

GREEK AND LATIN FUNDAMENTALS IN THE DEVELOPMENT OF MEDICAL LANGUAGE

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Abstract

Medical specialized language consists of three strata: non-terminological lexis, common scientific lexis, medical terminological lexis, attesting autonomous units of Greek and Latin origin (anat. *ligamentum*, *musculus* etc.) and non-autonomous units, units of Greek and Latin origin which initially had a full lexical meaning, and in *statu praesenti* are elements forming a new lexical unit. Infiltrated in the general lexicon, non-autonomous lexical units of Greek and Latin origin hold the status of affixoids (compounding elements originating from autosemantic units that have an intermediate position between word and affix; a status that allows for nominal and structural characteristics).

The following doublets were analyzed: Lat. *digitus*, i, m = Gr. *dactylus*, i, m “finger” and Lat. *manus*, us, f = Gr. *cheir*, *kheir*, -ros, “hand”.

The Latin variants *digitus*, i, m and *manus*, us, f formed the anatomical terminology (it is worth noting that Latin has, par excellence, the status of “language of communication” in anatomy classes). The Greek variants *dactylus*, i, m “finger” and *cheir*, *chir* “hand” are, in particular, elements which form complex terms, predominantly used in clinical terminology.

The scholarly elements *dactil(o)-*, *-dactíl*, *-dactilíe* and *cheir(o)-*, *-cheirie/ chir(o)-*, *-chirie* form the terminology of several fields, including the medical one. Both “euphuisms” occurred as affixoids (primary or secondary position within a compound).

The existence of Greek and Latin doublets favours the establishment of semantic relations of synonymy between separate lexical segments of the word formed by affixoidation. Greek and Latin doublets were established during the Greek-Latin bilingualism, starting with the 1st century BC. Many words of Greek origin were so deeply integrated into the structure of Latin, that they served as a basis for derivation in compounding, conversion etc. However, the Greek origin of affixoids is not a reason for avoiding a relation of synonymy. So another feature of words formed by affixoidation is the establishment of semantic relations (synonymy, antonymy, homonymy, paronymy) between certain segments of the compound word.

Key words: *medical language, scholarly elements, affixoids, doublets, Greek-Latin*

Résumé

Le langage médical spécialisé est composé de trois couches: le lexique non-terminologique, le lexique scientifique commun et le lexique terminologique médical. C'est ici qu'on atteste des unités d'origine gréco-latine, autonomes (anat. *ligamentum*, *musculus*, etc.) et non-autonomes, unités d'origine gréco-latine qui, initialement, avaient un sens lexical plein, et *in statu praesenti* sont des éléments de constitution

d'une nouvelle unité lexicale. Infiltrés dans le lexicon général, les unités lexicales non-autonomes d'origine gréco-latine détiennent le statut d'affixoïdes (éléments de composition provenus des unités auto-sémantiques, qui détiennent une position intermédiaire entre mot et affixe; statut qui leur permet de bénéficier de caractéristiques normatives et structurelles).

Nous avons soumis à l'analyse les doublets lat. *digitus, i, m* = gr. *dactylus, i, m* „deget” «doigt» et lat. *manus, us, f* = gr. *cheir, kheir, -ros*, „mână” «main».

Les variantes latines *digitus, i, m* et *manus, us, f* ont formé la terminologie anatomique (il convient de remarquer que le latin a le statut de «langue de communication» par excellence aux leçons d'anatomie). Les variantes grecques *dactylus, i, m* „deget” «doigt» et *cheir, chir* „mână” «main» sont particulièrement des éléments de formation des termes complexes, utilisés de prédilection dans la terminologie clinique.

Les éléments savants *dactil(o)-, -dactil, -dactilie* et *cheir(o)-, -cheirie/chir(o)-, -chirie* forment la terminologie de plusieurs domaines d'activité, y compris le domaine médical. Les deux «cultismes» se sont manifestés comme affixoïdes (position primaire ou secondaire d'un terme composé).

