

Project for an Innovative Textbook of Greek and Latin Medical Terminology in Programmes of General Medicine

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Abstrakt: Příspěvek představuje zamýšlenou podobu učebního textu, jehož hlavní ambicí je žádoucí modernizace výuky řecko-latinské lékařské terminologie. Tato modernizace je založena především na opuštění tradičního gramaticky orientovaného schématu výuky a na snaze o její přiblížení reálným potřebám studentů medicíny. Klíčovým požadavkem je vyvážení formální jazykové stránky a medicínského obsahu. Důležitá je též reflexe reálné podoby lékařské terminologie, v níž se v současné době ve velké míře objevují vedle tvarů v čistých řecko-latinských formách i tvary adaptované pro národní jazyky či výrazy jiného než řeckého nebo latinského původu. Pro učebnici je navržena tripartitní struktura. První část se bude omezovat na anatomické lexikum a na anatomicky relevantní jmenné tvary. Druhá část se zaměří na slovo tvorbu klinických a patologických termínů. Bude věcně členěna podle jednotlivých tělních systémů. Ve třetí části dojde k integraci anatomické a klinicko-patologické slovní zásoby, která bude sledována v kontextu souvislejších syntagmat, zejm. diagnóz. V této fázi budou paradigmata latinských deklinací přirozeně doplněna o předložkové pády.

Abstract: The article outlines a future textbook which is designed with the aim of modernizing Greek and Latin medical terminology instruction. This innovation is based primarily on the rejection of the traditional grammar-oriented approach. The key goals are to balance the language form of a medical term with its medical content, and to reflect the real state of how the medical terminology is used in practice. The textbook will be designed according to a tripartite structure.

Key words: medical terminology, Latin, innovations, instructional design, textbook

Objectives

The main objective of this article is to outline a future textbook of Greek and Latin medical terminology and, in general, to design an innovative instructional programme of medical terminology applicable to Czech and Slovak medical schools. At the very beginning we should ask two important questions: Why are we convinced that an innovative textbook is needed and why should the instructional system be redesigned? In other words: What shortcomings or problems in present-day teaching can be identified as the most serious?

History

In order to answer these questions we must go back to the 1950s, when medical terminology became an independent subject at faculties of medicine in the former Czechoslovakia. Before the 1950s there was no need for instruction be-

cause students entering the faculty had sufficient language skills in Latin as well as ancient Greek, which they had acquired at grammar schools (*gymnasiums*), so that they were easily able to understand medical terminology. However, in the mid-twentieth century two school reforms in 1948 and 1953 led to serious problems.¹ These reforms almost completely interrupted the tradition of teaching the classical languages. As a result, students with minimal or no language skills began to apply for the study, causing considerable shock to teachers who were used to students who were able to read the classics.² Due to this situation special courses of medical terminology were instituted (e.g. in Prague the first course started in 1960).

The leading authority in forming the content of the new medical terminology courses was professor *Jan Kábrt* (1910–2006)³, the head of the recently established department of languages at the faculty of general medicine in Prague and the author of the oldest medical terminology textbooks in the Czech environment.⁴ As a former teacher of Latin at grammar school⁵ he was not able to distinguish between the specific instructional objectives of Latin as a classical language, and Latin as a language for specific purposes. Furthermore, another important distinction escaped him as well, namely the one between *Latin language* and *medical terminology*. He did not perceive medical terminology as a multilingual complex, in which Latin and Greek play an important, but not unique role, and where Latin and Greek appear only in a limited number of grammatical forms. In Kábrt's view the medical terminology became a substitution of the Latin taught at grammar school rather than as a medical subject with specific objectives. His influence led to what we would call the *grammatical model* of medical terminology teaching, which is typical especially for Czech and Slovak faculties of medicine.

The grammatical model

Let us start with a brief explanation. What is the *grammatical model* and its shortcomings? In our opinion, the most serious problem is the distribution of the content area in a strictly grammatical way dictated by Latin nominal declensions.⁶ In this manner the grammatical approach results in factually incoherent vocabulary

¹ See Beran (2011a: 27–28).

² See Žlábek, & Mazanec (1954: 333–336), Fried (1955: 208–210), Doskočil (1956: 138–142).

