

Finnish–Russian Thematic Dictionary for Healthcare Interpreters: The Principles and Challenges of Compilation

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ABSTRACT

Increasing internationalisation has resulted in a growing need for community interpreting worldwide. Healthcare is one of the most challenging domains for community interpreters, as misunderstandings, especially those caused by the use of incorrect terminology, may at worst cost lives. In this paper, we describe the process of compiling the *Finnish–Russian Thematic Dictionary for Healthcare Interpreters*. We start by describing the theoretical background of dictionary planning and analysing the information needs of the target groups. We then justify the selection of dictionary sources, describe the mega-, macro-, and microstructure of the dictionary, and briefly report the details of the technical implementation of the project. Finally, we reflect on some challenges encountered in this project as well as its future prospects.

KEYWORDS: medical dictionary, medical glossary, doctor–patient communication, community interpreting, healthcare interpreting

ANOTACIJA

Augantis tarptautiškumas lemia vis didėjantį bendruomeninio vertimo (angl. *community interpreting*) poreikį visame pasaulyje. Sveikatos priežiūra yra viena iš sudėtingiausių sričių bendruomeniniams vertėjams, nes nesusipratimai, ypač tie, kurie kyla dėl netinkamo terminų vartojimo, blogiausiu atveju gali kainuoti gyvybes. Šiame straipsnyje aprašomas *Teminio suomių–rusų kalbų žodyno sveikatos priežiūros srities vertėjams žodžiu* sudarymo procesas. Straipsnis pradedamas teorinių žodyno planavimo žinių ir tikslinių grupių informacijos poreikių aprašymu. Tuomet pagrindžiamas žodyno šaltinių pasirinkimas, aprašoma žodyno

mega-, makro- ir mikrostruktūra ir trumpai nurodomos techninio projekto įgyvendinimo detalės. Pabaigoje aptariami kai kurie projekte kilę iššūkiai ir jo ateities perspektyvos.

ESMINIAI ŽODŽIAI: medicinos žodynas, medicinos žodynelis, gydytojo-paciento komunikacija, bendruomeninis vertimas, vertimas sveikatos priežiūros srityje

1. INTRODUCTION

Increasing internationalisation has resulted in a constantly growing need for community interpreting worldwide (cf. de Pedro Ricoy 2009: 1). In Finland, like in many other European countries, representatives of language minorities in many cases (specified by national legislation and organisation-specific instructions) have the right to communicate with officials and public service providers in their native language, which in practice means that a community interpreter is invited to the meeting.

The quality of community interpreting has lately become a hot topic in interpreting studies (e.g. Hale 2007; Valero-Garcés 2008; Flores et al. 2012; Maley 2018). Using the correct terminology is a key factor in quality interpreting. Healthcare is one of the most critical domains in this respect, as misunderstandings, especially those caused by the use of incorrect terminology, may result in inappropriate treatment and at worst cost lives.

In Finland, the training of community interpreters has been systematically developed (Mäntynen 2013). However, there is still a lot of variation in interpreters' competence levels (Ollila 2017: 28), which is also the case in many other countries (e.g. Roat, Crezee 2015). The project “Developing Healthcare Interpreting Training” (2019–2020) aimed at improving the university-level training of community interpreters working in the healthcare sector in Finland. One of the major goals of the project was the compilation of the *Finnish-Russian Thematic Dictionary for Healthcare Interpreters* (Semenova, Kudashev, forthcoming). One of the reasons for choosing Russian as the target language was the fact that it is the most requested language in community interpreting in Finland (cf. Koskinen, Vuori, Leminen 2018: 9). According to Statistics Finland, immigrants from Russia and the former Soviet Union are the biggest foreign language minority group in Finland¹. In 2018, there were over 85 000 of them, and the number was still growing².

¹ http://www.stat.fi/til/vaerak/2019/02/vaerak_2019_02_2020-05-29_tie_001_fi.html

² https://www.stat.fi/til/vaerak/2018/02/vaerak_2018_02_2019-06-19_tie_001_fi.html

In this paper, we describe the process of planning and compiling the dictionary; present its mega-, macro-, and microstructure; report on the technical implementation; and reflect on some of the challenges encountered in this project and the dictionary's future prospects. We hope this information might be useful for compilers of similar dictionaries with other language pairs as well as for trainers of community interpreters.

2. FACTORS AFFECTING DICTIONARY PLANNING

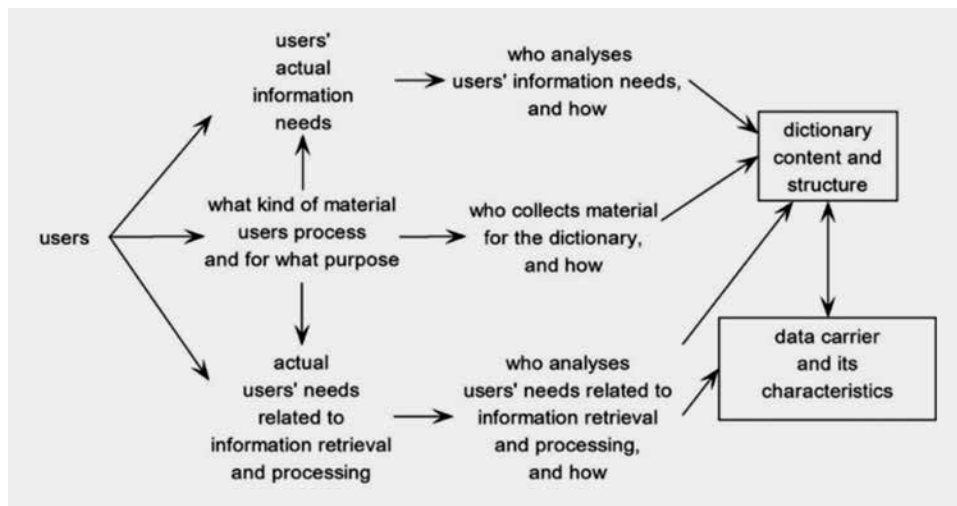
We begin by describing the theoretical background of dictionary planning. Factors affecting the planning of any dictionary can be divided into the factors deriving from the target group's needs and the factors which reflect the restrictions of the outside world. They can be called lexicographic factors proper and external lexicographic factors, respectively (Kudashev 2007: 66).

