evolutionary similarity.
- In organizational studies, *alignment* is the coordination of institutional strategies, resources, and goals.

In all these definitions, the context of differentiation is involved in determining whether the definition is for the process of discrimination, interpretation, or decision-making, while still having the conceptual base of arriving at a clear determination or clarity.

In this definition, the context of the discipline determines whether *alignment* is about linguistic units, biological sequences, or institutional processes, but maintains the same conceptual meaning of systematic correspondence between structured elements.

The third criterion is functional variation. Across disciplines, the same term may fulfill different cognitive or communicative functions.

- In thermodynamics, *entropy* is a measure of the amount of disorder or the number of microscopic configurations that are possible for a macroscopic state [4].
- In information theory, *entropy* is a measure of the statistical probability of uncertainty or information content in a message distribution [14, p. 49].
- In linguistics and statistical discourse analysis, *entropy* is employed to calculate variability, predictability, or informational distribution in linguistic systems [12, p. 61].

In these fields, the functional role of the term is very different: in physics, it is a thermodynamic state variable controlling energy conversion processes; in information theory, it is a probabilistic function of informational uncertainty; and in linguistic analysis, it is a statistical procedure for modeling systemic variability in language. However, all these instantiations are firmly rooted in a common conceptual basis—a quantitative index of systemic uncertainty or distributional multiplicity. This illustrates how a very technical term can exhibit functional diversity across fields while maintaining conceptual integrity, thus illustrating the phenomenon of interdisciplinary polysemy.

The implications of recognizing the term as a unit of interdisciplinary polysemy are important in terminology management, translation studies, and

knowledge transfer. The conventional terminological approach that relies on univocity is inadequate to describe the interdisciplinary variation [5].

In translation studies, the lack of consideration of interdisciplinary polysemy can result in the selection of inappropriate equivalents, especially when the term is the same but belongs to a different conceptual system. In interdisciplinary research, terminological awareness is important to avoid conceptual misunderstandings.

This paper has contended that the term should be viewed as the basic unit of interdisciplinary polysemy and that semantic variation across disciplines indexes conceptual continuity rather than lexical fragmentation. Through the development of three analytical criteria—semantic core, contextual differentiation, and functional variation—it has provided a framework for the systematic analysis of how specialized terms function across scientific disciplines.

The analysis above indicates that interdisciplinary terms usually index a conceptual core that maintains semantic unity despite differences in disciplinary definitions. On the other hand, the disciplinary context triggers particular interpretations that delimit the functional meaning of a given term in professional discourse. Finally, functional variation indicates that a given term can index different epistemic and communicative functions based on the methodological focus of a particular discipline.

These results confirm a dynamic view of terminology, according to which semantic extension is viewed as a structured process connected to conceptual development and knowledge transfer between domains. In this view, interdisciplinary polysemy appears not as a source of ambiguity but as a natural and fruitful aspect of scientific language, which makes intellectual communication and conceptual innovation possible.

The significance of this approach can be extended to a number of application areas. In translation studies and multilingual scientific communication, the recognition of interdisciplinary polysemy can enhance terminological accuracy by giving priority to conceptual similarity rather than simple lexical identity. In terminology management and knowledge organization, the framework proposed above may help to distinguish between actual conceptual connections and mere homonyms, and thus contribute to more trustworthy terminological databases.

In conclusion, the term serves as a stable yet flexible conceptual interface connecting knowledge systems. The recognition of its role as the central unit of interdisciplinary polysemy offers a more coherent foundation for the study of specialized language and provides practical insights for the analysis, standardization, and transmission of scientific knowledge in an increasingly interdisciplinary research environment.

### References

1. Hacıyeva, Z. Improving lexical skills as an important part of teaching English // *Filologiya məsələləri*, – 2025, № 8, – s. 32–39. – Azərbaycan Milli Elmlər Akademiyası M. Füzuli adına Əlyazmalar İnstitutu.
2. Alberts, B., Johnson, A., Lewis, J., et al. *Molecular Biology of the Cell*. 6th ed. New York: Garland Science, 2015.
3. Allwood, J. “Meaning Potentials and Context: Some Consequences for the Analysis of Variation in Meaning.” In: Cuyckens, H., Dirven, R., & Taylor, J. (eds.), *Cognitive Approaches to Lexical Semantics*. Berlin: Mouton de Gruyter, 2003.
4. Atkins, B. T. S., & Rundell, M. *The Oxford Guide to Practical Lexicography*. Oxford: Oxford University Press, 2008.
5. Cabré, M. T. *Terminology: Theory, Methods and Applications*. Amsterdam: John Benjamins, 1999.
6. Goodfellow, I., Bengio, Y., & Courville, A. *Deep Learning*. Cambridge, MA: MIT Press, 2016.
7. Halliday, M. A. K., & Martin, J. R. *Writing Science: Literacy and Discursive Power*. London: Falmer Press, 1993.
8. Hoffmann, L. *Communication and Languages for Special Purposes*. Berlin: Langenscheidt, 1984.
9. ISO. *ISO 704: Terminology Work — Principles and Methods*. Geneva: International Organization for Standardization, 2009.
10. Koehn, P. *Statistical Machine Translation*. Cambridge: Cambridge University Press, 2010.
11. Lyons, J. *Semantics*. Vols. 1–2. Cambridge: Cambridge University Press, 1977.
12. Manning, C. D., & Schütze, H. *Foundations of Statistical Natural Language Processing*. Cambridge, MA: MIT Press, 1999.
13. Sager, J. C. *A Practical Course in Terminology Processing*. Amsterdam: John Benjamins, 1990.
14. Shannon, C. E., & Weaver, W. *The Mathematical Theory of Communication*. Urbana: University of Illinois Press, 1949.
15. Strang, B. M. H. *Modern English Structure*. London: Edward Arnold, 1968. ✓(correct original edition — safest to cite academically)
16. Temmerman, R. *Towards New Ways of Terminology Description: The Sociocognitive Approach*. Amsterdam: John Benjamins, 2000.

