

SPECIAL ASPECTS OF SCIENTIFIC TERMS

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Abstract: The terminologically oriented study deals with special aspects of scientific terms. It shows that these aspects significantly complement the essential features of scientific terms, and, in some cases, are overlapping them. Also, some special aspects are partially overlapping. It describes the time aspect, historical aspect, linguistic aspect, which includes formal aspect, spelling aspect, pronunciation aspect, cultural aspect, etymological aspect (which partially includes intercultural aspect), homonymity aspect, synonymity aspect, aspect of interdisciplinarity, educational aspect and aspect of terminological discipline. Knowledge of these aspects is an important part of terminological competence and terminological culture.

Keywords: scientific terminology, properties of terms, special aspects of terms, terminological literacy, terminological culture, teaching terminology

1 Introduction

Terms are key elements of scientific and professional communication. Despite the fact that in the written communication in many areas are increasingly also used non-verbal equivalents of terms, terms that is words and phrases with specific relevance continue to have a major role.

Terms have generally a set of fundamental properties, which are presented in most of monographs about general terminology, e.g. (1). The unequivocalness is presented as a most important property. This property ensures only one term for a concept (notion) and the correct identification of the concept without a context. In the set of another important properties are included transparency (semantic clarity, proper motivation), systemicity (we consider it as the most important in modern terminology), exactness, shortness, derivationality, good translatability into another languages, internationality, and others. We have included in the set a new property – acquireness, which is very important in education (2, 3).

As a model idea, we introduced the concept of an ideal term. Ideal term is defined as a term that has all the relevant properties. In fact, it has no real term all the properties of an ideal term. The reasons for this are several. Firstly, it is because most of the current terms originated before the emergence of terminology science. Secondly, it is because some of the properties are contradictory in nature, e.g. exactness versus shortness, semantic clarity versus internationality, internationality versus acquireness.

Every professional has to reliably acquire a series of terms if his professional field. Most of the terms everyone has acquired already during the training at the respective vocational school. In each area, however, constantly increases the number of new concepts and consequently also new terms. In the context of lifelong learning, each expert has to permanently educate also in terminology in his/her field. This means that he/she must not only gain but also maintain the necessary level of terminology literacy (4). Moreover he/she must achieve the required level of terminological and communication culture. Achieving this goal can significantly help understanding of specific aspects of the terms. The aim of our study is to elucidate and characterize these special aspects.

2 Special aspects of terms

Terms have many special aspects. Knowledge of these aspects facilitates ownership and better understanding of concepts named by relevant terms.

In the first place, we state the **time aspect**. This aspect includes three subaspects: aspect of novelty, aspect of obsolescence and historical aspect.

1. **Aspect of novelty** have **neologism terms**. To this group we include terms that are the names most recently created concepts. Always elapses considerable period of time, since their creation to their adoption in the concerned communities. During this period, users have trouble mastering the content of the relevant new concepts, but also with the spelling and pronunciation of the new terms. Partial information, users can find during this period in the glossaries of new terms, which are published in several periodicals, as well as in the latest editions of dictionaries of foreign words. There are also special dictionaries of neologisms, for example (5), (6). It should be emphasized that the nature of neologisms have new terms only temporarily. In more detail neologisms are presented in the study (7).

2. **Aspect of obsolescence** have many **outdated terms**. This group includes terms that are commonly used in the past, but later were for various reasons excluded from term systems and therefore should be no longer used in a professional communication used at present. Such terms are often used by users who do not monitor the development of the terminology of their field. A typical example is the use of the term table salt instead of the system term sodium chloride. While sodium chloride is pure NaCl, table salt is a mixture of NaCl and different ingredients, for example iodine, fluorine, and others. It is thus the naming of different concepts and can not be considered as equivalent. Thus table salt and sodium chloride are names of two different concepts and should not be regarded as equivalent.

3. **Historical aspect** have terms from the distant past. This group includes terms which are the names of concepts used in the past whose content has not changed until now, but they are already not in use generally. Examples include e.g. names of various historical weapons or instruments, which can be seen now only in museums.

As the second most important aspect we can quote the **linguistic aspect**. This aspect includes several other aspects, particularly formal aspect, cultural aspect, etymological aspect, synonymity aspect and homonymity aspect. These aspects are closely related to language culture of communication (8).