While performing some task (e.g. healthcare interpreting), dictionary users (e.g. community interpreters) have some information needs (e.g. they need information about the target language equivalents and their usage), as well as needs related to information retrieval and processing (e.g. they need to find and process this information very fast in the field). However, the lexicographer compiling the dictionary in most cases does not know precisely what the potential user's needs will be in a particular communicative situation. The general picture the lexicographer has is only an approximation, which can be improved with the help of surveys and interviews with target group representatives and by the careful selection of dictionary sources. In this way, the process of dictionary planning is highly affected by the methodology of gathering information about the users' needs, the volume and quality of this information, and the methodology of source selection. These factors are summarised in Figure 1 (cf. Kudashev 2007: 68).

External factors, in turn, are first of all related to the availability of resources, such as temporal, financial, human, and technical resources. Resource providers (e.g. *sponsors, publishers*) may set certain additional conditions of their own. Another external factor consists of the limitations imposed by the data carrier. The lexicographer's background, education, previous experience of dictionary-making, etc., may also affect the dictionary planning (Kudashev 2007: 71–73).

The target users' needs in our dictionary project, along with the methodology of gathering this information, are described in Section 3. The sources of the dictionary and the rationale behind their selection are described in Section 4. Among the external factors with a major impact on the dictionary project, we have to mention the tight schedule (one

Fig. 1. Factors Affecting Dictionary Planning



year) and limited budget, due to which we could only hire a part-time terminologist and only use volunteers from the healthcare sector as domain experts. However, we have managed to compile a dictionary with 4,000 entry words covering 30 common diseases.

3. TARGET GROUPS AND THEIR NEEDS

Following the general theory of designing dictionaries of special languages (e.g. Bergenholtz, Tarp 1995; Kudashev 2007; Grinev-Grinevič 2009), with special focus on pedagogical and statistical ones (Morkovkin 1990; Alekseev 2001; Fuertes-Olivera, Arribas-Baño 2008; Fuertes-Olivera 2010), we started the project by analysing the information needs of the target groups. The dictionary's main target group comprises professional community interpreters and university-level students of community interpreting. Secondary target groups include patients, medical staff, and medical students.

Information about the target groups' needs was collected with the help of self-reflection and by studying professional literature on community interpreting in general (e.g. Hale 2007; Valero-Garcés, Martín 2008; Koskinen, Vuori, Leminen 2018) and healthcare interpreting in particular (e.g. Pöchhacker, Shlesinger 2007; Angelelli 2008; Arocha 2012; Mäntynen 2013; Metzger, Nicodemus 2014; Roat, Crezee 2015; Ollila 2017; Souza, Fragkou 2020). In addition, we interviewed Seija Koskinen, Director of the Pirkanmaa

Interpreter Centre (Tampere, Finland), and Girta Roots, a community interpreter working with the Finnish, Russian, and Estonian languages. Pirkanmaa Interpreter Centre provides community interpreting in the second most populated urban region in Finland. Almost 40% of the Centre's interpreting assignments are related to healthcare. Secondary target groups were represented by Galina Mäkäräinen, a Russian-speaking medical doctor who participated in language courses for doctors with an immigrant background. Mäkäräinen also consulted on various medical aspects and verified the equivalents. Students of the special course *Finnish-Russian Healthcare Interpreting* organised in the autumn semester of 2019 at Tampere University also gave their feedback on the first version of the dictionary.

Working community interpreters use medical dictionaries to revise medical terms while preparing for an assignment. They may also need the dictionary during the interpreting to check a term they do not know or do not remember. Students of interpreting use medical dictionaries for the same purposes, but the focus is on mastering the vocabulary and preparing for simulated interpreting sessions.

While preparing for a real or simulated assignment, both working interpreters and students familiarise themselves with the topic and study the terminology related to it. They cannot know beforehand what part of the material is going to be useful for interpreting the particular case (Veisbergs 2006: 1220). While students know the topic of the assignment beforehand, working interpreters do not always have this luxury due to the General Data Protection Regulation (GDPR) and similar regulations restricting access to confidential information, and they may therefore have very little time for preparation. To facilitate the quick learning of medical vocabulary by topic, the dictionary should be organised thematically and contain only the most relevant information (cf. Grinev-Grinevič 2009: 68).

Students of interpreting have less background knowledge and lower linguistic competence than working interpreters. Consequently, they require more linguistic information about the terms and equivalents. For example, our experience has shown that Finnish-speaking students need information on the word stress for most Russian equivalents, while experienced Finnish-speaking interpreters only want this information in difficult cases (e.g. *целиаксия, рефлюкс*).

Interpreting assignments, for example doctor's appointments, are strictly limited in time, so a healthcare interpreter has very little time for

checking terms. This implies that the dictionary must be well structured and have fast and convenient search tools.

The dictionary has two functions. The first one is pedagogical. Community interpreters and students must know some basic terminology by heart. As it is hardly possible to always remember more specific terminology related to each disease, they also need to revise disease-specific terminology while preparing themselves for a concrete assignment. The second function of the dictionary is referential, as interpreters may forget a particular term on the spot and want to check it. The dictionary must therefore be thematic and alphabetical in order to comply with both requirements.

Healthcare interpreters need at least some basic knowledge about the healthcare domain, but this knowledge should probably be obtained from popularised texts or special handbooks like “Introduction to Healthcare for Interpreters and Translators” (Crezee 2013). Pedagogical healthcare dictionary for interpreters is not the right place for providing such kind of information, because the dictionary articles have to be very concise. Besides, compiling and modifying definitions are also known to be very laborious tasks that require plenty of resources, consultations with domain experts, taking care of intellectual property rights, etc. Due to this, we have not provided definitions or encyclopaedic information in our dictionary.