³ He was in charge between 1966 and 1984.

⁴ The oldest Czech textbooks are Kábrt (1954), Kábrt, Valach, & Šembera (1958), Kábrt, Valach (1960).

⁵ For Kábrt's curriculum vitae, see Tmej (1985: 896), Bejlovec (1990: 1280).

⁶ It should be stressed that while inflexion of verbs is almost completely omitted, the nominal inflexion is taught almost in full, i.e. nouns and adjectives in all cases except dative and vocative.

without any inner logical or semantic relations.⁷ Consequently, the aspect of frequency and real usability is almost completely neglected.⁸ A lot of expressions or grammatical forms are presented only as a demonstration of a particular grammatical paradigm without practical application.⁹

The second issue, which is related to the first one, can be called the *semantization problem*. It stems from the preference of formal language forms over the factual content of medical terms. In the grammatical model the students are faced with a large amount of grammatical forms which are continuously transformed into various cases. As a result, the students tend to focus on empty grammatical forms without understanding the real significance of a term. At this point it is necessary to underline that the traditional method of semantization, namely translation, seems to be insufficient as there often is not an apt Czech or Slovak equivalent with a medical term based on Latin or Greek. So, in many cases, a descriptive explication (periphrasis) of the term or some other form of semantization¹⁰ is needed, rather than a purely literal translation. We should also add that there are two more factors obstructing the perfect semantization of medical terms. The first is the aforementioned incoherent vocabulary which prevents making logical associations between single words. The second is the fact that students (being in the first year of study) are usually unable to supply the meaning of a term on the basis of knowledge acquired in other medical courses.

The third serious shortcoming of the grammatically oriented approach is its inability to reflect real-life use. The medical terminology is traditionally presented as if it were pure Latin, without accepting its real state of usage by doctors of medicine. In order to understand the sharp discrepancy between school and real medical terminology we must briefly describe the state of professional language used in the present-day medical environment in the Czech Republic and Slovakia.

Firstly, we must repeat that medical terminology is a multilingual complex comprising not only Latin and Greek words, but many terms from other languages as well.¹¹ Furthermore, with regard to Latin and Greek vocabulary, it should be said that the professional language prefers the use of forms orthographically and morphologically adapted to the national language. For instance, alongside the orig-

⁷ For instance, in Kábrt's textbook from 1972 within the first declension various expressions of various medical specialties are put together, like *aqua*, *arteria*, *fractura*, *hernia*, *charta*, *insufficiencia*, *lagoena*, *massa*, *scatula*, *tabula*, *vertebra*. See Kábrt (1972: 33–35).

⁸ Cf. Artimová, Pořízková, & Svanda (2013).

⁹ In Czech textbooks we can find entirely useless expressions like *alimentum putre* (Svobodová, 2002: 114) *pars interior* (Vejražka, & Svobodová, 2002: 173) or senseless exercises on plural forms of *colon descendens* or *penis* (Vejražka, & Svobodová, 2002: 152, 141).

¹⁰ We suggest contextualization or visualization. See below.

¹¹ E.g. *cerclage*, *bandage* (French), *by-pass*, *catgut* (English), *alcohol* (Arabic).

inal form *encephalopathia*, which is presented in textbooks, in practice we often find the form *encefalopatie*, used and inflected as a Czech word.¹² Another typical feature is the presence of many Czech words taken from the common vocabulary, which are used as medical terms as well and we find them mixed with other words of Latin or Greek origin.¹³ Finally, medical terminology contains a large number of eponyms¹⁴, acronyms¹⁵ and abbreviations¹⁶ from various language origins.

Now let us resume our description of the grammatically oriented approach. The last problem that we face is an imperfect synchronization between the instruction of both medical terminology and anatomy. The students in anatomical courses face, from the very beginning, a large amount of grammatical forms of Latin nouns. But they are not able to comprehend the various grammatical forms of an anatomical term and its structure as they don't yet have sufficient grammatical skills. Courses of medical terminology focusing on teaching complete paradigms are slow in providing a useful "grammatical service" at the right time. As a result, students have to mechanically memorize the single anatomical terms without comprehending its place in the grammatical system. This approach reinforces the emphasis on mindless memorization. The students are often reluctant to retroactively apply the skills gained later in terminology courses to the anatomical knowledge they have already acquired. Unsurprisingly, they often consider terminological courses to be pointless.

