

SPECIALIZED LANGUAGE – PECULIARITIES, FEATURES AND FUNCTIONS

*Elena Museanu**

Abstract

An abstract science through concepts, hermetic and language needs to be understood by the more or less informed receiver. It is a cognitive process that can only be done interdisciplinary, through strategies of a linguistic and pragmatic nature. It is the assertion from which we start in our research. In our scientific approach we aim to research the relationship between linguistics and terminology, through descriptive-linguistic, cognitive and functional research of language functions – at the level of specialized discourse. The overall objective of the study is to highlight the interdisciplinary character of terminology, as well as the role of linguistics in ensuring coherence, accessibility and relevance of the message. Starting from the specification of language functions in communication – theorized by R. Jakobson – we aim to identify some of the ways to achieve these functions in medical discourse: the informative level is under the referential function, the illustrative level of demonstrations, graphic representations, cumulative constructions, appositives, etc. is under the sign of the phatic function, the use of quotation marks, markings in italics, etc. are located under the sign of the metalinguistic function. There are elements that help adapt information to the receiver's level of understanding – in general. The general conclusion that emerges is that terminology is an innovative science whose didactic strategies are closely related to the functions of language, language sciences, linguistics, logic, etc.

Keywords: *terminology, interdisciplinarity, functions of language, field of knowledge, qualities of language*

JEL Classification: Z10

1. Introduction

Medicine is an abstract science through its concepts and cryptic through its language. Nevertheless, it needs to be understood by the more or less informed recipient. The reception of the message from the written medical text can only be achieved through interdisciplinary means, through linguistic and pragmatic strategies. This is the assertion from which we start in the introduction to our research - given the breadth of the subject. In medical terminology, precision and clarity are paramount due to the potential life-or-death implications of miscommunication. Terminology must accurately convey complex medical concepts to ensure proper diagnosis, treatment, and patient care.

Medical terminology encompasses a wide range of subfields, each with its own specialized vocabulary and terminology. From anatomy and physiology to

* Elena Museanu is at the Romanian American University. E-mail: elena.museanu@rau.ro.

pharmacology and pathology, each area requires unique terminology tailored to its specific context and requirements. Medical terminology evolves continuously to accommodate advances in medical science, technology, and clinical practice. New discoveries, treatments, and diseases necessitate the creation of novel terms and the adaptation of existing terminology to reflect current knowledge and practices.

Effective communication of medical terminology is essential not only for healthcare professionals but also for patients. Clear and accessible language empowers patients to participate in their care decisions, understand medical instructions, and advocate for their health needs.

Terminology serves as a bridge between different disciplines within healthcare, fostering collaboration between clinicians, researchers, educators, and policymakers. Interdisciplinary dialogue facilitates innovation, knowledge exchange, and holistic approaches to healthcare delivery and research.

These additional points underscore the complexity, importance, and dynamic nature of medical terminology in the context of healthcare delivery, education, and research.

2. The referential function and the marks of the objectivity

In medical communication, the referential function plays a dominant role, with the involvement of other functions being secondary. R. Jakobson noted: “The verbal structure of a message depends primarily on the predominant function. However, even if the aim of the referent, the orientation towards the context - in short, the so-called ‘denotative’, ‘cognitive’, referential function - is the dominant task of many messages, the secondary participation of other functions in such messages must be taken into consideration by an attentive linguist.” (R. Jakobson, p.214)

One of the characteristics of the referential function is the *objectivity*, whose features we have identified in medical language as follows:

- *at a conceptual level*: there are no completely complementary premises and interpretations of a subjective nature - this trait is supported lexico-semantically by the use of impersonal verbs (“presents”, “represents”, “installs”, “realizes”), passive voice verbs (“is centered”, “is dependent”, “is visualized”), gerunds, long infinitives, constructions with the verb “to be able to” + short infinitive (“can suggest”, “can be simple”)
- *at a linguistic level*: objectivity is achieved interdisciplinarily through the use of the literary language variant of Romanian; neonymy and lexical neology are indicators of objectivity and standardization - which we consider the key to controlling objectivity. In the lexicon of Pulmonology, for example, over 97% of neonyms are of French origin.

