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Interactions between common and specialised language and translation problems of the new scientific terms (with examples from German, English and Greek)

Language appeared when man became conscious of his surrounding space, his position within it and started intervening consciously in natural space in order to produce the necessary means for his survival and the perpetuation of his species. The transformation of natural space into economic space due to man's conscious intervention, creates time as a historic magnitude "being the essence of the evolutionary process of the pair superstructure–infrastructure, namely of Geographic Spatial evolutionary process", time which is named "Geographical Time"[1]; the result of this process is the appearance of civilisation, culture and language, the latter being a process of the conscious that compresses human experience, whose fundamental aim is communication.

The appearance of civilisation created labour division, the condition sine qua non for the achievement of harmonic relations within the community and the survival of the tribe. Labour division gave rise to the first relations of dependence a) within the community (different occupations–professions, hierarchy etc.) and b) between two or more communities (need to exchange products, know–how, methods etc.). Due to the appearance and development of various occupations–professions i) methods, ii) means for their application, iii) relations between people practising the same profession, iv) relations between different professions for the purpose of achieving a beneficial result and v) relations between professionals and society were developed.

Briefly, the social–economic background for the consequent development of specialised language had been developed, which can be defined as a descriptive system of non–linguistic facts, by contrast with common language, which can be defined as a common system of communication within a certain language community with predetermined rules (Stolze 1992:98). Common language is also the way of everyday communication and an informal way of expression (Fleischer 1982:225). As a means of everyday communication, common language is rather emotional (Fleischer 1982:225) and guarantees its speaker a certain degree of freedom (Braun 1979:28) as well as the possibility to choose among a large number of different registers.

LSP is the language of specialised texts, the language that describes specific, non–linguistic facts. Nevertheless, when we talk about LSP we do not refer to a homogeneous total, autonomous and independent from common language, as it was believed in the past, when research on specialised language was focusing on the separate elements of the text (lexeme, syntagm, sentence) and we were talking about "correspondence" between the terms of the source–language with those of the target–language.[2] Reality has proved that specialised texts must be analysed within their context and in relation to their syntactic and lexicological particularities. Thus, one characteristic of LSP is **terminology** and the basic concern of the research in LSP remains the finding of terminology and its standardisation with the aid of the relevant databases. When we talk about terminology we mean the specific vocabulary of every LSP that serves its needs. Yet, we must not consider this specific vocabulary as fixed, created once and for all. On the contrary, the creation of terms is a dynamic–evolutionary situation, influenced by the progress and evolution of science (e.g. genetics), the appearance of new scientific fields, e.g. mechatronics (mechanics+electronics) and the need to describe the new scientific methods and discoveries (e.g. "cloning" in genetics). Below, we shall examine the creation of terminology as well as other characteristics of LSP.

Characteristics of LSP

A. *Terminology*

Generally, there are two ways of creating terminology. The first relates to already existing terms that acquire new meaning while the second relates to the creation of new terms on lexical level.

Thus, as far as the first way is concerned, we can distinguish two categories:

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[1] I.Th. Mazis, "Geographic Time and Economic Space" (in Greek), *Scientific Yearbook of the University of Piraeus, SPOUDAI*, Piraeus 1988, pp. 777–779.
[2] Arntz, in: Snell–Hornby, 1986, p. 284.

a) Metaphor: It is the semantic transformation of a term from the common language to different LSPs. As examples we can mention the English terms "interest" (which, in common language means the sense of curiosity about or concern with something or someone (in Greek: ενδιαφέρον), while in economics it means a charge for the use of credit or borrowed money (in Greek: τόκος)), "line" (which, in common language means a narrow continuous mark, as one made by pencil, pen or brush across a surface (in Greek: γραμμή), while in biology it means a cell culture derived from a single progenitor cell with a homogeneous genetic distribution (in Greek: σειρά)) and the German term "Auge" (which, in common language means eye (in Greek: μάτι), while in LSP it means hole (in Greek: οπή, θηλειά)).

b) Metonymy: It relates to the semantic replacement of proper nouns, such as "Watt", "Ampere", "Alzheimer", "Armstrong" etc.[3]

