

THE LINGUISTIC DIMENSION OF TERMINOLOGY: PRINCIPLES AND METHODS OF TERM FORMATION

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Abstract

Terminology has a twofold meaning: 1. it is the discipline concerned with the principles and methods governing the study of concepts and their designations (terms, names, symbols) in any subject field, and the job of collecting, processing, and managing relevant data, and 2. the set of terms belonging to the special language of an individual subject field. In its study of concepts and their representations in special languages, terminology is multidisciplinary, since it borrows its fundamental tools and concepts from a number of disciplines (e.g. logic, ontology, linguistics, information science and other specific fields) and adapts them appropriately in order to cover particularities in its own area. The interdisciplinarity of terminology results from the multifaceted character of terminological units, as linguistic items (linguistics), as conceptual elements (logic, ontology, cognitive sciences) and as vehicles of communication in both scientific and generic language contexts. Accordingly, the theory of terminology can be identified as having three different dimensions: the cognitive, the linguistic, and the communicative dimension (Sager: 1990). The linguistic dimension of the theory of terminology can be detected mainly in the linguistic mechanisms that set the patterns for term formation and term forms.

In this paper, we will focus on the presentation of general linguistic principles concerning term formation, during *primary naming* of an original *concept* in a source language and *secondary term formation* in a target language. Special reference will be made to the application of these principles in the Greek language.

Linguistic aspects of term formation are of major interest to terminologists, terminographers and subject field specialists, but also to translators, interpreters and technical writers; especially when translators happen to work with less widely used languages such as Greek, where the lack of adequately developed reference tools such as specialized dictionaries and glossaries very often compels them to become neologists.

1. The multi-dimensional character of terminology

The term “*ορολογία*” (terminology)² has two meanings:

1. the **scientific field** pertaining to the study of relations between *concepts* and their *designations* (terms, names and symbols) and the formulation of principles and methods governing these relations in any given subject field; and the **task** of collecting, processing, managing and presenting terminological data in one or more languages, as well as
2. the **set of terms** belonging to the *special language* of a specific subject field.

Fundamental for the theory of terminology is the distinction between **objects**, i.e. entities in the external world, **concepts**, which are the units of knowledge that constitute the mental representations of objects, and **designations** of concepts, which can be **terms**, **names** and

¹ ELETO (Hellenic Society for Terminology) was founded in 1992 as a non-profit scientific association in the area of terminology with the following objectives: a) studying, developing and promoting Greek terminology, b) contributing to a continual and balanced development of the Greek language for the fulfilment of contemporary requirements, and c) promoting the role of the Greek language in international terminology.

² ELETO has proposed two different spellings in order to overcome the ambiguity of this term in Greek: *Ορολογία* when referring to the first meaning, that of the scientific field, and *ορολογία* when reference is made to its second meaning, i.e. the vocabulary of a specific subject field.

symbols. Concepts are further determined by means of the **relations** they have to other concepts, as well as by **definitions**, which constitute the descriptive, metalinguistic denotation of concepts.

Regardless of disagreements among researchers as to whether or not terminology is an autonomous academic field (cf. Cabré [1999]) or rather a set of methodological tools for processing terminological data (cf. Sager [2000], Dubuc [1985]), its interdisciplinary character is recognized by all. Not only because terminology is the intersection of various fields of knowledge, but mainly because it borrows the fundamental instruments and concepts of several different disciplines (e.g. logic, ontology, linguistics, information science, and others), adapting them accordingly in order to cover its own specific requirements. The relation of terminology to these disciplines results from the multi-dimensional character of terminological units as *linguistic entities* → *linguistics*, as *concept entities* → *ontology, cognitive sciences*, and as *communicative units* in the more restricted framework of **scientific & technical discourse**, but also in the wider context of general language.

