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PARTICULARITIES OF DENTAL TERMINOLOGY. TRANSLATION ISSUES AND SOLUTIONS: CASE STUDY

Alina Buzarna-Tihenea (Gălbează)

Assist. Prof., PhD, "Ovidius" University of Constanţa

Abstract: Nowadays, the spread of specialized language and multilingualism trigger the need for specialized translation. This paper aims at highlighting the fact that each specialized translation naturally implies a terminological activity. We also intend to offer a theoretical insight into terminology and its fundamental principles and into the issues encountered in the translation of a specialized text in the medical field (more specifically, dentistry), followed by a contrastive analysis of several highly specialized terms (in English, as the source language, and in Romanian, as the target language) and by the discussion of some translation solutions. The paper is structured in three main parts. The first part briefly discusses several issues related to translation; the second part is focused on the analysis of medical terminology and the third part focuses on a terminological analysis of a specialized translation. In this last part, we will enumerate, exemplify and give solutions to the difficulties encountered in translation, dealing with synonyms, acronyms and abbreviations, pluralia tantum nouns, terms that slipped from the general lexis, specific phraseologies and some difficult terms. The specialized terms will be analyzed in terms of properties and behavior in both languages and the differences will be highlighted.

Keywords: dental terminology, translation, English language, target language, source language

1. Introduction

Modern society is characterized by the spread of technology, specialized language and multilingualism, hence the need for specialized translation, which, by its very nature, implies terminological activities (Nădrag, 2012). In this regard, the translators who need to translate words or phrases from different specialized fields should employ the terminological approach of the translation in order to learn the main concepts of the respective field. Additionally, translation involves a decision-making process, based on an interminglement of language abilities, specialized knowledge in the respective field, intuition and research skills (especially when the translator is dealing with highly specialized terms or with cultural concepts). In Bukacek's view (1999), an adequate translation should express the meaning behind the use of the written words from the source language in the written word usage of the target language. Although, at the first sight, the translator seems to deal only with mere words and phrases, s/he actually handles units of meaning that may or may not be expressed by the words from the respective texts (Bukacek, 1999). It is noteworthy that the meaning of words often depends on the context. Therefore, the translator should rely not only on the linguistic signs and hints revealed by the document, but s/he should also make use of extra-linguistic knowledge; s/he should be able to understand and identify the distinctions in meaning from the source language and find equivalent distinctions in the target language (Bukacek, 1999).

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The translation process is different from other types of (bilingual) information exchange because, as Bell (1991:6) states, "the representation of a text" is substituted "by a representation of an equivalent text in a second language". In this respect, the same author understands translation as "a conjunction of text analysis and text synthesis" and underlines the importance of "the ability to recognize the alternatives (of interpretation) that are available in the original, the choices that can be found in the target language and the realization that choices foreclose others" (Bell, 1991: 72). The translator should also be endowed with creativity, especially when s/he encounters concepts or pieces of information in the target language that do not exist in the source language (Dan Nădrag, 2015). Nevertheless, we should not forget that the translator's activity also involves the processes activated by any kind of reader and/or writer in the source and target languages.

2. Medical terminology. Main features

Specialized medical terminology makes reference to the language employed in the medical field and even if, at the first sight, it is almost impossible to learn all the medical terms, knowing the etymology and the word-building strategy helps to understand medical communication. Since medical terminology abounds in Greek and Latin roots, prefixes and suffixes, we consider that the historical background of medical terminology explains the importance of the Greek and Latin roots and affixes in nowadays international medical language.

Dobrić (2013:493) states that the Hippocratic documents from the fifth and the fourth centuries BC represent the oldest written materials of Western medicine and, therefore, are seen as underlying the medical language from the Greek era. Thus, this period, when the Greek medicine "departed from the divine and moved towards logical reasoning" (Berghammer, 2006:40), was extremely important in the evolution of medical language. Another significant stage is represented by the first century AD, when Greece was "assimilated" by the Roman Empire. However, the medical (Greek) language was not replaced by Latin, but it was Latinized, by means of direct translation methods, such as calque and borrowing. This triggered the medical Latin era, which, at the linguistic level, was characterized by a mixture of Latin and Greek words, roots and affixes. In this regard, Dobrić (2013: 494-5) illustrates this mixture in Aulus Cornelius Celsus's *De Medicina*, which is based on Greek sources. Because the author's translation of medical records was hindered by the numerous Greek medical terms that did not have any Latin equivalent, he chose to explain in Latin the symptoms of the diseases and to employ the original Greek word or phrase in his Latin text.