As to the creation of new terms on lexical level, we distinguish the following categories:

a) Loans: They mostly derive from the Anglo–American terminology (e.g. "input", "swap", "hardware" etc.). Still, in medicine, loans from the Greek and Latin language prevail though, during the last years, we have witnessed the appearance of Anglo–American terminology[4] (e.g. "SIDS" (Sudden Infant Death Syndrome), "bypass" etc.). Loans usually derive from common language (e.g. "restless legs", "full blown [AIDS]" etc.) though quite often we observe the opposite, i.e. common language borrows terms fromm the specialised one (e.g. "to switch", "combination", "reduction").[5]

b) Compound words: Their most frequent element is the noun, e.g. "cardholder", "Energietechnik", "microbiology" etc. Another important class of compound words are those deriving from formal amalgams of two words, such as "stagflation" (stagnation+inflation) in economics, "isotron" (isotope+electron) in physics, glocalisation (global+localisation) in sociology.

c) Derivatives: They are usually created from already existing words, the majority of which is combined with prefixes, e.g. "mega–project", "nanogram", "polymorph" and suffixes, e.g. "diptheritis", "cellulase", "bronchitis".

Another way, not thoroughly investigated yet, to create terminology is through the creation of **phraseologisms of LSP.** Initially the science of phraseologisms (frazeologija) was part of lexicology/lexicography. Vinogradov separated frazeologija from syntactics and lexicology establishing it as a distinct science in the 40s. Efforts to classify phraseologisms followed, e.g. on syntactic (Fleischer, Rothkegel, Fix, Burger, Reichstein), semantic (Burger, Fleischer) and pragmatic (Pilz, Coulmas) level. Nevertheless, although there are numerous studies investigating the phraseologisms in common language, [6] their research within the framework of LSP remains poor.

The features that characterise the phraseologisms of LSP are **syntactic and semantic stability** (the constituent elements of a phraseologism are unchanged or partially changed), **idiomaticity** (the meaning of the expression that does not depend on the meaning of its constituent elements),[7] **lexicalisation and reproduction** (reproduction of the phraseologisms and their storage as lexical units and, in the case of specialised texts, as terms) and **usual and constant use**. Examples of phraseologisms of LSP are the terms "Special Condition of Contract", "Accelerated Depreciation", "Lesser Offence", "Thin Layer Chromatography", "Bid Document", "Alternating Current", "Chief

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[3]We must however mention that some proper nouns undergo morphological transformation during their semantic replacement, e.g. "Torr" that derives from the name Torricelli, "Volt" from Volta etc.

[4]Michler/Benedum, 1972, VII.

[5]Pörksen goes so far as to express the view that the influence of specialised language on common language will lead to a mathematisation of common language with no historical dimension, no taste, no social or local commitment and with universality (Pörksen, 1988:109 ff.); in our opinion this is a fear rather than a potential reality, since, in order to reach such a nightmare, all cultures and differences must have been abolished before. We think that the historic and cultural subconscious cannot be eliminated by anyone and by no means.

[6]Friederich, Wolf, *Moderne deutsche Idiomatik. Systematisches Wörterbuch mit Definitionen und Beispielen*. München 1966; Fleischer, Wolfgang, *Phraseologie der deutschen Gegenwartssprache*, VEB Bibliographisches Institut Leipzig 1982; Pilz, Klaus Dieter, *Phraseologie. Versuch einer interdisziplinären Abgrenzung, Begriffsbestimmung und Systematisierung unter besonderer Berücksichtigung der deutschen Gegenwartssprache*, 2 Vols. Göppingen 1978; Demiri–Prodromidou, E., Nicolaidou–Nestora, D., Tryphona–Antonopoulou, N., *Dictionary of phraseologisms Greek–German/German–Greek* (in Greek), Thessaloniki 1983 and 1985; Duden, *Redewendungen und sprichwörtliche Redensarten*, Vol. 11, Mannheim–Wien–Zürich 1992, and others.

[7]Burger/Buhofer/Sialm 1982, 3.

Executive Officer" etc. In other words, any term consisting of two or more words and having all or the majority of the above features may be regarded as phraseologism of LSP.

B. *Connotation*

LSP is lacking in connotative, i.e. stylistic, regional, individual or emotional commitment. Thus, we read of a *fatal event* in English or of *abtöten* in German. Another example from German is: "*Die so entstehenden 'Überdosierungen' haben nicht selten den Tod des Drogenabhängigen zur Folge*".[8]

C. Denotation and meaning

Denotation has to do with referential preciseness (Stolze 1992:97) while, in some cases, denotation coincides with meaning. This is the case with context free terms such as "apomorphin", "semipolar", "antitussive" etc. This coincidence adds preciseness and translatability to these terms without the help of any context. Yet, in many cases, denotation and meaning do not coincide; this is the case with terms used in more than one scientific field, for reasons of economy. In this case, denotation acquires several meanings. As examples we can cite: "lesion" which, in medical texts means *injury, damage* and refers to body damage while in law texts it also means *injury, damage*, but it relates to the legal consequences of a physical injury; "inflation", the meaning of which is completely different in economics (in Greek: πληθωρισμός) and engineering (in Greek: φούσκωμα).