L'existence des doublets gréco-latins favorise l'établissement de certaines relations sémantiques de synonymie entre des segments lexicaux spéciaux du mot formé par affixoïdes. Les doublets gréco-latins se sont fixés dans la période du bilinguisme gréco-latin, à partir du I^{er} siècle av. J.-Ch. Plusieurs mots d'origine grecque se sont tellement bien intégrés dans la structure de la langue latine, qu'ils ont pu servir de base de dérivation dans la composition, la conversion, etc. Cependant, l'origine grecque des affixoïdes n'est par une raison de les inscrire dans une relation de synonymie. Une autre particularité, donc, des mots affixoïdes est constituée par l'établissement de certaines relations sémantiques (synonymie, antonymie, homonymie, paronymie) entre certains segments du mot composé.

Mots-clés: langage médical, éléments savants, affixoïdes, doublets, gréco-latin

1. Introduction

Language, according to its three-dimensional aspect (word → object, word → word, word → *ego hic nunc*), is an intellectual reflection of the time spirit and existing reality. Language updating in different areas of supplementary (scientific) knowledge implies the existence of specialized language.

Specialized language is produced during concrete acts of communication and expresses the scientific (specialized) material. Medical language externalizes medical knowledge and uses specialized lexical units which transmit medical cognition. Medical specialized language consists of three levels:

1. *Non-terminological lexis* refers to the neutral verbal layer of a specialized language. Functionally homogenous words, emotionally neutral, which form the fundamental vocabulary of the language, enter this category.

2. *Scientific lexis common* to several domains of activity.

3. *Medical terminological lexis*. These are autonomous units of Greek-Latin origin, (*ligamentum, musculus* etc.) and *non-autonomous units of Greek-Latin origin, which initially had a full lexical meaning and in statu praesenti are elements that form a new lexical unit* (*hepat(o)-* ‘liver’ (< Gr. *hepar, -atos*) + *-grafie* ‘writing’, “which

writes, registers” (< Gr. *graphein* ‘to write’) = *hepatographie* “recording the image of the liver on the Roentgen film”).

2. Autonomous and non-autonomous scholarly units as a core of medical terminological lexis

In 1956, J. Dubois and G. Janannon attested the use of 150 scholarly items in the French language¹. In 1970, Florica Ciobanu and Finuța Hassan included 834 “euphuisms” in *The glossary of composite elements*². In 1975, Gr. Cincilei referred to 660 elements in French and 700 in Romanian³. Henri Cotte refers to a number “a little bit higher than 2700 units” in *Dictionnaire de structures du vocabulaire savant: Eléments et modèle de formation*⁴. Florin Marcu explains 1401 “euphuisms” and 585 of their versions in the *Actualized dictionary of neologisms*⁵.

Currently, according to R. Tessier and Roventța-Frumușani, a “new ecological paradigm”⁶ is circulating. It implies the passage from the reduction principle (investigating the internal structure) to the global one (the object of investigation constitutes the whole part).

It has already been demonstrated that there is an international general lexicon which consists of:

a) Independent and autonomous lexical units. “Euphuisms” are considered to be the main guaranty of the perpetuation of specialized languages.

b) Phonological, morphological, lexical rules, etc. used according to the informational demands.

Lexical units that are based on Greek and Latin elements integrate easily into Indo-European languages, and have the status of “internationalisms” which occupy an interlinguistic position. Any language, which has borrowings, is in the position to offer new linguistic forms to the given notion. Massive borrowings confirm once again the viability of the Romanian language lexical system and its open character. The monograph of Academician Nicolae Corlăteanu, *Linguistic incorporation in European realities*, tells us that “the admission of neologisms in our language, as in any other language, is not done mechanically or at random from any etymological source. They are required to be adapted to notional, phonetic and phonological, morphological and derivative, syntactic, stylistic, lexical and phraseological norms of the borrowing language”⁷.