By the nineteenth century, the increasing necessity to communicate outside the academic environment (with persons that lacked academic medical training, such as students and patients) triggered the replacement of Latin in the medical field by local languages (Banay, 1948). However, it is noteworthy that these languages kept the Greco-Latin terminological core, which in Berghammer's perspective (2006:40) is almost like a precise and universal artificial language, as both ancient Greek and Latin are dead languages and, thus, it no longer changes. These statements reveal the importance of learning the meanings of the most recurrent Greek or Latin roots and affixes. Steiner (2002) explains the word-building strategy as a method of learning medical terms by "deconstructing" a complex word into its meaningful parts. According to this author, knowledge of the meaning of each affix or root can help us recostruct the meaning of long and intricate words.

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As far as medical terminology is concerned, many affixes refer to the proximity or nearness to anatomical structures (Dofka 2013:4). In dentistry, many specialized terms are derived from the names of bones or structures or from the names of dental procedures or practical approaches. As these terms are often made of small words, roots or affixes connected in a word chain, a translator can understand easily their meanings if s/he knows the meaning of each small part (and their combination possibilities). Usually, these smaller parts are prefixes that modify the term, root structures that provide the foundation to the term, and suffixes that qualify the word meaning (Cohen and DePetris, 2013). Therefore, the analysis of a word structure should take into account the roles played by these smaller word parts. For instance, a prefix qualifies the word by indicating quantity, color, size, condition, or location, while a suffix qualifies or describes the meaning. In its turn, a root represents the foundation of the word. When a specialized term has more than one root, a combining vowel (usually "o") is used to link them. It is noteworthy that the combining vowel "o" placed after the root is not employed when the suffix starts with a vowel.

3. Case study: translation difficulties and a contrastive analysis of English and Romanian Terms

This third part of our paper deal with the analysis of the issues encountered in the translation of a specialized article on *Ceramic Materials and Color in Dentistry* (i.e. the eighth chapter of the book *Ceramic Materials*), by Cláudia Volpato, Márcio Fredel, Analúcia Philippi and Carlos Petter, addressed to both dentists and dental lab technicians. Although it is a material that may be of interest to both dentists and lab technicians, we consider the dental technicians directly interested because the text abounds in technical information about the structure of ceramic materials and how they influence the color of dental restorations. We chose to analyze this complex text because it abounds in dentistry terms, physical terms related to the color phenomenon and chemical terms related to the ceramic materials, and it can be considered representative for the language used in dental technology. Moreover, the text type, variety and target audience are extremely important for the translator, because they offer information on the level of formality and the specific phraseology of the text.

For the purpose of our analysis of the translated article, performed from a terminological perspective, we will enumerate, exemplify and give solutions to the difficulties encountered in translation, dealing with synonyms, acronyms and abbreviations, *pluralia tantum* nouns, terms that slipped from the general lexis, specific phraseologies and some difficult terms. The specialized terms will be analyzed in terms of properties and behavior in both languages (i.e. the source and the target ones) and the differences will be highlighted. Another point of our analysis touches problems of domain-specific phraseologies, the specialized meanings of some terms and phrases that slipped from the common lexis, pluralization of some terms and the specific contexts in which they should be used. Due to the fact that specialized translation and terminology intermingle, words cannot be always translated from a general dictionary, because each word designates a specific concept that has to be understood in connection with the other concepts from the same conceptual field. The first step in the translation process is to structure the knowledge from that specialized field in order to identify the main concepts and to establish their relationships.

Moreover, as far as medical language is concerned, knowing the meaning of Greek and Latin roots and affixes is not enough for an accurate translation. As Berghammer (2006:8-10) illustrates, there are other traps that a translator should be aware of during the translation process, such as the fact that the spelling of the Greek or Latin originated term is different in

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English from the target language, in this case, Romanian. It is noteworthy that medical terminology also includes many terms that come from everyday speech and whose fundamental meaning was expanded to medical uses. In this case, the translator has to be able to identify these words as having a special medical meaning. Since, nowadays, English is seen as the *lingua franca* of scientific fields, sometimes, the target language borrows new specialized terms from English, along with the adjacent meanings and concepts. In this case, the translator has to find out whether the respective word has an equivalent in the target language and whether one of them is preferred in the respective context/ specialized field.