Consequently, the theory of terminology is defined with relation to three different dimensions (Sager [1990: 13]):

1. the **cognitive** dimension, which examines the concept relations and thereby how the concepts constitute structured sets of knowledge units or **concept systems** in every area of human knowledge, as well as the representation of concepts by **definitions** and **terms**,
2. the **linguistic** dimension, which examines *existing linguistic forms* as well as *potential linguistic forms* that can be created in order to name new concepts, and
3. the **communicative** dimension, which examines the *use of terms* as a means of transferring knowledge to different categories of recipients in a variety of communicative situations and covers the activities of **compilation, processing** and **dissemination** of terminological data in the form of **specialized dictionaries, glossaries** or **terminological databases**, etc.³

Recognizing the multidimensional character of terminological entities (*concept* → *term* → *communication unit*) in the context of conveying **specialized knowledge** significantly influences the character of contemporary theory and practice of terminology and contributes to redefining the relationship between terminology and contemporary linguistics as well as technological and information sciences⁴. Some of the changes involved are the following:

- **Standardization**, commonly known from the technical and technological fields, has been extended to engage the theory of terminology⁵ as well, providing methodological tools for the systematization of terminology work and communication, in the context of terminological activities.

³ According to Rey (1995), the cognitive dimension of terminology results from the cognitive nature of its own subject of study, and is thus not a particularity of its theory. What is interesting about terminology is that it succeeds in linking the *cognitive dimension* with *social needs* via *linguistic forms*, thus contributing to the optimization of communication between experts and mediators who transfer knowledge, such as terminologists, translators, documentalists, etc., and the general public.

⁴ Despite the fact that in general, terminological practice continues to be defined and enriched by the experience and activities of subject field specialists (i.e. technologists and scientists), the theory of terminology seems to incorporate more easily the methodological tools of contemporary linguistics as well as of information science and technology. Naturally, the modernization of terminological work taking place to a larger or smaller extent according to country or subject field also depends directly on more general, pragmatic factors, such as the recognition of the significance of terminology on the part of national and social communities, the national linguistic aims propagated via the creation and dissemination of national terminology, recognizing and establishing terminology as a subject to be taught on an academic level, etc.

⁵ This role has been taken on by Technical Committee TC 37 of ISO (International Organization for Standardization).

- The cognitive dimension of terminology, i.e. the organization of knowledge within a field of knowledge, is not regarded as an end in itself reserved for scientists or subject field specialists, but rather as a means contributing to precision and systematicness on transferring knowledge in various pragmatic situations.
- The linguistic dimension of terminological entities is not an exclusive subject of study and proposals of subject field specialists, but also of **terminologists**, who are recognized in their dual capacity of **language consultant** and terminological data **documentalist**.
- The reduction of differences between terminology and linguistics can be summarized on the one hand in the **prescriptive approach** of terminology with respect to selecting one single correct linguistic form to represent a concept, and on the other hand in the **descriptive approach** of linguistics with regard to the identification of all possible linguistic variants of a single linguistic form. The current trend in the theory of terminology allows for the existence of synonymic expressions and term variations, thus rejecting its narrow prescriptive attitude of the past, which insisted on connecting one concept to one term. It has now been recognized that one concept – above and beyond the narrow context of standardization – can correspond to a variety of linguistic representations, which can serve various communication needs. Terminology today has adopted an approach to collecting lexical data that is based on **corpora**. According to Sager [1990:58], “by being studied in the context of communicative situations, terms are no longer seen as separate items in dictionaries or part of a semi-artificial language deliberately devoid of any of the functions of other functional items. The increasing tendency to analyse terminology in its communicative, i.e. linguistic context, leads to a number of new theoretical assumptions and also to new methods of compilation and representation.”

The linguistic dimension of the theory of terminology lies in the principles governing the connection between a term and a concept⁶ and, mainly, in the linguistic mechanisms of the term itself as a lexical unit.

The linguistic aspects of term formation are of interest not only to terminology specialists, terminologists and subject field specialists, but also to translators and interpreters, in particular when the latter, due to a lack of dictionaries and glossaries in **less widely used languages**, are obliged to go beyond the call of duty as a translator and become **namers** and/or **neologists**.

