AN OVERVIEW OF MEDICAL TERMINOLOGY

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***Abstract**: In the medical domain, the recent considerable advances in diagnosis, treatments, techniques, and in new areas of research, such as proteomics, genomics, stem cells, or medical informatics, have also brought about, within the XX th century, a change in terminology. Though one of the most consistent and uniform, at least in the Western countries, mainly based on Greek and Latin words, medical terminology, the special vocabulary used by health care providers, needs to be reassessed, in the light of the modern use of English as a vehicular language, a tendency that is not confined to the medical field.*

To do that, it is necessary to describe medical discourse, its complexity and various functions, on all relevant levels, including the text level. Such an analysis would start on the intralingual level, while at the same time it would be a stepping stone towards future interlingual comparisons.

The result is an overview of medical terminology, which, on the one hand, allows for a clear distinction to be drawn between special and general language, and, on the other hand, outlines the terminological and textual features of this type of special language.

***Keywords:** medical terminology, text, change.*

Medical language is a complex semiotic system, which ensures communication and information transfer in one of the oldest fields of knowledge. "Medicine is a highly competitive international domain of research and practice, therefore it requires a particular sensitivity of specialists towards language, culture, and community" (Busch-Lauer, 2001: 849).

Medical terminology, the special vocabulary used by health care professionals, for effective and accurate communication, is mainly based on Greek and Latin words. That is why "medical vocabulary is being felt as consistent and uniform throughout the world" (Janson Cohen, 2003: 5). It is also efficient; though some of the terms are long, they often reduce an entire phrase to a single word. The term "gastroduodenostomy", for example, stands for "the surgical formation of a communication between the stomach and the duodenum" (***, 2007).

"The lexical equivalence of medical terminology, at least in the Western languages, is so extensive as to border on uniformity" (Fischbach, 1986: 16), which makes reference sources widely accessible to heath care providers, who are speakers of different languages. And, finally, it is the subject itself, the human body and its functions, that is of a universality unequalled by any other. Those interrelated advantages contribute "to minimize misunderstanding and maximize meaning" (Fischbach, 1986: 16) in the specialized field under discussion. Consequently, medical terminology presents fewer lexicographic problems to scientific translation than any other domain.

To understand the complexity and various functions of medical discourse, on all relevant levels, including the text level, we have to take as a head start the comparison between general language and special terminologies, the latter subsuming medical lexicon. Trying to grasp "the specificity of scientific and technical terminology" (Guilbert, 1973: 5), Louis Guilbert begins with the common language. A survey of both the differences

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and common features medical terminology shares with the usual language, is instrumental to the description of the former.

The general language, the benchmark for all the other sub-vocabularies, had been cosidered till the XVIIIth century the common place of lexicographic approach and the preferred strand of linguistic analysis. Though the two forementioned sides of a vernacular language – the general and special vocabularies - are connected by the same phonology and morpho-syntax, the diversity of scientific and technical terminologies contrasts with the uniqueness of general language, which doesn't however entail uniformity, as the various communication settings have underlying registers adopted by each speaker. On the other hand, despite the multitude of special vocabularies, the scientific linguistic sign tends to be monosemantic, in a particular field of practice and research; the scientific lexeme designates a unique referent of the extra-linguistic reality.

Nevertheless, despite its reputed monosemantic character, the special term is sometimes unduly labelled as such, for a great many medical words, for example, are polysemantic. Instance the case of the term "rate", which, in the medical field, has a wide semantic coverage, functioning in a series of collocations, of which we quote only a few:

- heart rate
- death rate
- erythrocyte sedimentation rate
- basal metabolic rate
- circulation rate
- fertility rate (***, 2007)

Medical vocabulary is crowded with collocations (eg. to be on-call, renal failure, registered nurse, frontal bone, etc.), mostly made up of polysemantic lexemes, which all deserve more insight; those will be our focus of attention in an upcoming study. Unlike the alleged monosemantic special term, the current word, its counterpart, encompasses, more often than not, a wide range of internal semantic relations.

Less common to the ordinary speakers than general words, the medical linguistic sign is often a terminological neologism, created to designate a new concept, and last, but not least, can present itself under the form of borrowing.

In a nutshell, the broad outlines of the dichotomy current language/special vocabularies, briefly pursued in the previous paragraphs, lead to a clear distinction to be drawn between special and general language. Nevertheless, this opposition is quite loose, as it allows for a permanent transfer of lexical items from a compartment to the other, through terminologisation and determinologisation.

Bearing in mind the fore-established dichotomy general language/medical lexicon, we shall undertake to sketch the terminological and textual features of medical language, using the concerted tools of newly emerging sciences, namely terminology and textual linguistics. Such an analysis would start on the intralingual level, while at the same time it would be a stepping stone towards future interlingual comparisons.