Before moving on with our analysis, it is impetuous to clarify the meaning of the term "dentistry" and how it must be translated in Romanian. The term "dentistry" is usually understood and translated by "stomatologie". However, this proves to be a narrow understanding of the term because, according to GDC - General Dental Council UK, it actually incorporates stomatology, dental technology, also referring to dental nurses, therapists, and hygienists (for more information, see http://www.gdc-uk.org/Pages/default.aspx). Therefore, in our opinion, the best option is to translate the term "dentistry" by the Romanian hyperonim "medicina dentara".

Two other important terms in this specialized field that should be dealt with are "prosthodontics" and "prosthetics". According to the word-building strategy, we can identify the meaning of the term "prosthodontics" by cumulating the separate meanings of the word parts, i.e. "prosth(esis)", "-odont(ia)" and "-ics" (i.e. "related to dental prosthesis"). In other words, "prosthodontics" is primarily regarded as "the dental specialty concerned with the making of artificial replacements for missing parts of the mouth and jaw" (*Merriam-Webster's Learner's Dictionary*). It is noteworthy that, according to *English Oxford Living Dictionaries*, this term originates from 1940s, "from prosthesis, on the pattern of orthodontics". Another observation would be that "prosthodontics" refers to a specific specialization field from dentistry dealing with different types of prostheses and has the synonyms "dental prosthetics", "prosthetic dentistry" and "prosthodontia" (*Merriam-Webster's Learner's Dictionary*). In contrast, the Romanian language has only the term "protetică dentară". The common speaker understands that "a prosthesis" is always removable; however, prosthetics create either fixed prosthesis ("restaurare dentară fixă") or removable prostesis "(restaurare dentară mobilă"). This is the reason why the English term "prosthesis" should not be translated through "proteză" but through a series of collocations, such as "restaurare/ reconstituire/ lucrare/ refacere protetică/ dentară; reabilitare orală". It is also noteworthy that the right term for "proteză mobilă" is "denture".

Another class of terms that should be discussed in order to render their correct translation is pluralia tantum nouns, such as "ceramics", "prosthetics", and "prosthodontics". These words are nouns when they are used in their plural form; however, when used in the singular, they function as adjectives, in nominal phrases such as "ceramic powders", "prosthetic restorations" and "prosthodontic devices". In the Romanian target language, the term "ceramics" follows the standard rules, having both a singular form ("ceramic") and a plural one ("ceramic"), whereas the terms "prosthetics" and "prosthodontics" have a singular equivalent, i.e. "protetică dentară".

In its turn, terminologization (whereby a general-language word or phrase changes into a word referring to a concept in a specialized language) also triggers several translation issues. This process gives birth to new words by analogy with the general meaning of the original word, involving the semantic transfer of certain features (for more details on this topic see Busuioc and Cucu, 2001). Even if this process creates synonyms (undesirable in terminology,

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as they hinder the translation process) the terms are easier to remember and have better chances of acceptance. Therefore, for a translator, it is important to be able to understand the real meaning of the word in each specific context and to choose between more synonyms the one that occurs in the respective field more often, and that fits within the text. Such an example is represented by the terms "invest" and "investment" and their counterpart, i.e. "divest" and "divestment". *The Longman Online Dictionary* defines the term "invest" as "1. to buy shares, property, or goods because you hope that the value will increase and you can make a profit. 2. if a government, business, or organization invests in something, they spend a large amount of money to improve it or help it succeed. 3 to use a lot of time, effort etc or spend money in order to make something succeed. 4. to officially give someone power to do something". In its turn, "divest" is explained as "1. to sell or give away something you own. 2 to remove something you are wearing or carrying" (*The Longman Online Dictionary*).