2. Pragmatic aspects in term formation

Term formation can be carried out in a specific environment, e.g. in a research laboratory, in a manufacturing company, at a conference, in a small enterprise, etc. Usually, term formation is influenced by the subject field in which it is carried out, by the nature of the persons involved in the **process of designation**⁷, by the stimulus causing the term formation, and of course, by the phonological, morpho-syntactical and lexical structures of the language in which the new concept finds its linguistic expression.

According to Sager [1990: 80], two types of term formation can be distinguished in relation to pragmatic circumstances of their creation: **primary term formation** and **secondary term formation**. *Primary creation* accompanies the formation of a concept and is monolingual. *Secondary formation* occurs when a new term is created for an existing concept in the following two cases:

⁶ This linkage forms the interface between knowledge and language, and therefore, in methodological terms, it cannot be considered to be purely linguistic.

⁷ The term **designation** has two meanings: it is the *term, name* or *symbol* for a concept as well as the action of *forming* the *term, name* or *symbol* for a concept, carried out by a person called a **namer** or **denominator**.

1. as a result of the revision of a term in the framework of a single monolingual community, e.g. creation of a term in the context of a normative document (*standard*) or **rebaptism**⁸ of a term as a result of the discovery of a new entity in the same subject field (e.g. *telephone* is now referred to as *fixed telephone* following the discovery of the *mobile telephone*).
2. as a result of transferring knowledge to another linguistic community in which a corresponding term needs to be created. This instance also applies to the creation of terms in the Greek language.

Primary and secondary term creation are governed by different motives and show the following differences:

- In the case of *primary term formation* of a term there is no pre-existing linguistic entity, even though appropriate term formation rules exist. With *secondary term formation*, there is always an already existing term, which is the term of the **source language**, and which can serve as the basis for secondary formation. In order to reduce the differences between primary and secondary term formation, Valeontis formulated “**the analogue rule**” in 1997, which will be discussed in more detail in *section 6* of this presentation.
- Primary formation is quite often spontaneous, whereas secondary formation is more frequently subject to rules and can be planned.

4. Standardization and term formation

The objects and methodological tools involved in any specific subject field determine which concepts it uses and which designations are required in order to represent these concepts. In all areas of science and technology, there is a need for new terms in order to name new objects, new parts of objects or new procedures.

In the context of ISO/TC 37, standards have been prepared intended to provide guidance for the procedure of term formation⁹. The specifications included in these standards recommend quite a wide framework of guidelines, which appear to have interlingual validity, at least for the Indo-European languages, even though they are based primarily on the structures of the English language. In the following sections, 4.1 & 4.2, we analyze the principles for concept – term connection as well as term formation methods, providing examples in English and Greek.

4.1. Principles for concept – term connection

Terms are the linguistic representation of concepts. However, contrary to the situation prevailing in general language, where the arbitrariness¹⁰ of the linguistic sign is fully acceptable, special languages endeavor to make the **process of designation** systematic, based on certain specified linguistic rules, so that terms reflect the concept characteristics they refer to as precisely as possible. The aim of the systematization of these principles is to achieve **transparency** and **consistency** in linguistic representation of knowledge. The following general linguistic schemes serve both of these principles:

1. Use of nouns derived from verbs with specific endings to designate concepts which mean procedures and methods, e.g. *slicing* (τεμαχιοποίηση), *recycling* (ανακύκλωση), *evaporation* (εξάτμιση), etc.

⁸ For a detailed description of the phenomenon of rebaptism in terminology, cf. Anastasiadi-Symeonidi (2001).

⁹ These can be found in: ISO 704: 2000, ISO 1087 1: 1999 and ISO 1087 2: 2001.

¹⁰ The term EN “arbitrariness” FR “arbitraire”, “was established in Saussure’s linguistic theory and refers to the *imotive relation*, i.e. to the inexistence of a physical connection between the signifier and the signified of the linguistic sign.