Modernization

With respect to the aforementioned issues, we find it necessary to create a new textbook and to implement innovations in order to teach medical terminology in a truly modern and efficient way. This modernization should be based on the rejection of the traditional grammar-oriented approach, which should be replaced with practice-oriented instruction. There are two key demands we should focus on: (i) *the balance of the grammatical form, and its content* and (ii) *the reflection of*

¹² Cf. Marečková, Šimon, & Červený (2002: 583–584).

¹³ A model diagnosis might be for example: *schůdkovitá deformita na oscuboideum* (meaning: *stairstep deformity in cuboid*).

¹⁴ E.g. *morbus Crohn*.

¹⁵ E.g. *AIDS = Acquired Immune Deficiency Syndrome*.

¹⁶ Concerning the abbreviations we notice an interesting process in which abbreviations, having lost language content, become mere symbols. As in the case of many abbreviations we are not able to identify which language is actually abbreviated. A good example might be the abbreviation *TURP*, which can reflect almost any language we want: *Resectio transurethralis prostatae* (Latin), *Transurethral resection of the prostate* (English), *Résection transurétrale de la prostate* (French), *transurethrale Resektion der Prostata* (German), *transuretrální resekce prostaty* (Czech).

the actual state of medical terminology as a multilingual complex. Consequently, we suggest the following improvements:

1. The compilation of vocabulary in an empirical way according to frequency of usage.
2. The adoption of a new structure of the instructional content with respect to not only formal grammatical but also *factual* content.
3. The use of contextualization and visualization as a means of thorough semantization of the vocabulary.

The practical application of contextualization and visualization should be based on several points. First, we suggest presenting the vocabulary in a broad context of authentic medical texts (e.g. medical reports, prescriptions, professional medical texts), not as a list of isolated terms. In this way the students would naturally internalize the vocabulary by making logical and semantic associations. In other words, one medical term can shed light on another, if there is an appropriate connection. Second, depending on the specific collocation given by authentic texts, students should encounter medical terms in forms which would be either original Latin or a Latin word adapted to the national language, as we have already mentioned. The goal of this contextual approach should be both to enhance the desirable interdisciplinary relationships between various medical courses and to help the students to perceive the nature of professional medical language as a whole. Concerning visualization, the use of high-resolution photographs or well-defined illustrations attached to the texts would give the students a necessary visual dimension, since a picture is often worth a thousand words.

There are two more important questions related to vocabulary. Is there a possibility to effectively use the natural relationship between Greco-Latin terminology and professional English?¹⁷ Does it give us an opportunity to cooperate in teaching both? In order to answer these questions, we must affirm that there is absolutely no reason to teach medical terminology and professional medical English separately, as happens at Czech medical faculties. The relations between these subjects are just too strong to be ignored. In this sense, we can envisage at least two models of how to carry out the cooperation:

1. Medical terminology would be a preparatory course giving students basic vocabulary in both Latin and English. The subsequent or simultaneous profes-

¹⁷ There is no doubt as to the importance of English courses within the medical curriculum and their important role (as a *lingua franca*) in international professional communication. Note the English term is usually only an adaptation of Greek and Latin word to English. Cf. Marečková, Šimon, & Červený (2002: 582).

sional English course would develop the acquired knowledge and focus on improving receptive and productive language skills.¹⁸

2. Alternatively, we could also integrate the Medical terminology and professional English into one module, which we could call *Professional medical language*.

Regardless of which model we prefer, we believe that a certain degree of coordination and integration would be useful for reinforcing the importance of teaching languages within the medical curriculum and could be a significant motivating factor for the students, with the fact that each piece of information is applicable to various courses.

Textbook structure

In the last part of the article we would like to present the structure of the textbook we have started working on. We suggest dividing the textbook into three main parts:

1. The first will be limited to anatomical vocabulary and anatomically relevant nominal grammatical forms (i.e. nominative and genitive singular and plural). This should give the students an opportunity to acquire the necessary language skills in order to understand the system of anatomical terminology as soon as possible.¹⁹
2. The second part, dealing with components and word-building, will be subdivided according to body systems.²⁰ Consisting of ten chapters,²¹ the students will encounter the most important clinical and pathological terms used in practice. As regards the content and the structure of each of the chapters, we suggest the following order: an anatomical description of the respective system, its diseases and conditions, and finally the surgical interventions and therapeutic procedures relevant to the given context.