At this point we can refer to the following cases:

i) Two morphologically and semantically different terms from a source–language have the same morphological equivalent in the target–language, which is still semantically different, e.g. the English terms "roller" and "cylinder" are both translated as "κύλινδρος" in Greek; the semantic content of the Greek term depends on its context.

ii) Two morphologically different but semantically equivalent terms from a source–language have the same morphological and semantic equivalent in the target–language, e.g. the terms "chairman" (England) and "president" (USA) are both translated as "Πρόεδρος" in Greek, term that is semantically equivalent to both English terms.

iii) Two morphologically different but semantically equivalent terms are used alternatively in the same text, without previous notification of the writer that they are also semantically equivalent. As an example, we can mention the synonyms "Dextrose" and "Traubenzucker", "cancerous growth" and "carcinoma", "tuberculosis" and "Morbus Koch".

According to the above, we realise that it is impossible to examine LSP separated from its context. Consequently, LSP cannot be considered as a system of communication with predetermined rules, separate from that of common language. Let us think that, despite the fact that specialists and scientists create new terms trying to avoid common language since, according to Antos many expressions of common language exercise a potentially uncontrollable influence on the 'objective' methodology of scientific expression, an interference and even a threat (Antos 1996:28), they do not communicate through terminology; scientists communicate through specialised texts, which unavoidably use common language syntax, grammar and words. Thus, common language was, is and will be the vehicle of the notions and meanings of LSP. We thus conclude that common language is always present in specialised texts and cannot be replaced by non–common language and even by non–verbal signs. Scientists may use for example mathematical language but they still need a link to connect themselves and their science with reality, and this link will be the use of common language.

The difficulties of the translation of specialised texts

The existence of specialised vocabulary, as we mentioned above, may lead to the opinion that specialised texts are easier to translate than other kinds of texts, e.g. literature.[9] In our opinion, this could be true if specialised texts had no other characteristic beyond terminology, a statement that is far from reality as we proved. We must not forget that each specialised text is potentially a pragmatic text and, in this sense, it is the vehicle of a cultural reality. According to Nida, "[…] translators are beginning to pay greater attention to the relation between cultures, because the meaning of words and texts depends so largely on the corresponding cultures",[10] while, according to Reiß/Vermeer (1984)

[8]Example from: E. Haen/N. Wodarz (Klinik und Poliklinik für Psychiatrie und Psychotherapie der Universität Regensburg): Pharmakologie der Suchtstoffe, in: *Internist*, Juni 1999.

[9]Wilss, for instance, proposes a gradation in the degree of difficulty of the translation of a text where, at the bottom there is specialised translation, then the translation of literature and, at the top the translation of the Bible (Wilss 1997, pp. 197, 226f.).

[10]Eugene A. Nida, „Translating a Text with Long and Sensitive Tradition" in: *Translating Sensitive Texts: Linguistic Aspects* (ed. Karl Simms), Amsterdam–Atlanta 1997, p. 189.

translation is a interlinguistic and, at the same time, intercultural transfer. In addition, Vermeer declares that language is the expression of a specific culture.[11] According to Séguinot, "Translators are implicitly expected to understand the requirements of different markets, and this means that translators need to understand the cultures towards which they are translating".[12] Consequently, the translator of specialised texts is inevitably a link between two cultures. For example, the American terms "policy maker" and "think tank" have not any semantically equivalent term in Greek since, in Greece, there are not any similar groups with the same duties and responsibilities as in the USA. Greek scientists in the field of international relations or journalists either use the above terms in Latin characters or they try to reproduce their meaning with a relevant term, still quoting the American term in parenthesis.

A major translation problem, mainly as far as translation from English to Greek is concerned, relates to *loans* and *loan translation*. Loan examples from the English are the terms, *hardware, chip, leasing, hot dog, codon, software, alcohol, weekend, layout, keyboard, computer, project, soundtrack, briefing, meeting, manager, fast food* etc. Some of them may be considered either as (i) simple loans,[13] such as the terms *software, leasing* and *chip* or (ii), depending on the writer and the receiver of the texts, may be completely or partially adapted to the phonetic and writing norms of the Greek language (e.g. *λήζινγκ, σοφτγουερ, κομπιούτερ, πρότζεκτ, αλκοόλ* etc.). The problem in relation to loans is that, though in many cases there are equivalent Greek terms (e.g. the terms *meeting, briefing, codon, software, alkohol, computer* are translated as *συνάντηση* or *σύσκεψη, ενημέρωση, κωδικόνιο, λογισμικό, οινοπνευματώδες, ηλεκτρονικός υπολογιστής*), the users of these terms prefer to use the English term either in Latin characters or as in case (ii) above.