2. Use of nouns derived from adjectives, as opposed to adjectives more frequently occurring in general language, in order to designate properties, qualities and states, e.g. *ελαστικότητα* (*elasticity*), *αγωγιμότητα* (*conductivity*), *ρηχότητα* (*shallowness*), etc.
3. Use of identical endings when terms are formed to name new species or new parts in the same subject field: *hardware* (*υλισμικό*), *software* (*λογισμικό*), *shareware* (*μερισμικό*), *freeware* (*δωρισμικό*).
4. Use of *regural patterns* of *complex terms*, which reflect the hierarchical relations between concepts. An example from the language of construction: the terms *ανυψούμενες γέφυρες* (*lift bridges*), *περιστρεφόμενες γέφυρες* (*swing bridges*) and *πτυσσόμενες γέφυρες* (*folding bridges*) all designate types of *movable bridges* (*κινητές γέφυρες*).

Other more general recommendations which should be observed when connecting concepts to terms are specified in ISO 704:2000 as follows:

- **Linguistic appropriateness:** Proposed terms should follow familiar and established patterns of meaning which are in use, e.g. the term *ατομική ενέργεια* (*atomic energy*) is confusing because it implies that this is energy produced by atoms, as opposed to the term *πυρηνική ενέργεια* (*nuclear energy*) which is semantically and scientifically more precise.
- **Linguistic economy:** Terms should be *concise*, in order to facilitate communication in situations which are not purely scientific, e.g. *term bank* (*τράπεζα όρων*) as opposed to the more lengthy *terminological data bank* (*τράπεζα ορολογικών δεδομένων*).
- **Derivability:** Term formations allowing for potential *derivatives*, should be chosen according to what is possible in a given language, e.g. in Greek telecommunications terminology, the choice of the term *δυφίο* as an equivalent of the English term *bit* allowed for the systematic formation of some hundreds of *complex terms*, such as *δυφιακό σφάλμα* (*bit error*), *8-δυφιακή κωδίκευση* (*8-bit coding*), etc.

4.2. Methods of term formation

The following term formation mechanisms applied in the English language are recognized, and are apt to be applied in other languages as well:

1. creating new forms
2. using existing forms, and
3. translingual borrowing.

4.2.1. Creating new forms

New forms are new lexical entities that did not exist before. Some of the mechanisms which can be used are the following:

1. **Derivation:** The process of derivation is the formation of a new term by adding one or more *affixes* to a *root* or to a *word*, e.g.

English:

phosphor + ous = **phosphorous**, co- + education- + al = **co-educational**,

de- + toxi(n) + fi + -cation = **detoxification**

Greek:

αγωγιμό(ς) + -τητα = **αγωγιμότητα**, αριθμ(ός) + -ικός = **αριθμικός**,

πλήμν(η) + -αίος = **πλημναίος**

2. **Compounding:** The process of compounding is a formation effected by combining existing words or lexical elements, leading to a new form. *Compounds* can be

complex terms, phrases or blends. In English, the roots or words making up a *complex term* or *phrase* are joined by a hyphen, or by *fusing*, or they are cited without any indication of joining between them, e.g.

English:

complex terms (hyphen): **composer-conductor, high-definition television**
(fusion): **downsizing, outflow**
(no join): **member country, information highway**

blend¹¹: **paraplegic + Olympics = Paralympics,**
biological + electronic = bionic,
education + entertainment = edutainment,
cybernetics + space = cyberspace

Greek:

complex terms (hyphen): **λέξη-κλειδί, διεργασία εισόδου-εξόδου**
(fusion): **οκταδύφιος αριθμός, απορρόφηση**
(no join): **κράτος μέλος, σημείο λήψης, φωτεινή πηγή**

blend: **Προγνωστικά + Ποδοσφαίρου = Προπό,**
ευρωπαϊκό + κοινοβούλιο = ευρωκοινοβούλιο

3. **Abbreviated Forms**¹²: On the one hand, shortening serves the purpose of creating *more concise forms*, especially for frequently used terms, while on the other hand creating names that are easy to remember for lengthy terms which are not clearly recognizable as terminological units. The following types of abbreviated forms can be distinguished:

- **Short form:** The short form is an abbreviated form of a complex term or name of considerable length in words. It uses fewer words in order to designate the same concept, e.g.