Neutral attitude - connotative meanings are eliminated; conceptual and terminological metaphors in the researched field are predominantly denotative (I. Oliveira, 2009), whether we consider *the scenario of the tree* (branches of the pulmonary artery, the *trunk* of the pulmonary artery, pulmonary artery *branches*, bronchial *bifurcation*, *root* of the aorta, etc.), *the war scenario* (*attack* of phagocytic cells, frequency and severity of *attacks*, *attack cure*), orientation metaphors (the posterior wall of the right bronchus, the left main bronchus), catachretic metaphors from domains of the material world, civilization, and culture (alveolar canal, pleural compartment, thoracic duct, glassy-matte condensation, pyramidal cells, fibrocartilaginous middle tunic, alveolar sacs, pulmonary vessel, rhythm disorders).

Precision and clarity: Each terminological unit corresponds to a single medical concept;

Impersonal style - discourse focuses on processes, phenomena, conceptual material, cause-effect relationships, etc.

Logical coherence - the discourse follows a clear, logical line in presenting concepts;

Uses specialized terms, symbols, figures;

Monosemy. At the syntactic level, *objectivity* in specialized communication is also achieved through the cause-effect relationship; gerundial and infinitival syntactic constructions. These are constructions that contribute to the de-subjectivization of language.

3. Mechanisms of the cognitive interaction in the medical language and the phatic function

We cannot speak in specialized discourse of a *sui generis* phatic function, but rather of a process in which the phatic function holds pragmatic values. It is a process through which conceptual cohesion and the development of informational processes are ensured, through the two components of an utterance - *the theme* and *the rheme*.

In the tradition of studies by Bühler and R. Jakobson, *the phatic function* is linked to communication - as an element of human interaction. It is oriented towards the physical, psychological contact between sender and receiver (through utterances such as: "Can you hear me? Do you understand me?") - with the intention of maintaining communication. In written medical discourse, the phatic function operates at a procedural level. It does not act on human relationships directly but indirectly, through specific pragmatic procedures that engage other mechanisms. The "interaction" between sender and receiver is of a cognitive nature, it is a *purely intellectual* connection, not psycho-active, as happens in the direct interaction between speaker and receiver.

In the example:

“Muscle function is assessed by measuring maximal inspiratory pressure (*PI_{max} = the lowest pressure during a sustained forced inspiration with airway obstruction*) and maximal expiratory pressure (*PE_{max} = the highest pressure developed during a sustained forced expiration with airway obstruction*).”, the mechanisms of cognitive interaction are graphically indicated within parentheses.

The mechanisms of the phatic function exhibit distinct characteristics within medical discourse. In this specialized context, where effective communication is critical for patient care and scientific exchange, the phatic function serves to establish and maintain social bonds, reassure patients, and facilitate smooth interactions between healthcare providers. Through greetings, expressions of empathy, and acknowledgments of understanding, medical professionals create a supportive environment conducive to patient trust and cooperation. Moreover, in academic and professional settings, the phatic function fosters camaraderie among colleagues, enhances teamwork, and encourages open communication, ultimately contributing to the overall effectiveness of medical practice and research.

The mechanisms of the phatic function have specific characteristics in the medical discourse:

- a. The scientific statement does not include words and/or expressions with a phatic function, as they are used in direct communication;
- b. The absence of interrogative style in the medical discourse;
- c. Interaction between the author and an undefined and undifferentiated receiver;
- d. Cognitive interaction focuses on a new, simplified, or explained conceptual equivalent in the rheme if:
 - the antecedent in the theme is a hermetic expression: “...pulmonary lymphangiomyomatosis (LAM)...” - through the use of abbreviations;
 - the antecedent is ambiguous or has polysemantic value: “Pulmonary atelectasis represents consolidation (alveolar opacity)...” - where consolidation is a polysemantic lexical unit;
- e. The author ensures the receiver's good understanding of prominent information by resorting to discourse management techniques. One of these techniques is the explicit reformulation of new scientific content:

“In the case of expiratory flows reported to FVC, predefined values are used, which delimit the normal: FEV1/FVC (bronchial permeability index, BPI)”.
- f. The author's “intervention” in their own discourse is indirect, mediated through written text. It certifies that the recipient remains focused on the prominent information.