Examples of *loan translation* are e.g. the terms *pilot survey, plastic money, brain washing, gentlemen's agreement, greenhouse effect, working lunch*,[14] which have been transferred to Greek through word–for–word translation; they are terms that the Greek language community has accepted or, at least, tolerates,[15] in the beginning in the form of neologisms and, later, as part of the vocabulary of Greek language.

Although there are many scientists who consider *loan* and *loan translation* as bridges of communication between two languages (Mounin 1967:81) or, as far as loans are concerned, "an important source of enrichment of a language by another possessing the necessary means to denote new notions or things" (Charalambakis 1992:328) or an attractive element, the peculiarity of which interrupts the monotony of a sentence (Paepcke 1974:8), under the present circumstances of globalisation, the process of linguistic incorporation of foreign terms acquires qualitatively different dimensions. If we accept that "globalisation is a geographic phenomenon observed on international level which concerns processes of homogeneity on two levels of integration: i) on the level of trans–national (not international) economy and ii) on the level of culture",[16] then we must ask ourselves if any nation–state (in our case Greece) has the possibility to produce and disperse democratically the information/knowledge deriving from a pole of concentration of international power (USA) through a culturally clearly defined linguistic code.

The process of globalisation is inevitable. Still, since it is based on economic and cultural pillars, it must take into account a series of characteristics of the nation–states since, according to the proclamations of its partisans all over the world, it aims at international peace, prosperity and development. It is here where the role of translation as a geopolitical power redistributor and catalyst of acceleration of the international cultural osmotic process is revealed.[17] As far as cultural globalisation is concerned, translation functions as a means of transport of information, which has become a considerable power multiplier that, through the new technologies, puts the ability of the nation–state to resist through its paces without abolishing, yet, the principles of its ethnic–cultural

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[11]Hans J. Vermeer, *Aufsätze zur Translationstheorie*, Heidelberg 1983, p. 116.
[12]Séguinot 1996:6 in: David Katan, *Translating Cultures. An Introduction for Translators, Interpreters and Mediators*, St. Jerome Publishing, Manchester 1999, pp. 9–10.
[13]The term "simple loan" (Zitatwort, Fremdwort) is used by Koller (W. Koller, *Einführung in die Übersetzungswissenschaft*, 4. Aufl., Heidelberg 1992, p. 233).
[14]These examples have been taken from Chr. Charalambakis, *Modern Greek Word. Studies about language, literature and style* (in Greek), ed. Nepheli/Glossologia, Athens 1992, pp. 332–337.
[15]In the way described by Wilss (W. Wilss, *Übersetzungswissenschaft. Probleme und Methoden,* 1. Aufl., Stuttgart 1997b, p. 114).
[16]I.Th. Mazis, "Globalization and Culture: The Pair Knowledge–Power" (in Greek), in: *20th Educational Conference of Palso*, Athens 26 August 2000, p.1.
[17]Op. cit., p. 3.

existence. At this point we shall agree with Venuti's argument that translation "is particularly embarrassing to the major English–speaking countries […]. It calls attention to the questionable conditions of their hegemony, their own dependence on the domination of English […]. At the same time, the globalization of English, the emergence of a world market for English–language cultural products, ensures that translators don't merely communicate British and American values, but rather submit them to a local differentiation, an assimilation to the heterogeneity of a minor position".[18]

We speak of a globalisation where cultural integration is realised in favour of the pole of concentration of international power at the expense of the nation–state. This process is the phenomenon that sociology calls *McDonaldisation* defined as "the process by which the principles of the fast–food restaurant are coming to dominate more and more sectors of American society as well as the rest of the world". [19]

Consequently, the translator of specialised texts must face the different, partial translation problems under the focus of the above since a successful translation achieves its communicative purpose, which is dual: on the one hand, the information of the receiver of the translation and his participation in a different reality and, on the other, the creation of the prerequisites for a mild form of globalisation within the framework of the mutual understanding of peoples and cultures.

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[18]Lawrence Venuti, *The Scandals of Translation. Towards an ethics of difference,* Routledge, London–New York 1999, p. 159.

[19]George Ritzer 1993:1, in: David Katan, *Translating Cultures. An Introduction for Translators, Interpreters and Mediators*, St. Jerome Publishing, Manchester 1999, p. 21.