The medical vocabulary is vast, and studying it may seem like surveying the entire vocabulary of a foreign language. In addition to that, like the jargon that arises in all changing fields, it is always expanding. Though the research task seems overwhelming, there are methods that could help our linguistic investigation. As we have already stated, the language of medicine, at least in the Western countries, is

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essentially Latin and Greek. “Since the dawn of recorded history, Latin and Greek, and, to an important but lesser extent, Hebrew and Arabic, have served as the languages of international communication in medicine, religion, and philosophy” (Fischbach, 1986: 20). Broadly speaking, medicine, together with geography and astronomy, is the only science “to have spread throughout the Western world in its original linguistic stroma” (Fischbach, 1986: 20). Daniel Boorstin once stated that “Doctors of Physic kept their secrets locked in languages their patients could not read. It is not surprising that they enjoyed the prestige of learning and the awe of the occult” (Boorstin, 1983: 338). Though some may still be thinking that “medical Latinism” (Netsky, 1968: 7) is an endemic disease, others regard it as ultimately more for the purpose of international understanding “rather than for the secrecy or display of knowledge” (Netsky, 1968: 7).

Built up on Greek and Latin, most medical terms can be divided into component parts, roots, prefixes, and suffixes, which also come from Greek and Latin, and maintain the same meaning whenever they appear (Figure 1). A good knowledge of these meanings entails that one can read, analyse, understand, and remember many medical words.

This is the place to take a glance over medical terminology from Saussure’s view on the arbitrariness of the linguistic sing. By arbitrariness Saussure means that “there is no internal connexion between the signifier and the signified” (Saussure, 1995: 100-101). That merely implies that the signifier is unmotivated, “arbitrary in relation to its signfied, with which it has no natural relation in reality” (Saussure, 1995: 100-101). Compound words and derivational forms are not absolutely arbitrary. They are relatively arbitrary, as they are motivated by their internal form. Consequenly, we may say that medical language is partly motivated, since most medical words can be analysed into component parts. Relative motivation is a progress factor in the development of languages, for it succeeds in saving linguistic means by having recourse to the lexical material already in use.

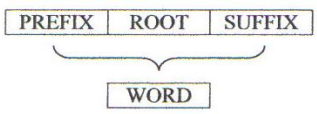


Figure 1 Word-formation

The medical root, more often than not of Greek or Latin origin, establishes the basic meaning of the word. The Greek word “kardia”, for example, meaning “heart,” has given, in Indo-European languages, the root “cardi” (eg. angiocardiography, myocardial, cardiology, tachycardia, endocarditis, etc.). Sometimes, both the Greek and Latin roots are used. The Greek root “nephros” (eg. nephron, nephritis, nephrology, pyelonephritis, etc.) and the Latin root “ren” (eg. renal failure, hepatorenal syndrome, renovascular, etc.) are used in words referring to the kidneys.

The same root may have different meanings in various fields of study. The Greek root “myelos”, meaning “marrow”, may apply to either the bone marrow or the spinal marrow. Therefore, to assign meaning to a word, the context should sometimes be taken into account.

Compound words contain more than one root. The following medical compounds serve as examples: “eyeball” (the ball or globe of the eye), “wheelchair” *(*a chair mounted on large wheels for the use of a sick or disabled person),

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"cardiovascular" (pertaining to the heart and blood vessels), "urogenital" (pertaining to the urinary and reproductive systems), and "lymphocyte" (a white blood cell found in the lymphatic system).

On the one hand, medical lexicon still rests firmly on the two pillars of Latin and Greek, but on the other hand, at present, English is becoming the language of medicine. It is a modern trend to view English as a vehicular language, which goes beyond the boundaries of the community of origin, a tendency that is not confined to the medical field; on the contrary, English may be considered this century's lingua franca of law, business, science and technology, having also taken the place of French as the international language of diplomacy since World War I. The global use of English can firstly be accounted for by historical tradition. A consequence of the British Empire expansion in the past, English linguistic supremacy is at present mostly due to the cultural, economic and technological advances coming from the English-speaking countries, such as the United Kingdom, and especially the United States, in the aftermath of World War II. The ultimate recognition of the hegemony of English came in the late 90's, when it joined French and German, as one of the working languages of the European Commission. At present, in practice, English is the sole working language of most United Nations bodies. One of the linguistic reasons in favour of the use of Anglo-Saxon terminology may be the fact that Romance languages, such as French, Romanian, Spanish, Italian, etc., do not have sufficiently productive derivation and compounding systems to be able to create new words as easily as English.

In the medical domain, the recent considerable advances in diagnosis, treatments, techniques, and in new areas of research, such as proteomics, genomics, stem cells, or medical informatics, have also brought about, within the XX th century, a change in terminology. Every year medical neologisms are created in English, to denominate breakthroughs, and then they are rapidly imported into other languages. Terms like: stress, screening, bypass, trial, feedback, graft, to name a few, abbreviations (EKG/ECG – electrocardiogram, EEG – electroencephalogram) and acronyms (MRI – Magnetic Resonance Imaging, LAD – Left Anterior Descending, PTCA – Percutaneous Transluminal Coronary Angioplasty, CABG - Coronary Artery Bypass Graft), which all have their root in the international medical English, are gaining acceptance everywhere, some of them without being translated.