- g. The author can update the concept from the antecedent through metaphor, terminological phrase, utterance, scientific definition, etc.

We observe, in the tradition of the Geneva School, that *the structure of medical discourse is hierarchical*. We consider two constituents: the act of language from the antecedent (*theme*) and the author's "intervention" (in the *rheme*); the "intervention" is a linguistic act that maintains the hierarchical denotative, referential relationship with the recipient - with consequences for message reception. It belongs to the same sender and does not have markers of direct interaction, only graphic markers - such as parentheses, braces, separating lines, etc. + new information. It differs from the antecedent by terminological, semantic, and cultural markers. Parentheses are part of a synchronization system between author and recipient, through which the author ensures (Cosnier 1982) the transparency of the message;

"The sputum examination is not suitable for the correct detection of the following pathogens: *Pneumocystis jirovecii*, *Aspergillus spp.*, *Candida albicans* (due to insufficient mobilization of these pathogens from the bronchopulmonary focus), *Legionella spp.* (due to antagonism by oropharyngeal microbiota)." The "intervention" should not be confused with the didactic function or with the metalinguistic function - even though clear differentiations cannot always be made between phatic mechanisms, metalinguistic, and didactic function. It is necessary to determine the contribution of each of these functions.

4. The linguistic characteristics of the mechanisms of the cognitive interaction in the medical discourse

In the realm of medical discourse, the linguistic characteristics of cognitive interaction mechanisms play a pivotal role in facilitating effective communication. One notable feature is the emphasis on precision in terminology, where the use of standardized and accurate language ensures the clear transmission of complex medical concepts. Authors often employ various clarification strategies, such as explicit definitions or examples, to elucidate new or specialized terms for readers, thus promoting comprehension.

A fundamental aspect of the linguistic characteristics of cognitive interaction in medical discourse is the promotion of contextual understanding. By providing clear context and framing information within relevant clinical scenarios, authors facilitate readers' grasp of the significance and implications of the presented material. Furthermore, these mechanisms operate in tandem with other language functions, such as referential and metalinguistic functions, synergistically enhancing the overall effectiveness of medical discourse.

The author's *cognitive intervention* is carried out with the purpose of conceptual interaction with the recipient, as follows:

- At the level of *signification*: The emitter's appeal to the explicitation of a *focused* notion is conducted to ensure the understanding of the new concept.

“It is effective in moderate forms of PAH, chronic treatment with Bosentan (endothelin receptor antagonist), or in combination with prostacyclin derivatives in severe forms of PAH.”

- At the *syntagmatic* level, the equivalent of the information contained in the antecedent occupies the first position in the statement highlighted by the author, enclosed in parentheses.

“Non-digitalis *inotropes* (*dobutamine* or dopamine in acute right ventricular decompensation)” – “*Inotropes*” and “*dobutamine*” are terms formed based on two neonyms - abstract nouns in medical language.

- At the *paradigmatic* level, it can function as a synonym with the neonym from the antecedent.
- At the level of term *form* (the signifier, in the tradition of Ferdinand de Saussure's linguistics), the forms of terms, of phrases, are invariable in terminological inventories, in databases, etc.
- At the *semiotic* level, there is cognitive value (understanding of the context), and at the cognitive level, the author's goal is to maintain communication with the recipient.

There is a simultaneity of language functions in the lexicon of Pulmonology, as can be deduced from the examples above, where the mechanisms of cognitive interaction occur simultaneously with the referential function, with the metalinguistic function, etc.

In summary, the linguistic characteristics of cognitive interaction mechanisms in medical discourse serve to optimize communication between healthcare professionals and readers, ensuring clarity, comprehension, and contextual understanding of complex medical information.

5. The metalinguistic function in the pulmonology discourse

The metalinguistic function plays a crucial role in the discourse of pulmonology, where precise and clear communication is paramount for effective diagnosis, treatment, and research. In this specialized field, metalinguistic functions serve to clarify terminology, correct misunderstandings, and ensure the accuracy of scientific communication.