1. **Formal aspect**. This aspect requires, as the terms are used only standard neutral words. These words must be placed in the correct orthographic form (**spelling aspect**) and must also be properly pronounced (**pronunciation aspect**). This is particularly important in the case of foreign words, words of foreign origin and names of persons, which are elements of many terms. With pronunciation aspect deals in more detail the study (9).

2. **Cultural aspect**. This aspect excludes use of substandard words (slang words, jargon words, professionalisms, etc.) in professional communication. As terms are also excluded emotionally coloured words (e.g. pejorative words), dialect and colloquial words. In a limited way, however, are permissible neutral diminutives (2, p. 93).

3. **Etymological aspect**. Knowledge of the origin of the words allows users to understand important intercultural context. In many cases it contributes to the semantic clarity of terms. Often contributes also to a better remembering of terms or explains their motivation. This is illustrated by the example of the element ruthenium. This term is for many users semantically non-transparent compared with the terms of type americium,

germanium, francium, etc. This is because the majority of current users do not speak Latin. However, if they are informed that this term comes from Ruthenia, the Latin name of Russia, they not only better memorize this term, but they also correctly classify it in the indicated group of chemical elements named in honour of a particular country. With etymological aspect deals in more detail the study (10).

4. **Synonymity aspect.** This aspect refers to the existence of equivalent names of the same concept – synonymous terms. Their existence is contrary to the principle of “one concept – one term”. Synonymous terms slow down the flow of information and reduce the effectiveness of information retrieval, including search by using modern electronic search facilities. A regular user barely knows all synonymous terms of a concept, especially if their number is ten or more. At present, it would be optimal if the professional communities reduce the number of synonymous terms to only one. It would be optimal if each concept had only one national term and one international synonymous term.

5. **Homonymity aspect.** The terms covered by this aspect are the same namings for different concepts. Their existence is contrary to the principle of unequivocalness of terms. Therefore they should be consequently removed from all term systems. This aspect also applies to half-terms like video and audio.

Many science branches have an interdisciplinary nature. For such disciplines is very important **aspect of interdisciplinarity**. The aspect is relevant for concepts and terms which are common for more than one scientific branch. It is important to avoid terminological collisions when the same terms belong to different concepts in particular branches. It is also irrational to introduce another term for the same common concept for which already exists and is used a term in a related discipline.

Very important for acquiring of terms is **educational aspect**. Generally are better acquired national transparent (opaque) terms, systemic terms, short terms, transparent terms with proper motivation, and terms being adopted simultaneously during acquiring definitions of the relevant concepts. On the contrary, the non-transparent terms, unsystematic terms, foreign terms, multi-word terms and terms being adopted without the simultaneous acquiring definitions of the relevant concepts are difficult-to-learn.

Using of the correct terminology in education is a mandatory requirement. It can only meet the terminology an erudite teacher who has reached the necessary level of competence terminology and culture. The content of the concepts was presented in the study (11). Acquiring of a term in education is optimal if, when an educate simultaneously acquires the content of the concept. Content of the concept expresses its definition. While the choice of the term an educator must observe terminological discipline in the selection of the definition he/she has much room for creativity. The definition must be didactically transformed, that is, adjusted for age and mental level of educate and his/her previous education. In it should only be used concepts and terms that have the educate already acquired. The teacher must also respect didactic principles from simple to complex and from the known to the unknown.

Terminologically few erudite educator causes that educates acquire incorrect terms. It should be noted that **each educator error is multiplied by the number of his educates**.

From a communication point of view is also important **aspect of the terminological discipline**. Contrary to this aspect is acting the user who:

- Uses a non-standard term if there is a standardized term in the national or international standards;

- If the term is not standardized uses a different term than other professional community;
- Arbitrarily changes the order of the elements in a multi-word term;
- Arbitrarily changes any element of a multi-word term;
- Uses one of the nonverbal equivalents of the term (e.g.symbol) without appropriate explanation;
- Instead the term uses one of the many descriptive definitions of the concept;
- If there are equivalent synonymous terms does not quote all of them after the first use of the synonymous term preferred by him;
- When placing foreign language equivalents of a national term arbitrarily changes their form in original language;
- In the case of homonymous term does not explain to which concept it relates.

Currently deepening international cooperation and mobility greatly applies intercultural aspect. Into global fund of terms have contributed and currently contribute various national, regional, eventually other communities and even many individuals. Many terms are used worldwide and it significantly facilitates professional communication. Some terms bear the names of famous authors or places where has been created new knowledge or technical objects. Although most terms still has a national character, the content of notions named by them is common to all humanity. Terminology can therefore also contribute to the improvement of multicultural education (12).