4. DICTIONARY SOURCES

The best source for a medical dictionary aimed at healthcare interpreters would probably have been recordings of authentic doctor’s appointments. Unfortunately, this information is confidential, so getting access to it is problematic. The only possible alternative to authentic conversations is written sources, preferably aimed at doctor–patient communication. The following sources of Finnish terms were selected as the primary ones:

- evidence-based guidelines for patients (*Käypä hoito*) and descriptions of diseases published by the Finnish Medical Society, Duodecim (Terveyskirjasto 2020)
- international classifications and standards
 - International Classification of Diseases, 10th revision³
 - International Classification of Primary Care, 2nd edition⁴

³ <https://icd.who.int/browse10/2016/en>

⁴ <https://www.who.int/classifications/icd/adaptations/icpc2/en>

- Terminologia Anatomica (Kolesnikov 2003, supplemented with Finnish terms in one of our previous projects, see Kudashev 2012)
- Finnish classifications and ontologies
 - Finnish Classification of Surgical Procedures (Lehtonen, Lehtovirta, Mäkelä-Bengs 2013)
 - Medicine Classification by the Finnish Medicines Agency FIMEA⁵
 - Finnish Ontology of Health and Welfare TERO⁶

The primary sources of Russian equivalents included:

- Evidence-based guidelines by the Ministry of Health of the Russian Federation⁷
- The Doctor’s Handbook “2000 diseases from A to Z” (Denisov, Ševtšenko 2010)

As secondary sources of Finnish terms and Russian equivalents, we have also used course books and manuals for medical staff (e. g. Jousimaa et al. 2017; Mustajoki et al. 2019) as well as mono- and bilingual dictionaries (e.g. Hyttinen et al. 2013; Fagradânc s.d.; see Semenova 2020: 29–34 for a critical overview of existing Finnish–Russian medical dictionaries). As a rule, we have not used materials translated from other languages. However, at present, many classifications are international anyway. Besides, most materials on evidence-based medicine available in Russian are translations from English or other languages. For example, we have used a unique printed manual “Evidence-Based Medicine Guidelines” (Denisov et al. 2002) translated from English. Translated texts, however, were used with care, and terms extracted from them were cross-checked in non-translated sources.

5. MEGASTRUCTURE

The dictionary’s front matter consists of the Preface and instructions on how to use the dictionary. The back matter contains the Russian–Finnish index and the list of sources.

The dictionary proper consists of two parts. Part 1 contains about 2,000 of the most common terms, which are supposed to be learned by heart. As terms are easier to learn thematically, they are grouped according to the domains listed below. Within each domain, the vocabulary is further

⁵ <https://www.fimea.fi>

⁶ <https://finto.fi/tero/fi>

⁷ <http://cr.rosminzdrav.ru/#/>

divided into basic and advanced. For example, the basic level of anatomic terminology contains about 150 terms and the advanced level has about 800 terms. The basic terms are critical and should be mastered in the first place; the advanced ones are important, too, but may be learned later. The thematic sections in Part 1 are as follows:

- Healthcare system
- General medical vocabulary
- Diseases, symptoms, and complaints
- Anatomy and physiology
- Medical examinations
- Treatment and care, disease prevention, and rehabilitation
- Medication
- Medical equipment

The second part of the dictionary is disease-specific. Its function is twofold. First, it helps interpreters and students to prepare for the assignment related to a particular disease, even at short notice. The second function is referential. Even experienced interpreters – let alone students – cannot keep in mind all the terminology they may need. The second part of the dictionary provides them with disease-specific equivalents conveniently grouped into subdomains for quicker retrieval. Each disease-specific section in Part 2 is divided into the following thematic sections:

- Disease and its subclasses
- Associated diseases and diseases with similar symptoms
- Anatomy and physiology
- Symptoms and complaints
- Medical examinations
- Treatment and care, disease prevention, and rehabilitation
- Medication
- Medical equipment
- Miscellaneous

Terms from Part 2 may also be included in Part 1, which means that the two parts of the dictionary are not exclusive but partly overlap. In the current version of the dictionary, Part 2 covers about 30 of the most common diseases, which were selected on the basis of healthcare statistics by the Finnish Institute for Health and Welfare⁸ and consultations with a

⁸ https://sampo.thl.fi/pivot/prod/fi/avo/perus06/summary_icd1001

domain expert. Domains in Parts 1 and 2 were selected by grouping the terms extracted from medical texts into thematic classes and by performing a frame analysis of the communicative situation “doctor’s appointment” (cf. Madžajeva 2012; Gagarina 2015).

6. MACROSTRUCTURE

Dictionary entries are organised into a table with two columns. Although the table format speeds up searches, the table borders should be light so as not to distract the user’s attention. The dictionary is divided into thematic sections as described above, but within all the sections of Part 1 and Part 2 the terms are arranged alphabetically. Thematic order supports the pedagogical function and alphabetical order plays the referential function.

Figure 2 demonstrates a portion of the dictionary from the disease-specific section *Reflux*. The first bolded caption is *Disease and its Subclasses*, and the second one is *Associated Diseases and Diseases with Similar Symptoms*.

Fig. 2. Example of a Disease-specific Section

Osa 2 -- Refluksi -- Sairaus ja sen alatyypit	
<u>refluksi</u> ; <u>refluksitauti</u>	рефлюкс
<u>refluksitauti</u> → <u>refluksi</u>	рефлюкс
Osa 2 -- Refluksi -- Liitännäissairaudet ja oireiltaan samantapaiset sairaudet	
<u>adenokarsinooma</u>	аденокарцинома
<u>ahtauma</u> i; <u>striktuura</u>	сужение канала; стриктура
<u>anemia</u>	анемия; малокровие (разг.)
<u>aspiraatio</u>	аспирация
<u>Barrettin epiteeli</u> → <u>Barrettin ruokatorvi</u>	пищевод Барретта
<u>Barrettin ruokatorvi</u> ; <u>Barrettin epiteeli</u>	пищевод Барретта
<u>ylävatsavaivat mon.</u> ; <u>dyspepsia</u> ; <u>ruoansulatushäiriö</u> ; <u>ruoansulatusvaivat mon. (ark.)</u>	расстройство пищеварения; диспепсия
<u>esofagiitti</u> → <u>ruokatorven tulehdus</u>	эзофагит; воспаление слизистой оболочки пищевода
<u>gastriitti</u> → <u>mahatulehdus</u>	гастрит

By default, the synonyms of Finnish terms are put both under the main entry word and as cross-references in their alphabetical place. Cross-references are vital when the user checks an unfamiliar term. For the user’s convenience, cross-references are also provided with Russian equivalents. However, as repetitions may bother users who are learning terms, it is possible to switch cross-references off in the electronic version of the dictionary.