In this way, new terminological units may be (or may not be) classified as lexical neologisms. Therefore their further study should be done from the morphological point of view which will take into account: the mechanism of formation (root, prefix, suffix), the type of formation, empirical description of the items (synchronic aspect/functional system; diachronic aspect/historical plan etc.). Such an analysis will help to identify the regularities (with the possible exceptions) and to put forward hypotheses on the mechanisms of terms formation, which is a timely matter for the investigation of terminology.

Infiltrated in the general lexicon, autonomous lexical units of Greek and Latin

¹ Jean Dubois and Guy Janannon, 1956, p. 10-13.

² Florica Ciobanu and Finuța Hassan, 1970, p. 243-260.

³ Gr. Cincilei, 1975, p. 112.

⁴ Henri Cottez, 1980, p. 4, 9.

⁵ Florin Marcu, 2013, p. 5.

⁶ Daniela Roventța-Frumușani, 1999, p. 7-12.

⁷ Nicolae Corlăteanu, 2001, p. 7, 13.

origin have the status of affixoids (elements of composition that originate from autosemantic units, which have an intermediate position between word and affix; the status that allows them to benefit from their nominal and structural characteristics).

At various levels of analysis, medical language (especially medical terminology lexis) is attested to:

- a) Morphological level: the presence of affixoids;
- b) Lexical level: the existence of multi-lexemic words (formed by affixoids);
- c) Semantic level: semantic polyvalence of affixoids in various medical disciplines and subdisciplines.

Medical terms have formed their meanings throughout the history. They reflect the philosophy and wisdom gathered by mankind in the effort to understand the universe, which, in turn, determined the concept of life and death. The terms formed from the “euphuisms” of Greek and Latin origin are the evidence of the fact that “the legacy of the Greco-Roman world is the cradle of European spirituality and of modern thinking in general ...”⁸.

3. Doublets Lat. *digitus*, i, m = Gr. *dactylus*, i, m ‘finger’ and Lat. *manus*, us, f = Gr. *cheir*, *kheir*, -ros ‘hand’ in medical language

To see the functioning of the above mentioned approach, I propose to analyze the doublets of Lat. *digitus*, i, m = Gr. *dactylus*, i, m ‘finger’ and Lat. *manus*, us, f = Gr. *cheir*, *kheir*, -ros ‘hand’.

The Latin variants *digitus*, i, m and *manus*, us, f formed the anatomical terminology (it should be noticed that Latin has the status of “language of communication” during anatomy classes in the process of acquiring medical knowledge) and entered the basic vocabulary of the Romanian language: “...cu mâna cu cinci degete cu unghii... mânule omului”⁹, “mânuli”, “degetul arătătoriu”, “scadere de degete”¹⁰, etc.

The hand is a royal sign, an instrument of power and a symbol of domination. The hand and fingers are related to knowledge, ability to do “things”. It is the symbol of power and dignity.

The Greek variants *dactylus*, i, m ‘finger’ and *cheir*, *chir* ‘hand’ form elements of complex terms used mainly in clinical terminology.

Cheir(o)-, *-cheirie* / *chir(o)*-, *-chirie* ‘hand’ (< Fr. *cheir(o)*-, *-cheirie*, *chir(o)*-, *-chirie*, cf. Gr. *kheir*, -ros)

Dactil(o) -, *-dactil*, *-dactilie* ‘finger’ (cf. Fr. *dactyl(o)*-, *-dactyle*, *-dactylie*, cf. Lat. *Dactylus* cf. Gr. *daktylos*)

Etymology. It is considered that the meaning of the “euphuisms” *cheir(o)*-, *-cheirie* / *chir(o)*-, *-chirie* is linked to an arrow, and reminds us the name of Chiron, Sagittarius, whose ideogram ‘arrow’ comes from the word ‘hand’¹¹.

Chiron was a Thessalian god of healing, but in later Greek mythology, he survived as one of the Centaurs. When Chiron was born half-horse and half-man (or centaur), Philyra was so ashamed that she abandoned him in a cave. It is considered to be the first psychological trauma in mythology, Chiron’s wound being well-known.

⁸ Matei, 1993, p. 7-8.