3 Recommendations and conclusion

Special aspects greatly add to the basic characteristics of a relevant term. They can even decide on the appropriateness or suitability for use of the term in a particular case. Therefore they should not escape the attention of users and teachers terminology. They are especially important in education, in facilitating the acquiring of concepts and terms.

References

- [1] HORECKÝ, J.: *Základy slovenskej terminológie*. Bratislava : Vydavateľstvo Slovenskej akadémie vied, 1956. 147 p. ISBN nemá
- [2] STOFFA, J.: *Terminológia v technickej výchove* [Terminology in technology education]. 2nd revised and enlarged ed. Olomouc : Palackého univerzita, 2002. 162 p. ISBN 80-244-0139-8
- [3] STOFFA, J.: Osvojiteľnosť termínu [Acquireness of a term]. In: *XVIII. Mezinárodní kolokvium o řízení osvojovacího procesu : Sborník příspěvků II*. Vyškov : Vysoká vojenská škola pozemního vojska ve Vyškově, 2000, p. 307-310. ISBN 80-7231-059-3
- [4] STOFFA, J.: Terminologická gramotnost' a terminologická kultura [Terminological literacy and terminological culture]. In: *Terminologické fórum II : na tému socioterminológia, textová a prekladová terminológia*. Ed. I. Cibiková. 1st. ed. Trenčín : Trenčianska univerzita A. Dubčeka, 2009. [Article on CD-ROM] ISBN 978-80-8075-375-7
- [5] MARTINCOVÁ, O. et al.: *Nová slova v češtině* [New words in Czech language]. 1. ed. Praha : Academia, 1998. 357 p. ISBN 80-200-0640-0
- [6] MARTINCOVÁ, O. et al.: *Nová slova v češtině : slovník neologizmů 2* [New words in Czech language : dictionary of neologisms]. 1. ed. Praha : Academia, 2004. 568 p. ISBN 80-200-1168-4

- [7] STOFFA, J. – KROBOTOVÁ, M.: Problematika neologismů v technické terminologii [Problems of neologisms in terminology of technology]. In: *Modernizace výuky v technicky orientovaných oborech a předmětech*. Ed. M. Chráska jun. 1st. ed. Olomouc : Votobia, 2002, p. 73-76. ISBN 80-7198-531-7
- [8] STOFFA, J. – STOFFA, V.: Terminology and Language Culture in Modern Communication Technologies. In: *Technology for mobile society*. Ed. M. Muraskiewicz. Warsaw : MOST Press, 2003, p. 446-451. ISBN 83-87091-42-1
- [9] STOFFA, J. – KROBOTOVÁ, M.: Výslovnostný aspekt vo vedeckotechnickej terminológii [The pronunciation aspect in scientific and professional terminology]. In: *XV. DIDMATTECH 2002*. 1st ed. Nitra : Pedagogická fakulta UKF, 2003, p. 416-419. ISBN 80-8050-659-0
- [10] STOFFA, J. – KROBOTOVÁ, M.: Etymologický aspekt termínů v technické terminologii [Etymological aspect of terms in technology terminology]. In: *Modernizace výuky v technicky orientovaných oborech a předmětech : Sborník I*. Ed. J. Stoffa, M. Chráska ml., V. Stoffová and P. Cyrus. 1st ed. Olomouc : Vydavatelství Univerzity Palackého v Olomouci, 1999, p. 106-110. ISBN 80-244-0051-0
- [11] STOFFA, J. – STOFFOVÁ, V.: Teacher's terminological competence. In: *Edukacja wczoraj – dziś – jutro Edukacja w dialogu pokoleń budowaniu lepszej przyszłości*. Red. E. Salata – M. Mazur and J. Bojanowicz. 1st ed. Radom : Radomskie Towarzystwo Naukowe, 2015, p. 457-464. ISBN 978-83-88100-38-3
- [12] STOFFA, J.: Terminology as a mean of intercultural exchange. In: *Teoretyczne i praktyczne problemy edukacji technicznej i informatycznej*. Red. W. Furmanek and W. Walat. Rzeszów : Zakład Dydaktyki Techniki i Informatyki, Uniwersytet Rzeszowski, 2003, p.139-142. ISBN 83-88845-35-7

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