Homonyms, i. e. words or word combinations referring to two or more concepts, are provided with Roman indexes and disambiguation notes. In the example below (see Figure 3), *kuivuminen I* refers to *dryness* (as in *skin dryness*) and *kuivuminen II* to *dehydration* (as in *dehydration of the body*).

Fig. 3. Treatment of Homonyms

Osa 1 -- Sairaudet, oireet ja vaivat -- Vaikeusaste A	
kuivuminen I	сухость (ж.) (кожи, слизистых и т.п.)
kuivuminen II; dehydraatio; nestehukka	обезвоживание (организма); дегидрация; дегидратация

The concept-oriented approach prevents one of the “deadly sins” of bilingual lexicography (cf. Kromann, Riiber, Rosbach 1991: 2724), when multiple meanings are presented in the same entry without proper disambiguation. This results in a long line of translation equivalents, some of which are not interchangeable as they refer to different concepts. Besides, the lack of disambiguation notes may slow down the process of choosing the correct equivalent and result in translation mistakes. The primary need of any translator or interpreter using a dictionary is to locate a correct translation equivalent as quickly as possible and to be sure that this is the right choice (Varantola 1998: 181; Grinev-Grinevič 2009: 68; Nkwenti-Azeh 2001: 604–606).

It is also important to use a proper delimiter between the synonyms. Comma is not the best option, as some LSP designations (especially explanatory equivalents) may already contain a comma (see Figure 4). Semicolon is a safer option (Kudashev 2007: 275).

Fig. 4. Example of Equivalents Containing Commas

alkueläintauti	протозойная болезнь; болезнь, вызванная простейшими
hengenvaarallinen tila	опасное для жизни состояние; состояние, опасное для жизни

MICROSTRUCTURE

Entries in the dictionary consist of the following data fields: the main Finnish term, its possible synonyms, the grammar and usage labels related to them, the Russian equivalent, its possible synonyms, and the grammar and usage labels related to them. The order of synonyms within the entry was determined with the help of statistical analysis and domain experts.

Assuming that most community interpreters have a good command of the foreign language, we have provided only a limited amount of phonetic and grammatical information. However, in some cases we also had to take into consideration the needs of the second target group, i.e. students.

All Russian equivalents containing more than one syllable are provided with stresses marked in bold (see Figure 5). In some words, stress is variable. For example, *спирометрия* (“spirometry”) may be pronounced *спирометрия* or *спирометрия*. In such cases, both possible stresses are marked at the same time. In the future versions of the dictionary, we plan to also mark secondary stresses in multicomponent words, such as *электронеуростимуляция* (“electroneurostimulation”), for example, by underscoring.

Fig. 5. Examples of Stresses in Russian Equivalents with More Than One Syllable

spirometria; spirometriatutkimus; keuhkojen toimintakoe	спирометрия
veri	кровь (ж.)
ylävatsa	эпигастрий; эпигастральная область; верхний отдел живота; верхний отдел брюшной полости

Russian letter “ë” is never substituted with “e” in our dictionary, as this may cause problems for non-native speakers and even lead to misunderstandings in the cases when “ë” is semantically distinguishing. For example, if we write *небо* instead of *нёбо* (“palate”), a student or an inexperienced interpreter may decide that this anatomic term is homonymous with the general language word meaning “sky”, which would lead to major problems during interpreting.

Originally, we did not plan to provide any additional pronunciation guidelines about Russian terms, except for word stresses. However, we have noticed that the correct pronunciation of some terms is not obvious even to native speakers, let alone students learning a foreign language. Here are a few examples of challenging cases. Sometimes, pronunciation guidelines about palatalised consonants are required for Russian words (e.g. that *термотерапия* [“thermotherapy”] and *протез* [“prosthesis”] should be pronounced with a soft “t”). As pronunciation of abbreviations is not always predictable in Russian, it should probably be specified at least in ambiguous cases. For example, abbreviations like *МЭГ* (abbr. from *магнитоэнцефалография* “magnetoencephalography”) can potentially be read either letter by letter (эм-э-гэ)

or as a “normal” one-syllable word (мэг)⁹. Terms and abbreviations containing foreign components may also cause pronunciation problems. For example, is “C” read as “s” or “ts” in *C-реактивный белок* and its abbreviation *СРБ* (“C-reactive protein, CRP”)? And how should *pH-метрия* (“pH measurement”) be read? A combination of a transcription and an audio file would probably be an ideal solution in such problematic cases.

Terms in the plural form and abbreviations are equipped with the corresponding labels. Informal, colloquial forms (collected from articles aimed at patients and with the help of the domain expert) are marked with a usage label (see Figure 6). For example, *HDL cholesterol* is often informally called *good cholesterol*. Both terms are included in the dictionary, but the latter one is marked as colloquial.

Fig. 6. Examples of Grammatical and Usage Labels

HDL-kolesteroli; hyvä kolesteroli (<i>ark.</i>)	липопротеиды высокой плотности <i>мн.ч.</i> ; ЛПВП <i>сокр.</i> ; хороший холестерин (<i>разг.</i>)
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Irregular plural forms are given in italics in round parentheses to warn users about the unusual inflection. Terms which are typically used in the plural are provided with a note (see Figure 7).

Fig. 7. Examples of Irregular Grammatical Forms and a Note on Predominant Usage in the Plural

<i>pohje</i> (<i>мон. pohkeet</i>)	<i>икра</i> (<i>чаще мн.ч. - икры</i>)
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Russian equivalents ending in the soft sign (“ь”) are provided with gender labels, as their gender is not obvious (see Figure 8). Gender labels are also provided in word combinations containing components ending in “ь” unless their gender can be figured out from the dependent word(s).

Fig. 8. Examples of the Gender Label

käheys; äänen käheys	осиплость (<i>ж.</i>); хрипота
känsä	мозоль (<i>ж.</i>)
köhä → yskä	кашель (<i>м.</i>)

⁹ <http://new.gramota.ru/spravka/letters/60-rubric-91>

Partial equivalents are marked with the \approx sign (see Figure 9). For example, the Finnish concept *luontaistuote* (\approx “natural product / health food”) differs from the Russian concept *биодобавка* (\approx “dietary supplement”), although in many cases they can be used as contextual equivalents.