¹⁸ For instance, within the terms related to digestive system, students in medical terminology course will deal simultaneously with Latin and English expressions: *intestinum tenue* – *small intestine*; *colon ascendens* – *ascending colon*; *corpus pancreatis* – *body of pancreas*; *cholecystitis* – *cholecystitis*; *hepatomegalia* – *hepatomegaly* etc. Next in professional English course, the professional text on the digestive system will be read and interpreted or students will write a paper on this topic.

¹⁹ Our pilot tests have shown that eight lessons (90 minutes each) seem to be sufficient for acquiring the basic language skills for anatomy.

²⁰ The division into body systems is typical mainly for English textbooks. We have, however, also noticed this tendency in other languages, like German or Bulgarian. See e.g. Karenberg (2011), Nikolova, & Koleva (2004).

²¹ For the time being, we suggest the following list of topics: (1) *Introduction to word-building of medical terms*, (2) *The body as whole and its parts*, (3) *Skeletal and muscular system*, (4) *The integumentary system*, (5) *The blood and cardiovascular and lymphatic system*, (6) *The digestive system*, (7) *The respiratory system*, (8) *The urinary system*, (9) *The reproductive system*, (10) *The nervous system and sense organs*, (11) *The endocrine system*. These chapters should be covered in ten lessons (90 minutes each).

3. The third part will integrate elements from the previous parts. Both the Latin based anatomical and the Greek based clinical vocabulary²² will be studied as they are used in modern medical diagnoses. For a full understanding of all constructions relevant for present-day Czech physicians it would also be necessary to include the prepositional cases (i.e. accusative and ablative). It is worth noting that at the moment it is impossible to skip the accusative and ablative²³ because prepositions are regularly required in Czech medical practice.²⁴ The brief introduction to prescription and pharmacological terminology would be attached as an appendix to the textbook.

Conclusion

To conclude, let us once more emphasize our conviction that innovations in medical terminology courses are necessary. A thorough revision of present-day teaching seems to be a *conditio sine qua non* for the survival of our courses within the medical curriculum. We believe *the grammatical model* is unsustainable for the future in particular because of two reasons: (i) it does not correspond to the practical needs of medical students and physicians, as demonstrated at the beginning of the article, and (ii) it starkly contrasts with the demands of pragmatically-oriented students of medicine.²⁵

We would also like to stress that there are certainly many possible ways to improve the teaching of medical terminology. Possible innovations may depend on various objectives leading to various respective contents.²⁶ Therefore, we do not want to claim that our design is the only approach viable for the future. We believe, however, that by presenting this proposal we can at least contribute to a discussion on how to teach medical terminology more effectively.

²² The clinical term consists of predominantly Greek word-components.

²³ As we find it at German faculties of medicine where only the nominative and genitive are taught. See e.g. Caspar (2007).

²⁴ Let us examine an authentic Czech surgical diagnosis, recently taken at the hospital, to demonstrate its complexity: *St. p. osteosynthesim fracturae partis distalis radii l. dx.* (=The state after an osteosynthesis of a fracture of a distal end of a right radius). Here we can see the following: (1) two anatomical expressions, both in genitive (*pars distalis*, gen. *partis distalis*; *radius*, gen. *radii*); (2) two Latin abbreviations (*St. p.* = *status post*; *l. dx.* = *lateris dextri* – gen. of *latus dextrum* /the right side/); (3) two clinical expressions, one of them in pure Latin, other one the compound based on Greek components (*fractura*, gen. *fracturae*; *osteosynthesis*: *oste*-/bone/, *syn*- /together/, *thesis* /from Greek verb *tithenai* /to put/); (4) one prepositional construction using an accusative (*post osteosynthesim*).

²⁵ On this issue, see Beran (2011b: 55–67).

²⁶ For example, we are able to imagine an instruction focusing on ethics, cultural history, history of medicine etc. See Beran (2015: 84–91).

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Bionote

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