One prominent aspect of the metalinguistic function in pulmonology discourse is the use of terminology clarification. Given the technical nature of medical terminology, authors often employ various strategies to define and explain specialized terms to ensure that readers, including medical professionals and researchers, grasp their intended meanings accurately. This may involve providing explicit definitions, offering examples, or contextualizing terms within specific clinical scenarios.

Furthermore, the metalinguistic function in pulmonology discourse extends to the correction of errors or misconceptions. Authors may use this function to address common misunderstandings, clarify ambiguous statements, or rectify inaccuracies in previous research or clinical practices. By doing so, they contribute to the ongoing refinement and advancement of medical knowledge within the field.

Additionally, the metalinguistic function facilitates coherence and cohesion in pulmonology discourse by providing summarizations, reiterations, or syntheses of key concepts or findings. This helps readers navigate complex information, reinforce understanding, and recognize the significance of certain findings or conclusions within the broader context of pulmonary medicine.

The metalinguistic function is a language-oriented function that “highlights the code.” At the logical level, specialized literature makes the necessary distinction between object language and metalanguage, the latter being used in the study of object language. For example, in the statement “Un *și* ar fi fost necesar” (“One *and* would have been necessary”), “*and*” is used in the metalanguage, while the other elements of the statement are the “object language”, the tools through which speech about “*and*” is made. These are two languages that often overlap. The doctor speaks in Romanian about concepts expressed in the same language.

The enunciative instances in written medical text are: the author, the recipient, the subject of discourse, the text.

At the functional level of the medical discourse, the argumentative function is oriented towards the purpose of scientific communication.

At the syntactic and semantic level, topicalization is achieved through paradigms comprising impersonal formulations such as adjective + verb “to be”: “*it is important*”, “*it is essential*”, “*underscores*”, “*notes*”, etc.

“Mucormycosis is an aggressive infection, and we consider early diagnosis to be essential for successfully managing the disease” (215),

where the second sentence surpasses the relationship of cognitive equivalence with the first sentence through argumentative and semantic variation. It is a metalinguistic complement.

Researchers in the field (Yujing Ji and Agnès Tutin, 2019) include in the metalinguistic function any form of classification, repair, reformulation, comments on form or meaning, functions of classification, and terminological precision, considering that there are two types of reformulations: paraphrastic reformulation and non-paraphrastic reformulation.

The authors of the Pneumology Treaty use numerous markers of metalinguistic nature to reformulate content. We have focused on three patterns:

a. *Reformulation for clarification*: there is a relationship of conceptual equivalence between the preceding concept and the reformulation:

“Molecules that confer antigenic specificity (respectively individuality) are called *antigenic markers*, and those with the function of ‘information gathering’ are called *receptors*, i.e., membrane structures specialized in receiving information.” - where the sequence i.e., “membrane structures specialized in receiving information” is a reformulation for clarification - in metalanguage, the marker of which is “i.e.”.

Reformulation for clarification also has other markers with metalinguistic value: *in other words, namely, respectively*, etc.

b. *Repair reformulation* aims to correct or cancel the notion from the antecedent through markers with metalinguistic value: “maybe it should have been,” “...it might have been necessary...”. These are formulas through which the author modifies the statement from the previous sentence:

“The patient was positioned upright, but maybe the doctor should have stood behind the patient, with palms symmetrically palpating the thoracic wall, and the patient should repeatedly pronounce ‘33’ (thirty-three).”

In the given example, the pragmatic change through reformulation has surpassed the relationship of equivalence between the first statement and the following ones.

c. *Recapitulative reformulation* has formulations with metalinguistic value: *summarizing, in short, therefore*, etc.

“It is explained, briefly, why maintaining $\text{PaO}_2 > 60$ mmHg is necessary in clinical practice. In summary, pulse oximetry is an easy, non-invasive method of determining hemoglobin saturation, but not very accurate.”