⁹ Cantemir, 1987, p. 60.

¹⁰ *Letopiseștele Țării Moldovei*, p. 44, 327, 235.

¹¹ Chevalier, 1995, p. 56.

Chiron learned the art of music and naturopathic and homeopathic healing; he became a master in the art of war by developing fighting skills and practicing archery during hunting. Facing difficult challenges, each time he exceeded the limits imposed by his condition of being and achieved great wisdom in many areas of life¹².

It is believed that the following terms are derived from the name Chiron *chirurg*, *chirurgie* (*surgeon*, *surgery*), from the Latin *chirurgiae* which means ‘laboring hand’ < Latin *chirurgia* < Greek *χειρουργία* (*cheirurgia*) consisting of *χείρ* (*cheira* ‘hand’) + *ἔργον* (*ergon* ‘work’), and which might be translated as the practice of hands usage. In medicine the word ‘surgeon’ means physician who treats ‘with the hands’ and ‘surgery’, a medical specialty where diseases are treated ‘with the hands’.

The scholarly element *dactil(o)-*, *-dactil*, *-dactilie*, also refers to ancient mythology. Dactyls Δάκτυλοι, five in number, are considered to be demonic creatures who lived on the mountain Ida in Phrygia (Crete, Asia Minor) during the cult of Reia-Kibela. It is believed that Dactyls discovered iron manufacturing, as their names indicate - *Kelimys* (from ‘to melt’), *Damnamenei* (from ‘to tame’) and *Akmon* (the ‘anvil’ Strab. X 3, 473) etc. who are also considered to be the organizers of Elide Olympics (Paus. V 7, 6 след.). The status of the autonomous lexeme is used in modern prosody. Being taken from Greek and Latin the word *dactil* in the semantics of poetry means composed of three syllables, the first long and the other two short.

4. Scholarly elements *dactil(o)-*, *-dactil*, *-dactilie* and *cheir(o)-*, *-cheirie* / *chir(o)-*, *-chirie* as formants of compound terms

The scholarly elements *dactil(o)-*, *-dactil*, *-dactilie* and *cheir(o)-*, *-cheirie* / *chir(o)-*, *-chirie* form the terminology for several areas of activity, including the medical one. Both “euphuisms” are affixoids (primary or secondary position within a compound term). *Actualized Dictionary of Neologisms* attests 22 terms containing the prefixoid *dactil(o)-*, among which:

dactil(o)-, the primary meaning ‘finger’ - *dactiloplastie* ‘plastic surgery operation to restore the damaged fingertips’, *dactilomegalie* ‘fingers hypertrophy’ etc.; in medicine - 5 terms;

*dactil(o)-*¹, ennobled meaning ‘signs with fingers’, ‘keyboards devices’ - *dactilofazie* = *dactilogie* ‘communication between deaf people, consisting of conventional signs made with the fingers’ in defectological medicine - 3 terms;

*dactil(o)-*², ennobled meaning ‘fingerprint’ - *dactilogram* etc.; in jurisprudence - 3 terms;

*dactil(o)-*³, ennobled meaning ‘typewriter’ - *dactilograf* etc., in secretarial work - 6 terms;

*dactil(o)-*⁴, ennobled meaning ‘hand’ - *dactilomantie* etc., in palmistry – 1 term.

The interdisciplinary use of affixoids indicates the availability to cover the informational gap by semantic incorporations, which will ultimately generate the changes of concept.

There were attested eight terms in which the element has the status of suffixoid and it maintains the primary meaning ‘finger, referring to finger/fingers’ – *anhilodactilie* ‘deformity by pathological suture of fingers’, *anizodactilie* ‘unequal fingers’, *brahidactilie* ‘congenital malformation characterized by shortness of fingers’.

For the second element *cheir(o)-cheirie/chir(o)-*, *-chirie* the GDN attested 18

¹² Balaci, 1992.

terms for the first position of the term, of which 5, with the meaning of “hand”, are used in medicine: *cheiralgie* “syndrome characterized by pain in the hands”, *cheirospasm* “convulsive movement of the hand”, etc.