"Even so, medical terminology, in both microscopic and macroscopic terms, continues to be built on pre- and suffixes of Greco-Latin parentage" (Fischbach, 1986: 21).

From the terminological features of medical language, we should pass in review some textual aspects of medical discourse. Medical discourse normally observes the constitutive and regulative principles of textual communication. The constitutive principles "define and create the form of behaviour identifiable as textual communication, and if they are defied, that form of behaviour will break down" (Beaugrande, Dressler, 1996: 11), while the regulative principles "control the textual communication" (Beaugrande, Dressler, 1996: 11).

Cohesion rests upon grammatical dependencies. In English medical texts, surface structures cannot be radically rearranged without causing disturbances. Specific morpho-syntactic features, such as foreign plurals, simple, past and perfect tenses, the passive voice, and adverbs, supply the grammatical forms and conventions for the

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surface components. “Obviously, the grammatical dependencies in the surface text are major signals for sorting out meanings and uses” (Beaugrande, Dressler, 1996: 11).

Coherence is illustrated particularly by the relations subsumed under causality. In the following sample sentence:

“Abigail Dailey, a 27-year-old woman, was treated for injuries suffered in a train derailment accident” (Janson Cohen, 2003: 12).

the “derailment accident” is the cause for “Abigail’s injuries”, since it created the necessary conditions for the latter.

As for the user-centered notions, intentionality and acceptability, inference and explicit sentences function altogether to ease communication among health care providers. With regard to the fifth standard of textuality, informativity, medical occurances are higly informative, which, on the one hand, avoids boredom or rejection of the text, but, on the other hand, may cause stress and difficulty in understanding for non-specialists. A strech of a medical textbook starts like that:

“High-penetrance monogenic or chromosomal disorders are the disorders that most clinicians think of as "genetic conditions." They include rare but familiar single gene disorders, such as neurofibromatosis, Marfan syndrome, and cystic fibrosis, and chromosomal abnormalities, such as trisomy 21 (Down syndrome). (Cecil, 2004: 191)”

Symbols, drawings, diagrams, and images can impair communication, as they give insufficient and encrypted information (Figure 2).

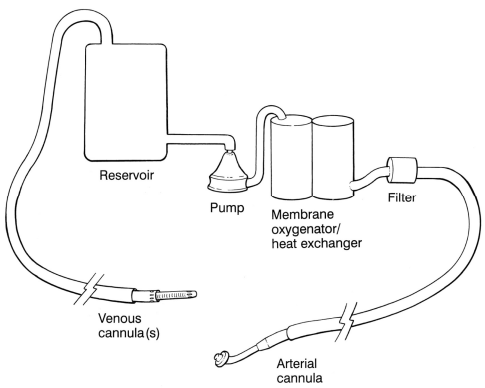


Figure 2 Basic cardiopulmonary bypass circuit with membrane oxygenator and centrifugal pump (Cohn, Edmunds, 2003)

The following figure (Figure 3), taken from a medical treatise, is likely to remain obscure in the eyes of non-specialists, as it displays no words, only its name. That leads us to another important feature of medical texts, in particular, and of scientific texts, in general, namely the fact that symbols, diagrams, and images, may play the role of linguistic signs in the specialized communication:

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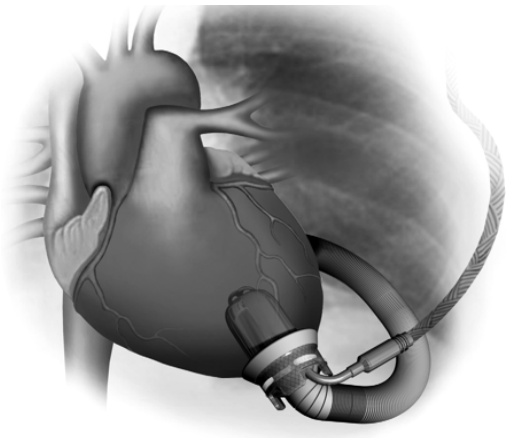


Figure 3 The Jarvik 2000 axial flow pump (Cohn, Edmunds, 2003)

Situationality is also to be taken into consideration, as a text presented at a medical conference or printed out in a textbook has a different relevance than a text used in the patient-physician dialogue.

And finally, intertextuality, concerning "the factors which make the utilization of one text dependent upon the knowledge of one or more previously encountered texts" (Beaugrande, Dressler, 1996: 10) is of paramount importance in the medical field. One cannot understand heart disorders if they do not have basic notions of anatomy and physiology of the heart, outlines of semiology, or principles of physical examination.

Though brief, the previously sketched overview of medical language, should draw attention to the fact that, in order to uncover the mystery of the medical domain, in which thinking and reasoning seem to advance full speed ahead, one should make sure that the medical language doesn't lag behind.

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