Fig. 9. Treatment of Partial Equivalents

<i>luontaistuote</i> \approx биодобавка; БАД <i>сокр.</i> ; биологически активная добавка

Ideally, the differences between the concepts should also be commented on, but such comments would at the same time prevent the dictionary from being a compact reference work. This is an example of the inevitable inner contradictions of a dictionary that has multiple functions and / or is aimed at multiple target groups. In such cases, dictionary compilers must either prioritise or make compromises.

7. CHALLENGES ENCOUNTERED IN THE PROJECT

7.1. Culture and Language Specific Terms

Among the main challenges of any bilingual dictionary project are of course culture-specific terms, as national concept systems and terminology differ even in such an international domain as medicine. In particular, terms related to the organisation of healthcare in different countries may cause problems. For example, Finnish *fysioterapia* and Russian *физиотерапия* mean different things. The Finnish term denotes mainly *physical therapy* while the Russian one *electrotherapy*. There is a vast discussion on the differences between these concepts in the West and in post-Soviet countries in Wikipedia. It is not always clear which strategy, domestication or foreignization, should be used in such cases.

Differences between languages may result in situations when a noun has to be translated with a verb or an adjective and vice versa. For example, the Finnish term *raskauden yliaikaisuus* (lit. “post-termness of pregnancy”) cannot be translated directly into Russian or English using a substantive construction. At least it will not sound natural. In such cases, a “contextual” equivalent (*переношенная беременность* “post-term pregnancy”) and a note are probably a better solution (cf. Vehmas-Lehto 2010: 368; Probirskaja-Turunen 2005: 104).

To understand the nuances of translating culture and language specific terms, in most cases one must have a good command of the languages used in the dictionary, in our case Finnish and Russian. As there is no point in discussing such issues in an article written in English, we will skip this topic and focus on several less language-specific challenges.

7.2. Interdisciplinary Terminology

One of the challenges of compilation of medical dictionaries is that contemporary medicine is a multidisciplinary domain which is related to many other domains: biology, chemistry, pharmacology, engineering, etc. (e.g. Georgievskij 1981: 82). In Finland, healthcare is also closely inter-related with the social security and social welfare sector. Even the ministry responsible for the healthcare is called *Ministry of Social Affairs and Health*.

Consequently, it is not always easy to decide whether such terms as *sairausloma* (“sick leave”), *äitiyspäiväraha* (“maternity allowance”) or *ammatillinen kuntoutus* (“vocational rehabilitation”) belong into the medical or social welfare domain. However, as these terms repeatedly appear in the texts aimed at patients, and community interpreters have to master social security terminology anyway, we have included in our dictionary security and social welfare terms frequently used in the healthcare sector.

7.3. Form of Headwords and Equivalents

As was demonstrated in several studies (e.g. Kudashev 2007: 360–363; Kudashev 2012; Kudashev 2013: 64–70; Kudashev 2016), terms a) are not always used in texts and reference resources in their full and unambiguous form, and b) some lexicographic practices aimed at data compression may disorient users as regards the form of terms and target language equivalents. Dictionary compiler should avoid these pitfalls by extracting and reconstructing terms correctly from the dictionary sources and presenting them unambiguously in the dictionary.

The most common challenges encountered during the “text mining” include:

- contextual use of abridged and abbreviated forms of terms
- unjustified capitalisation of the whole term or the first letter
- substitution of parts of terms with a special mark even in the cases when the original term cannot be reconstructed mechanically
- use of inversion
- clustering of multiple terms into a single one.

In order not to mislead the users, entry words and equivalents should be given in the dictionary in the full, unambiguous and natural form. In particular, this means that capitalisation should be used only when required by the spelling rules. For example, spelling *FINNISH INSTITUTE FOR HEALTH AND WELFARE* or *Cosmetic Surgery* is unjustified but proper capitalisation is required in such terms as *ACE inhibitor* or *vitamin D deficiency*. No inversion should be used. For example, *nasal spray* should not be given in the form *spray, nasal*.

Headwords and equivalents should not be compressed in any way, for example by omitting repeating elements and substituting them with commas, slashes, brackets, etc. For instance, while the term *transcutaneous electrical nerve stimulation* is often abridged as *transcutaneous electrical stimulation* and *transcutaneous nerve stimulation*, all three forms should be provided in the dictionary as synonyms and written in full. Users, especially students, may not be able to correctly interpret compressed forms like *transcutaneous (electrical) (nerve) stimulation*. Besides, interpreters making quick inquiries do not have time for decoding. In addition, from the technical point of view, compression hinders searching, sorting and forming the target language index.

Although headwords are typically provided in the dictionary in the singular, some nouns may and/or have to be provided in the plural (cf. Berkov 2004: 30). *Pluralia tantum*, i.e. nouns which are always used in the plural (e.g. *scissors*), are a clear case. However, some nouns technically have a singular form but are typically used in the plural (e.g. *bronchus / bronchi, cramp / cramps, chemical / chemicals*). In the latter case, for the users' convenience, the noun should probably be provided twice, both in the singular and in the plural.

In the medical language, some adverbs have synonyms which, strictly speaking, are not lexical units. For example, *подкожно / под кожу* ("subcutaneously / under the skin"), *назально / через нос* ("nasally / through the nose"). However, such expressions are lexicalised units in their own terminological rights, so they should be included in the dictionary as full-fledged entry words (cf. Kudashev 2013: 59–60).

7.4. Scientific vs Informal Terms

Medical discourse, like many other languages for special purposes, is multi-dimensional. In particular, it can be categorised according to the participants. One can distinguish communication between doctors, doctors

and nurses, doctors and patients, etc. (cf. Bergenholtz, Tarp 1995: 19; Abramova 2003; Alekseeva, Mishlanova 2002: 104–105; Agadžanân 2018; Gotti 2018: 13–14). Doctor–patient communication differs from other communicative situations in many respects. Typically, patients (and community interpreters) lack a medical background, which means that they tend to communicate using everyday vocabulary rather than scientific medical terminology. This presents a major challenge for dictionary compilers, who have to balance between the general and professional dimensions.