The ennoblement of the sense is registered either in the “euphuisms” used in medical subfields or in other areas of activity:

cheir(o)-/chir(o)-¹ ‘finger and hand’ – *cheromegalie* “hypertrophy of the fingers and hands”, in medicine; *cheironomie* “a kind of choir conducting carried by the movements of hands and fingers”, in church music etc. - 5 terms;

cheir(o)-/chir(o)-² ‘thumb’ – *cheroplastie* “surgical reconstruction of the destroyed thumb”, in medicine – 1 term;

cheir(o)-/chir(o)-³ ‘palm’ – *chiromant* “palmist” - 2 terms;

cheir(o) -/chir(o)-⁴ ‘written’ – *cheirofobie* “pathological fear, phobia of writing”, in medicine – 2 terms;

cheir(o)-/chir(o)-⁵ ‘signature’ - *chirograf* “document under private signature”; *chirografar* “(person) creditor who holds a personal right on an act under private signature”, in law – 2 terms.

cheir(o)-/chir(o)-⁶ ‘wings’ - *cheiropter* “order of mammals with membranous wings”, in biology – 1 term.

There are cases of synonymous items: *chiromanție* = *dactilomanție*, both have the meaning of “palm”.

A distinction of scholarly elements is the conjunctive availability: terms consisting of 2, 3, 4 and even 5 lexical units (autonomous and non-autonomous) *angio + dia + termo + ciclo + punctura* “cyclic puncture blood vessels through heating”, etc.

The language is not composed of simple words, but of the meanings that are stored in these words. The limits of words are, in fact, the limits of their meanings.

The semantic limit of the words composed by affixoids depends directly on the number of the affixoids of which they are formed. The attachment of a new affixoid creates a new semantic limitation, completing the meaning of the whole word:

1. *Chiralgie* (*kir-* < *Gr. kheir* ‘hand’ + *-algie* < *Gr. algos* ‘pain’) “pain in the extremities of the hands”.

2. *Chiropodalgie* (*kir-* < *Gr. kheir* ‘hand’ + *-pod-* < *Gr. pous, podos* ‘foot’ + *-algie*, *Gr. algos* ‘pain’) “pain in the extremities of the hands and feet”.

3. *Chirobrahialgie* (*kir-* < *Gr. kheir* ‘hand’ + *-brah-* < *Gr. brakhion* ‘arm’ + *-algie* < *Gr. algos* ‘pain’) “pain in the hands and arms”.

Each segment offers new lexical semantic nuances, and the word formed by the affixoid conjunction, is actually the expression of two tendencies: a) subtlety, concretization of certain entities of relationships; b) verbal economy which dictates the shortened form of the term.

5. Semantic relations

The existence of Latin-Greek doublets favours the establishment of the same semantic relation of synonymy between separate lexical segments of the word formed by affixoids. Greek-Latin doublets were formed during the Greek-Latin bilingualism starting with the 1st cent. BC¹³. Many words of Greek origin were so well integrated into the structure of the Latin language that they could serve as the basis for derivation in compounding, conversions etc. However, the Greek origin of affixoids does not

¹³ Banay, 1948, p. 118.

mean that they cannot share synonymy relations. Another feature of the words formed by affixoids is to establish semantic relations (synonymy, antonymy, homonymy, paronymy) among certain segments of a compound word.

6. Synonymy relations:

a) Synonymy relations in the first word element: *grafofobie* = *cheirofobie* “pathological fear, phobia of writing”.

Grafofobie (< Gr. *grafien* ‘write’ + < Gr. *Phobos*, ‘fear’, ‘phobia’) = *cheirofobie* (< Gr. *kheir*, -ros ‘hand’ + < Gr. *Phobos* ‘fear’, ‘phobia’)

b) Synonymy relations in the second word element: *dactilologie* = *dactilofazie* “means the agreement (between deaf people) by conventional signs made with the fingers”.