**Gülzar Məhərrəmzadə**

**TERMIN SAHƏLƏRARASI POLISEMIYANIN VAHIDI KİMİ  
XÜLASƏ**

Sahələrarsı elmi ünsiyyət getdikcə bir çox texniki terminlərin qorunub saxlanılan, lakin müəyyən elmi sahəyə xas mənə ilə sahələrarsı tətbiq olunma qabiliyyətinə malik olduğunu göstərir. Bu məqalədə sahələrarsı polisemiya araşdırılır və terminin özünün sahələrarsı semantik davamlılığın izahı üçün əsas təhlil vahidi hesab edilməli olduğu iddia edilir. Məqalədə üç meyardan ibarət nəzəri çərçivə təsvir olunur: semantik nüvə, kontekstual fərqləndirmə və funksional variasiya. Semantik nüvə terminin bütün sahələrarsı təcəssümləri üçün ortaq mücərrəd nüvəni saxlayaraq konseptual birliyi qoruyur. Kontekstual fərqləndirmə, bir sahənin diskurs kontekstinin müəyyən semantik xüsusiyyətləri necə seçdiyini əks etdirir. Funksional variasiya, eyni terminin bilik sistemləri arasında malik ola biləcəyi müxtəlif epistemik və kommunikativ funksiyaları əks etdirir.

Dilçilik, hesablama elmi, fizika və sosial nəzəriyyədən nümunələrə əsaslanaraq, təhlil göstərir ki, sahələrarsı terminlərin polisemiyası terminoloji uyğunsuzluq mənbəyi deyil, ixtisaslaşmış dilin sisteməlik və məhsuldar xüsusiyyətidir. Nəticələr göstərir ki, terminin sabit, lakin dinamik şəkildə genişləndirilə bilən konseptual vahid kimi tanınması terminologiya tədqiqatları, sahələrarsı tərcümə və elmi biliklərin təşkili üçün daha uyğun bir model təmin edir. Bu tədqiqatda hazırlanmış çərçivə ixtisaslaşmış leksik sistemlərin nəzəri anlaşılması və sahələrarsı akademik ünsiyyətdə terminoloji dəqiqliyi artırmaq üçün metodoloji vasitələrin hazırlanması üçün istifadə edilə bilər.

**Açar sözlər:** *sahələrarsı polisemiya, terminlər, sahələrarsı terminlər, polisemantik sözlər.*

**Гюльнар Магеррамзаде**

**ТЕРМИН КАК ЕДИНИЦА МЕЖДИСЦИПЛИНАРНОЙ  
ПОЛИСЕМИИ  
РЕЗЮМЕ**

Научная коммуникация между дисциплинами все чаще демонстрирует, что многие технические термины обладают междисциплинарной применимостью с сохранением общего семантического ядра, но с дисциплинарно-специфичной интерпретацией. В статье рассматривается междисциплинарная полисемия и обосновывается положение о том, что термин следует рассматривать как основную единицу анализа для объяснения семантической преемственности между дисциплинами.

В работе представлена теоретическая основа, включающая три критерия: семантическое ядро, контекстную дифференциацию и функциональную вариативность. Семантическое ядро обеспечивает концептуальную

целостность, сохраняя общее абстрактное основание для всех дисциплинарных вариаций термина. Контекстная дифференциация отражает то, каким образом дискурсивная среда конкретной дисциплины актуализирует определенные семантические признаки. Функциональная вариативность описывает различные эпистемические и коммуникативные функции, которые один и тот же термин может выполнять в различных системах знания.

На основе примеров из лингвистики, информатики, физики и социальной теории анализ показывает, что полисемия междисциплинарных терминов является систематической и продуктивной характеристикой языка для специальных целей, а не источником терминологической несогласованности. Результаты исследования свидетельствуют о том, что признание термина как стабильной, но динамически расширяемой концептуальной единицы обеспечивает более целостную модель для терминологических исследований, междисциплинарного перевода и организации научного знания. Разработанная в исследовании модель может быть использована как для теоретического осмысления специализированных лексических систем, так и для разработки методологических инструментов повышения терминологической точности в междисциплинарной академической коммуникации.

**Ключевые слова:** *междисциплинарная полисемия, термины, междисциплинарные термины, полисемантические слова.*

**Rəyçi:** *Filologiya üzrə elmlər doktoru, professor İlham Mikayıl oğlu Tahirov tərəfindən çapa tövsiyə olunmuşdur.*