For example, the Russian word *гипертония* (arterial hypertension) used to be an official medical term. It is generally understood and very frequent in everyday discourse. However, it has become obsolete in scientific parlance and has been substituted by the term *артериальная гипертензия*, which is much less familiar to patients. A similar case is the pair of terms *аденома простаты* and *гиперплазия предстательной железы* (prostatic hyperplasia). As our dictionary describes communication between doctors and patients, we have decided to include informal yet widely used terms alongside official ones. However, official terms precede the informal ones. It is not obvious how such informal terms should be labelled. From the doctor’s point of view they are obsolete, but from the patient’s perspective they are not. We have decided to mark them as colloquial, as they are a part of the patients’ vocabulary which has been “determinologised”.

Many official terms are abridged in oral communication. For example, *диабет* (“diabetes”) is usually used in the full form in texts and reference resources (*сахарный диабет* “diabetes mellitus”), but in everyday life the abridged form is much more common. Terms may be also “abridged” at the conceptual level, with the help of a metaphorical transfer. For example, *шейка матки* (“cervix of uterus”) consists of multiple parts, containing, in particular, *наружное отверстие шейки матки* (“external orifice of the uterus”). Yet, in the context of gynaecological examinations, patients usually do not make fine distinctions between various parts and tend to speak only about *cervix*. Should lexicographer compiling a dictionary for doctor–patient communication be overzealous in this respect or not?

Terms used in scientific classifications may differ from terms and general language words used in doctor–patient communication. For example, we won’t find such words as *waist* and *middle* (parts of the body), vital in a conversation about obesity, in *Termonologia Anatomica*. This underlines the importance of extracting terms from multiple sources instead of relying on just one, although authoritative one.

Cultures and languages differ when it comes to preferences as regards international vs. national components in medical terms. For example, in Finland, terms based on national components are much more widely used among both doctors and patients than derivatives from Latin and Greek. Yet, there are exceptions. For instance, such international term as *diabetes* is much more frequent than the term consisting of Finnish components – *sokeritauti* (“sugar disease”). In Russian, on the contrary, terms based on Latin and Greek are more popular than Russian synonyms, even among patients. These culture-specific preferences should be taken into account in the dictionary.

Summing up, we have to admit that it is not always easy to decide which terms – strictly scientific, professional or colloquial ones – should be included in a dictionary for doctor-patient communication in the first place and in what order they should be provided. There is no universal “rule of thumb” in this respect, so each case have to be treated individually.

7.5. Treatment of Synonyms and Abbreviations

An abundance of synonyms and abbreviations is typical of medical language (e.g. Georgievskij 1981; Kuryshko 2001; Abramova 2003). If a basic term has many synonyms, its derivatives will also have plenty of synonyms. For example, *лекарство* (“medication”) has multiple synonyms in Russian: *средство, препарат, медикамент*, etc. Consequently, every kind of medication may be called using (almost) all these words, e.g. *anti-inflammatory drugs* are *противовоспалительные лекарства / средствства / препараты / медикаменты*. An abundance of synonyms presents a number of challenges related to their selection and placement in a particular order in the entry. We have used the following criteria when solving these issues:

- understandability (patients and interpreters should understand as many terms as possible)
- frequency (frequently used terms are typically more comprehensible and easier to remember)
- simplicity and shortness (simple and short terms are easier to remember)
- diversity (to serve the reference function, the dictionary should also contain terms lying outside the interpreter’s active word stock)
- authoritativeness of the source (terms from authoritative sources are prioritised).

However, these criteria may contradict each other. For example, abbreviated forms are shorter and in principle should be easier to remember. In some cases, this works. For instance, the abbreviation *УЗИ* (medical ultrasound) is much more frequent in Russian than its full form, *ультразвуковое исследование*. In addition, everybody knows this abbreviation. Placing the abbreviation before the full form is therefore quite justified. However, some abbreviations are less well known to patients. For example, the abbreviation *НПВС* (nonsteroidal anti-inflammatory drugs, NSAIDs) is quite rare, despite the fact that NSAIDs themselves are probably familiar to everyone. In this case, the full form should be placed first.

Another example demonstrates the contradiction between authoritative-ness and frequency. According to an authoritative medical handbook (Denisov, Ševtšenko 2010), *waist circumference* is *окружность талии* in Russian. This term is frequent by itself: there are about 577,000 hits for this word combination in Google. However, according to Google, two other synonyms are even more frequent: *объём талии* yields over 7,000,000 hits and *обхват талии* over 11,000,000 hits. In this particular case, the order of synonyms is not very important, as all of them are frequent. However, this example once again stresses the importance of crosschecking even when terms and equivalents are extracted from authoritative sources.

As we can see, prioritisation of the general guiding principles is different in each individual case. To verify their decisions, dictionary makers should consult domain experts and representatives of the target groups.

8. TECHNICAL IMPLEMENTATION

The dictionary will be published both as a database accessible over the web and as a printable dictionary in pdf format. The electronic version enables efficient searches as well as some useful dynamic features. For example, it is possible to switch some data (e.g. cross-references, administrative data, and domain labels) on and off depending on the intended use. The printable version, in turn, can be used even in situations where the use of electronic devices is not allowed or the Internet connection is poor.

The dictionary has been compiled using a tailored version of the in-house dictionary writing system MyTerMS (see Kudashev, Kudasheva 2006). MyTerMS is a web interface to the underlying lexicographic database. MyTerMS has been used in several dictionary projects and serves as a terminology management system for terminological projects at Tampere University and the University of Helsinki, Finland.

Fig. 10. The Main Window of the MyTerMS Dictionary Writing System



MyTerMS performs all basic operations that can be expected from dictionary management software, such as adding, editing, searching, browsing, printing, and deleting entries. It also automates many operations. For example, while adding a number of entries belonging to the same domain, it is possible to prefill the domain field instead of selecting it manually every time. MyTerMS also helps ensure the integrity of the data, for example, by preventing duplicate entries and automatically managing cross-references. In addition, it ensures the correctness of the input by performing a compliance check before saving the data.