Dactilologie (< Gr. *daktylos* ‘finger’ + < Gr. *logos* ‘speech’) = *dactilofazie* (< Gr. *daktylos*, ‘finger’ + < Gr. *phasis* ‘speaking’)

7. Antonymy relations:

Antonymy relations in the first word element: *microdactilie* (< Gr. *micros* ‘small’ + < Gr. *daktylos* ‘finger’) “formation characterized by insufficient fingers development” ≠ *macrodactilie* (< Gr. *makros* ‘high or very high’ + < Gr. *daktylos* ‘finger’) “exaggerated development of fingers”.

8. Homonymy relations:

Homonymic variants related to invariance: *dactilo-* < Gr. *daktylos* ‘finger’: *dactil(o)-*¹ ‘signs with the fingers’, ‘keyboard devices’; *dactil(o)-*² ‘fingerprint’; *dactil(o)-*³, ennobled meaning ‘typewriter’; *dactil(o)-*⁴, ennobled meaning ‘palm’.

9. Paronymy relations:

Among the analyzed scholarly elements there are some paronymy relations:

a) paronymy relations attested in scholarly elements *cheir(o)-*, *-cheirie* / *chir(o)*, *-chirie*, ‘hand’.

In medical terminology, the term *chier(o)-* has a special use. It preserved the primary meaning of the word ‘hand’: *cheirospasm* “convulsive movement of the hand” etc. The second meaning of *cheiro(o)-* refers to the ennobled sense of the term: *chiroman*, *chirograf* ‘palmist’ registered in other different fields;

b) paronymy relations attested in other scholarly elements:

Chero- ‘joy’ <http://www.webdex.ro/online/dictionar/voio%C8%99ie%E2%80%9D> (< Gr. *kairein* ‘to cheer’)

Cheir(o)- ‘hand’ (< Gr. *kheir*, -ros)

Hiero- ‘saint’, ‘sacred’ (< Gr. *hieros*)

Cheirofobie (*cheiro-* < Gr. *kheir*, -ros ‘hand’ + *-fobie* < Gr. *Phobos* ‘fear’, ‘phobia’) – “phobia of writing”.

Cherofobie (*chero-* < Gr. *kairen* ‘to cheer’ + *-fobie* < Gr. *Phobo* ‘fear’, ‘phobia’) – “pathologic aversion to joy, good mood”.

There exists a paronymic relationship with the item *dactilio-* ‘ring, stone’ from the Greek *Dactylios*. However, bearing in mind the mythological references, we can submit the hypothesis that both elements have a common etymology and originate from *Δάκτυλοι*, especially because they were craftsmen in mineral processing and the ring is the jewellery that is worn on the finger. The depiction of the synonymic relationship between the words *dactilomantie* and *dactiliomantie* which mean “the art of fortune telling” only confirms our hypothesis.

As a formant element the term has carried this status ever since ancient times,

like in *dactylīothēca* ‘box, coffer for keeping rings or precious stones.’ (< Gr. *daktylios* ‘ring’ + < Gr. *theke* ‘shelf’¹⁴).

10. Conclusions

Lexical neological formations (formed on the basis of Greek and Latin terms) that were introduced in medical language correspond to universal dimensions and define the specialized knowledge attained through additional learning of the reality (field of medicine). Attributed to the morphological system, “euphuisms” hold the status of affixoids. The inventory of affixoids is included in an international translanguing and transdisciplinary lexicon. As for affixoid composition, it follows the Greek model of word formation, which, if revived, is “easily imitated and used in practice”, and “seems to have no limits”¹⁵.

Terminological neologisms (formed on the basis of affixoids), once used in a specific language, become part of the national terminology and receive the national status keeping at the same time their international status. It facilitates the unification, planification and standardization of international terminology. Investigating the historical formation of medical terms is quite a difficult task, but it gives us the advantage of understanding and explaining the formation and evaluation of medical language.

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¹⁴ Любкер, 2007.

¹⁵ Iordan, 1964, p. 420- 421.

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