However, none of these meanings define the dentistry concept where, according to *Merriam-Webster's Learner's Dictionary*, "investment" refers to "1. an external covering of a cell, part, or organism; ***2.*** a layer of heat-resistant material in which a dental appliance (as a bridge or inlay) is cast or in which it is embedded before soldering". In its turn, "to divest" means "to deprive or dispossess especially of property, authority, or title**;** to undress or strip especially of clothing, ornament, or equipment" (*Merriam-Webster's Learner's Dictionary*). Thus, in our medical context "divestment" refers to the retrieval of the metal casting from the investing medium. By decoding these terms and with the help of knowing the process of making a prosthetic restoration, we find the correspondent terms in Romanian, i.e. "a ambala" and "a dezambala". From this clarification, another term derives – "investment material". If a translator is prone to translate the term through "material de ambalare", s/he will fail, because the right equivalent is the fixed collocation "masă de ambalare".

Another example is represented by the term "fixed dental prosthesis", also known as "bridge", which is translated in Romanian through "punte". Although they are considered more informal lexical variants, they are easier to use because of their shorter form and because they slipped into the specialized field by analogy, with the basic meaning of the word "to bridge" (i.e. 1. to make a bridge over or across <*bridge* the gap>; *also* **:** to join by a bridge; 2. to provide with a bridge" (*Merriam-Webster's Learner's Dictionary*); in this case to create a fixed dental restoration in order to replace a missing tooth by joining an artificial tooth permanently to adjacent teeth or dental implants). It is noteworthy that such differences in meaning between the words and the dentistry terms support the onomasiological approach of terminology (which suggests starting with the concept and then moving towards the term) as being more efficient and more accurate in translation than the semasiological approach of lexicology (which suggests starting with the word and then moving on to its possible meanings).

Attention should also be paid to the so-called "false friends" or homonyms. These words may trigger confusion and affect the translation quality because, for a single term, there are either several versions in the source language or more synonyms in the target language, wherefrom the translator has to select the most appropriate one, taking into account to the context, the level of in/formality and the target audience (Cabré, 2000). Such instances are (see Dofka, 2013): "die"("tooth or bridge pattern used in prosthodontic dentistry"), "dye" ("coloring material; may be used to indicate plaque"), "auxiliary" ("helping subsidiary, such as a dental assistant"), "axillary" ("underarm site; may be used to obtain body temperature"), "esthetics" ("pertaining to beauty"), "aesthesia" ("loss of pain sensation"), "facial" ("pertaining to the face; front surface of incisor tooth"), "fascial" ("pertaining to the fibrous

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membrane on muscles"). This situation can also be exemplified by the term "conforming ring", which has other alternative names such as "casting ring" and "flask ring". According to *The Longman Online Dictionary*, all these phrases refer to "a mould (hollow container) into which you pour liquid metal, plastic etc in order to make an object of a particular shape, or the object made in this way". When it comes to translate this term in Romanian, we find a series of terms, such as "ring/ringuri" (which is a borrowing from English and it is adapted to Romanian); "inel de turnat" (a calque); "conformator" or even "chiuvetă". The term "chiuvetă" seems more informal and it is present in real everyday communication between lab technicians and dentists. After researching this term, we found out that the term "chiuvetă" appears on online special stores as actually referring to a metal device for creating dentures. Even if some of the alternative lexical forms are quite acceptable, some informal uses such as "chiuvetă" for "conforming ring" are the result of the lack of a standardization organism. The reason why this term is used to refer to "a casting ring" be the effect of an enlargement of the term or as an incorrect use of the term. In conclusion, due to the academic nature of the target text, we would recommend the Romanian equivalent "conformator".

In its turn, the term "post and metal core" refers to a type of dental restoration used when there is inadequate tooth structure remaining to support a traditional restoration; it has two components, a small metal rod (a post) that is inserted into the root canal of the tooth and the core on which a restoration will be made (for more information, see http://www.dentistrytoday.com/dental-materials/974). In the target language, this complex term has a series of equivalents, such as "pivot dentar", "dispozitiv corono-radicular", "dispozitiv radicular", "stift dentar sau radicular" (see http://www.infodentis.com/pivot-dentar/definitie-rol-indicatii.html). The target term that has better chances of being understood as a translation of the source term is "dispozitiv corono-radicular" because it refers to both components and its acronym (i.e. DCR) is widely used for economy. In order to achieve accurate and unambiguous professional communication one has to choose the most appropriate translation equivalent adapted in spelling and should be found in up-to-date parallel texts that are representative of the field. This has been achieved by checking the vocabulary in both relevant, newly published literature and medical websites from the two languages.