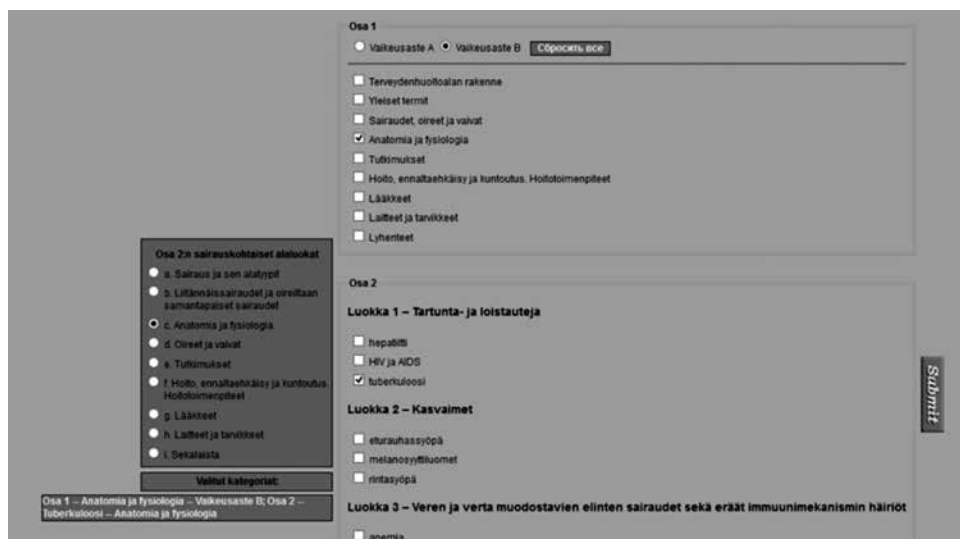
The entries are segmented into data fields, and the articles are formed “on the fly” with the help of scripts and cascading style sheets. The layout of the entries is as close to the final as possible except for the presence of some administrative data, which is visually separated from the final data with colour. Administrative data as well as cross-references can be switched on and off by ticking the corresponding checkboxes.

One of the strengths of MyTerMS is its advanced search. Users can perform even very complex searches by using wildcards and regular expressions and combining multiple search conditions. This helps extract data almost by any criteria or their combination. Figure 10 demonstrates the main window of the programme. The green frame is the control panel with various control buttons and options. The two lists on the left are the termlist and the hitlist. The largest frame is the entry frame. Letter rangers in the

top left corner allow the length of the termlist to be limited for faster refreshing. In the same corner, there is also a ‘quick search’ pane facilitating navigation through the termlist and the hitlist. The user only needs to type the initial letters of the term for which they are searching.

In a thematic dictionary, it is particularly important to mark domain labels accurately. In MyTerMS, this is done with the help of the domain selector which can be opened from the add / edit form and the main window. Domain tags are added with the help of radio buttons and checkboxes. In the example below (see Figure 11), a term is being added to Part I (*Osa 1*), thematic group “Anatomy and Physiology” (*Anatomia ja fysiologia*), advanced level (*Vaikeusaste B*) as well as to Part II (*Osa 2*), class “Tuberculosis” (*tuberkuloosi*), subclass “Anatomy and Physiology” (c. *Anatomia ja fysiologia*).

Fig. 11. Domain Selector



As we can see, a term may be marked as belonging to the general terminology and / or related to one or more diseases. When performing a search, users can limit it to any combination of domains and / or subdomains by opening the same selector (see Figure 12). The same tool can be also used for setting a domain or a combination of domains as “preferred”. This saves time and helps to avoid errors when the terminologist is adding multiple terms related to the same domain.

Entries are added and edited with the help of an HTML form (see Figure 13). The form allows up to seven synonyms to be added for each

Fig. 12. Domains Selected for the Search with the Help of the Domain Selector

Search only in these domains: Osa 1 -- Anatomia ja fysiologia -- Vaikeusaste B; Osa 2 -- Tuberkuloosi -- Anatomia ja fysiologia
 OR
 set preferred domain(s):

language. Additional sections for the synonyms open on demand. The programme allows adding inline formatting (e.g. bolded font, italics, upper and lower indexes). However, plain text copies of the corresponding fields are also saved to ensure correct and fast searches. Most labels related to grammar and usage are predefined, but users can also provide additional free-form notes related to these categories.

Fig. 13. HTML Form for Adding and Editing Entries

Finnish part
 fi term nuhatipat LIL...
 reliability [v] term type [v] POS [v] pl. [v] mon. [v] abbr. [v]
 grammar note [text]
 usage [v] [text] [v]

Russian part
 ru eqvt. 1 назальные капли
 +formatting назальные капли
 reliability [v] term type [v] POS [v] pl. [v] abbr. [v]
 grammar note [text]
 usage [v] [text] geographical usage [v] [text] [v]

ru eqvt. 2 капли в нос
 +formatting капли в нос
 reliability [v] term type [v] POS [v] pl. [v] abbr. [v]
 grammar note [text]

MyTerMS also automatically generates the Russian-Finnish index (see Figure 14).

Fig. 14. Automatically Generated Russian-Finnish Index

A
абдоминальное ожирение → keskivartalolihavuus
абдоминопластика → riippuvatsan korjaus
аборт → raskauden keskeyttäminen, raskauden keskeytyminen, raskauden keskeytys
абсцесс → paise
абсцесс легкого → keuhkoabsessi, keuhkopaise
автономная нервная система → autonominen hermosto, sisäelinhermosto
автономное сплетение → autonominen hermopunos
автономный нерв → autonominen hermo
агалактия → maidonerityksen puuttuminen
Агентство гигиены труда TTL → TTL, Työterveyslaitos
Агентство по безопасности и развитию в области фармацевтики Fimea → Fimea, Lääkealan turvallisuus- ja kehittämiskeskus
агонист рецепторов глюкагоноподобного пептида -1 → GLP-1-analogi
агорафобия → julkisten paikkojen pelko
аГПП-1 → GLP-1-analogi
агрессивность → aggressiivisuus
агрессивный вид рака → aggressiivinen syöpä
адаптация → sopeutuminen
аденовирус → adenovirus
аденоид → kitarisa
аденокарцинома → adenokarsinooma
аденома простаты → eturauhasen hyvänlaatuinen liikakasvu, eturauhasen liikakasvu

9. CONCLUSION

The compilation of a thematic dictionary for healthcare interpreters turned out to be a very interesting yet challenging task. Some information needs and needs related to data retrieval differ even among the main target groups of the dictionary and in different situations when using the dictionary. The combination of the pedagogical and the reference functions creates some tension, too. Additional target groups (such as patients, medical doctors with immigrant background, etc.) would have aggravated the situation further. In the current project, lexicographic contradictions were also complicated by external factors, such as the tight timetable and limited budget. If we get an opportunity to continue our work, the dictionary will be developed further in several directions.