The translation elucidates the intricacies of metalinguistic functions within the context of pulmonology discourse. Through various reformulation strategies, such as clarification, repair, and recapitulation, authors navigate the complexities of scientific communication to ensure clarity and precision. These linguistic maneuvers, marked by specific indicators and formulations, facilitate effective transmission of medical knowledge and maintain the integrity of scientific discourse. The analysis highlights the importance of metalinguistic awareness in medical writing, underscoring its role in conveying complex concepts accurately and comprehensively to diverse audiences.

6. Conclusion

The general conclusion drawn is that terminology is an innovative science whose strategies are closely linked to the functions of language, language sciences, linguistics, logic, etc. The role of linguistics is to ensure the coherence, accessibility, and relevance of the message. The ways of achieving these functions in medical discourse: the informative level falls under the scope of the referential function, the illustrative level of demonstrations, of new

information marked by parentheses, braces, etc. falls under the sign of the phatic function, the use of jargon, markers in italics, etc. are situated under the sign of the metalinguistic function. These are elements that help adapt the information to the understanding level of the receiver, conferring interdisciplinary value to terminology.

Terminology plays a crucial role in standardizing communication within specific fields such as medicine, technology, or law. Standardized terminology ensures consistency and clarity in communication, reducing the risk of misunderstanding or misinterpretation.

Terminology is not static; it evolves over time to reflect advancements in knowledge, changes in technology, and shifts in societal norms. This evolution requires constant updating and adaptation to ensure relevance and accuracy. Effective terminology facilitates communication across different disciplines and professions. It allows experts from various fields to collaborate, exchange ideas, and solve complex problems by providing a common language and framework for discussion.

Terminology often becomes more specialized as fields of study become more nuanced and complex. Specialized terminology enables experts to communicate precisely and efficiently within their domain while also serving as a barrier to entry for outsiders.

While specialized terminology is essential for experts, it can pose challenges for non-specialists or those new to a field. Efforts to make terminology more accessible, such as glossaries, explanatory notes, or simplified language, can enhance understanding and promote inclusivity.

In an increasingly globalized world, terminology also plays a role in facilitating communication across linguistic and cultural boundaries. Standardized terminology allows for effective communication between speakers of different languages, promoting collaboration and knowledge sharing on a global scale.

These additional points highlight the multifaceted nature of terminology and its importance in various aspects of communication and knowledge dissemination.

References

1. Avram, Mioara, 1997. *Anglicismele în limba română actuală*, Editura Academiei Române, București.
2. Bidu-Vrănceanu, Angela, 2007. *Lexicul specializat în mișcare*, București, Editura Universității din București.
3. Bidu-Vrănceanu, Angela, coord., 2010. *Terminologii I*, București, Editura Universității din București.

4. Cabré, M. Teresa (1998): Terminology: Theory, methods and applications, Philadelphia PA, John Benjamins.
5. Contente, Madalena, 2006, „Termes et textes: la construction du sens dans la terminologie médicale”, în Mots, termes..., pp .453–467.
6. Bidu-Vrănceanu, A., 2000: Angela Bidu-Vrănceanu, *Lexic comun, lexic specializat*, Universitatea din București, București, 2000.
7. Cabré, M. T., 1999: Maria Teresa Cabré, *Terminology. Theory, methods and applications*, Amsterdam/Philadepphia, John Benjamins Publishing Company.
8. Coșeriu, E., 1999: Eugenio Coșeriu, *Introducere în lingvistică*, Traducere de Elena Ardeleanu și Eugeniu Bojoga, Cuvânt înainte de Mircea Borcilă, ediția a II-a, Cluj, Editura Echinox, 1999, p. 25.
9. Jakobson, R., 2003: Roman Jakobson, *Essais de linguistique general. Les fondations dulangage*, Les Éditions de Minuit, 2003
10. Oliveira I., *Métaphore terminologique et stratégie pédagogique*, în „Analele Universității din București. Limba și literatura română”, LVII, Editura Universității din București, București, 2008.
11. Rastier F., 1995: François Rastier *Le terme: entre ontologie et linguistique*, „Le banque des mots”, nr. 7, 1995, pp. 36-65.
12. Vintilă-Rădulescu, I, 1999: Vintilă-Rădulescu Ioana, *Terminologia și problemele ei actuale*, București, Editura Academiei Române.