Abbreviations and acronyms are other elements that can pose problems in translation because many of them are not universal and, furthermore, they can differ from one activity to another, as exemplified by Dofka (2013:1), where the abbreviation "*imp.*", in general dentistry, may indicate an impression, but in an oral surgeon's office "*imp*" be used in order to designate an impaction. Abbreviations and acronyms can sometimes produce ambiguity unless they are researched in the exact context where they appear. Ideally, acronyms should be internationally recognized. Such an instance is the term "CAD-CAM", which stands for "Computer-Aided-Design and Computer-Aided-Manufacturing" and is kept in this form in all languages. In dentistry, it stands for a computer device with two components that produces zirconia restorations. In the source text, another recurrent abbreviated term is "lab tech". Actually, it is a variation of the term "laboratory technician", formed by the back-formation strategy. In the target text, it is translated through "tehnician dentar" and we can notice that they have different components. In English, it is a compound word, made of two parts, i.e. "technician" and "laboratory", while in Romanian, the laboratory is replaced by the adjective "dental". While a "dental technician" is a correct and valid term, the Romanian phrase "technician de laborator" does not exist as a collocation. If abbreviations and acronyms are

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not correctly and exactly deciphered, the translation will fail and the professional communication will no longer be accurate.

We should also take into consideration the fact that every field has its own specific type of communication and its own terminology and phraseology, such as fixed collocations. Understanding the specific phraseologies of a domain is essential in the translation of specialized texts; it means to know the field and to become a semi-specialist of that field. In order to achieve an accurate translation, the translator has to follow the specific constraints of the communication in that field and language. Some instances in this regard are represented by "color scale", used in the target language either as a collocation or just as the single unit ("scale") to render the dental device with acrylic or ceramic teeth that is used in order to select the color of the patient's teeth. It also has the synonym shade guide. In the target language, the equivalent term is a fixed collocation, i.e. "cheie de culori". Another important phrase is "the preparation of the teeth", translated, in Romanian, by literal translation, as "prepararea dinților"; taking into account our context, it may also be translated by "șlefuirea dinților". Other terms that cannot be translated word-by-word include "*wax pattern" ("machetă din ceară"* and not "*model din ceară");* "investment material" ("*masă de ambalat"* and not "*material de ambalare").* But this aspect is not confined to only nominal phrases but also to describe stages of production. In Romanian, we have the phrases "a turna amprenta", "a turna modelul", "a turna metalul". In English, the term "to cast" is used as a verb in the structures "to cast the mold from plaster" and "to cast the metal", in order to show the process of pouring some material in a matrix, and as a noun when it refers to the result of the casting process: "plaster cast" ("*model din gips"*), also called "a model" or "a cast"; "metal casting" ("*schelet metallic"*).

4. Conclusions

The aim of this paper was to highlight the importance of terminology in specialized translation activities. It has been noticed that a specialized field has its own phraseology and collection of specialized terms. Thus, we can conclude that for a translator it is highly important to be aware of these elements, in order to create authentic professional communication and to carry out not just a translation activity but also a terminological one. The topic on which these assertions were implemented was the analysis of the language used in dental technology.

The analysis of the difficulties encountered during the translation of a specialized text, from a terminological approach (which, among others, included *pluralia tantum* nouns, synonyms, acronyms and domain-specific phraseologies), reveals the fact that a translator should also have specialized knowledge in the respective field. This is especially underlined by the importance of learning and using domain-specific phrases when translating, in order to get a natural and accurate communication in the target language. Thus, ideally, the target text should render the same information as the source text with as few traces of the translation process as possible; if the target text does not use specific phrases, the result will be a clumsy and unnatural type of communication.

Therefore, in order to efficiently translate a specialized text, the translator should also acquire some basic semi-specialist knowledge typical of the respective field, by learning the main concepts and the relationships between them, by searching for the right equivalent terms and phrases in the target language, in order to render the same information as the source text. Moreover, a specialized translator should also read specialized articles as much as possible, and even establish a relationship with a professional of that field, in order to solve lexical gaps

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and to double-check that the terms are appropriate translation equivalents, which can be found in parallel texts, representative of the respective specialized field.

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