While the number of terms that should be learned by heart (about 2,000) approaches the optimal level, the disease-specific part of the dictionary is undeniably modest. Our next goal is to cover about 100 of the most common diseases, which corresponds to approximately 10,000–12,000 terms. The diseases will be selected on the basis of official healthcare statistics. According to the Pareto principle (also known as the 80 / 20 rule), we expect to reach a reasonable saturation point when the dictionary covers the top 80% of reasons for visiting a doctor. A potential prob-

lem here is that the classes represented in the statistics are often “too big” and include multiple undifferentiated diseases.

During the healthcare interpretation course organised at Tampere University, we noticed that the students’ knowledge of medical terms, most of which are nouns, is insufficient. To use the terms correctly in the context, students also need to master verbs and collocations. We plan to enrich our dictionary with usage examples. In the electronic version, these could be switched on and off depending on the intended use of the dictionary.

Although the Russian-Finnish index allows using the dictionary in the opposite direction, it cannot be considered a full-fledged Russian-Finnish dictionary. As the dictionary is based on the Finnish concept system and Finnish sources, it lacks, for example, names of diseases which are widely used in the post-Soviet countries but not recognised by the international disease classifications (e.g. *остеохондроз* [“osteochondrosis”]; *дисбактериоз* [“dysbacteriosis”], *диатез* [“diathesis”]; *вегетосудустая дистония* [“vegetative-vascular dystonia”], etc.). Meanwhile, these terms may easily come up during medical interpreting. This means that the dictionary should be supplemented with at least some culture-specific Russian terms, probably in an appendix. Ideally, a separate Russian-Finnish dictionary should also be compiled.

Another appendix might be devoted to false friends, which exist even between such different languages as Finnish and Russian. Apart from international terms which may mean different things in different languages (see an example of *fyseoterapia* / *физиотерапия* above), another source of false friends are abbreviations. For example, Finnish abbreviation *IBS* originating from English (“irritable bowel syndrome”) should not be mixed up with Russian *ИБС* standing for *ишемическая болезнь сердца* (“coronary heart disease”). It is a good idea to warn interpreters about such cases in a separate section.

Our dictionary is already dynamic and customisable to some extent. However, the degree of customisation can be further increased. Our ultimate goal is a multipurpose medical dictionary aimed at multiple target groups, in which the contents could be customised according to the target group and intended usage. However, this requires a more profound study of the users’ perspectives and a great deal of lexicographic and software engineering.

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TEMINIS SUOMIŲ–RUSŲ KALBŲ ŽODYNAS SVEIKATOS PRIEŽIŪROS SRITIES VERTĖJAMS ŽODŽIU: SUDARYMO PRINCIPAI IR IŠŠŪKIAI

Santrauka

Augantis tarptautiškumas lemia vis didėjantį bendruomeninio vertimo (angl. *community interpreting*) poreikį. Taisyklingų terminų vartojimas yra pagrindinis kokybiško vertimo faktorius. Šiuo atžvilgiu sveikatos priežiūra yra viena iš kritinių sričių, kadangi nesupratimai, ypač kylantys dėl netinkamo terminų vartojimo, gali baigtis netinkamu gydymu. Medicinos žodynas yra didžiulis, tad sveikatos priežiūros srities vertėjams žodžiu ir vertimo žodžiu studentams reikalingas žodynėlis, kuriame a) būtų dažniausiai vartojami terminai; b) terminai būtų išdėstyti pagal temas; c) kuris būtų patikimas ir leistų greitai surasti tinkamiausius atitikmenis vertimo kalboje.

Šiame straipsnyje aprašomas *Teminio suomių–rusų kalbų žodyno sveikatos priežiūros srities vertėjams žodžiu* sudarymo procesas. Žodyną sudaro dvi dalys. Tam tikrus pagrindinius terminus vertėjai žodžiu turi mokėti atmintinai, taigi pirmoje dalyje pateikiama apie 2000 dažniausiai vartojamų terminų, sugrupuotų pagal temas, kurios buvo pasirinktos remiantis freimų analize (angl. *frame analysis*). Kiekvienoje temoje žodynas yra toliau suskirstytas į bendruosius ir specialiuosius terminus. Antroji dalis yra suda-

ryta pagal konkrečias ligas. Ji padeda vertėjams žodžiu ir studentams pasirengti su konkrečia liga susijusiai užduočiai. Be to, kadangi vertėjai žodžiu gali pamiršti konkretų terminą vertimo metu ir norėtų jį pasižiūrėti, antroje dalyje pateikiami su konkrečiomis ligomis susiję atitikmenys, patogiai sugrupuoti į mažesnius skyrius, kad juos būtų galima greitai surasti.

Kadangi vertėjams žodžiu skirti žodyno straipsniai turi būti labai glausti, juose pateikiama tik minimali semantinė ir lingvistinė informacija. Vis dėlto vertėjams žodžiu, verčiantiems sveikatos priežiūros srityje, paprastai trūksta medicininio išsilavinimo, tad jiems reikia šiek tiek informacijos apie medicinos terminų tarimą ir gramatinius požymius. Kompaktiškas skirtingų reikšmių išaiškinimas yra labai svarbus pasirenkant teisingą atitikmenį.

Žodyno sudarymas buvo be galo įdomi, tačiau ir sudėtinga užduotis. Šiame straipsnyje aprašomi kai kurie iššūkiai, susiję su konkrečioms kultūroms būdingomis sąvokomis, tarpdalykine terminologija, mokslinių ir neformalių terminų opozicija, sinonimų ir sutrumpinimų gausa. Ateityje planuojama žodyną plėsti keliomis kryptimis. Mūsų galutinis tikslas yra daugiafunkcis, įvairioms tikslinėms grupėms skirtas žodynas, kurio turinys galėtų būti pritaikytas pagal tikslią grupę ir naudojimo tikslą. Vis dėlto tam reikia išsamesnės naudotojų perspektyvų studijos ir daug leksikografinės ir programinės inžinerijos.

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