English:

full form: *Court of Justice of the European Communities*
short form: *Court*

Greek:

full form: *Δικαστήριο των Ευρωπαϊκών Κοινοτήτων*
short form: *Ευρωπαϊκό Δικαστήριο, Δικαστήριο*

- **Abbreviation:** Created by omitting words or parts of the words of which a term consists, e.g.

English:

full form: *page, et cetera*
abbreviation: *p., etc.*

Greek:

full form: *σελίδα, και τα λοιπά*
abbreviation: *σ., κτλ.*

- **Clipped form:** A clipped term is formed by truncating the front, middle or back portion of a single-word term, e.g.

¹¹ Blends are formed by means of two consecutive processes: first by *clipping* and subsequently by *compounding*. The disadvantage of blends is that they obstruct transparent and unambiguous access to the characteristics of the concept. While blends are quite frequent in English, the same is not true of the Greek language, which has a substantially lower number of blends; in our opinion, this is because in English, blends are usually created during the primary, i.e. the more spontaneous, phase of term formation, whereas in Greek the term formation is more prepared, being effected on a secondary level, when an ad hoc effort to avoid this weakness can be observed.

¹² For a detailed description of abbreviated forms in Greek, cf. Valeontis [2003].

English:

full form: *parachute, influenza, prefabricated house*
 clipped form: *chute, flu, prefab*

Greek:

full form: *προκατασκευασμένος*
 clipped form: *προκάτ*

- **Initialism:** Initialisms are formed from the first letters of each of the elements of a complex term or name. They are always pronounced letter by letter, e.g.

English:

full form: *United Nations, personal computer*
 initialism: *U.N., PC*

Greek:

full form: *Κομμουνιστικό Κόμμα Ελλάδας, Ανώνυμος Εταιρεία*
 initialism: *ΚΚΕ, Α.Ε.*

- **Acronym:** Acronyms are formed by combining the initial letters or syllables of all or several of the elements of a complex term or name. Acronyms are always pronounced syllabically just like regular words, e.g.

English:

full form: *light amplification by stimulated emission of radiation*
 acronym: *laser*

Greek:

full form: *Δημόσια Επιχείρηση Ηλεκτρισμού*
 acronym: *ΔΕΗ*

4.2.2. Existing forms

New terms can be formed by using existing forms by the following procedures:

1. **Conversion**¹³: This is the morphosyntactically differentiated usage of a single form, e.g. when an adjective is used as a noun (very common in Greek) or a noun as a verb (which never occurs in Greek, but is quite frequent in English), e.g.

English: *output (NOUN) → output (VERB), Google (Proper Name), google (VERB)*

Greek: *κάθετος (ADJ) → η κάθετος (NOUN), καλών (PART) → ο καλών (NOUN)*

2. **Terminologization:** This is a general procedure through which a word or phrase from general language is transformed into a term designating a concept in a special language, e.g.

English:

circuit
 ⟨general language⟩: *a line enclosing a surface*
 ⟨electrotechnology⟩: *an arrangement of devices or media through which electric current can flow*

Greek:

αποθήκευση
 ⟨general language⟩: *putting objects or materials in a storage area*
 ⟨computer science⟩: *recording an active document/file on a magnetic or other means (e.g. on a hard disk)*

3. **Transdisciplinary borrowing:** Transdisciplinary borrowing, also known as *internal borrowing*, refers to situations where a designation from one specific subject field is used in another one in order to represent a different concept. The characteristics

¹³ Conversion is referred to by Halliday & Martin [1993: 213] as grammatical transfer.

making up the *intension* of both concepts in both subject fields are often comparable and analogous, e.g.

| term | <chemistry> | <physics> | <physiology> |
|----------------------------|--|---|--|
| Greek αντίδραση | Interaction among two or more chemical elements or compounds, resulting in the creation of another chemical compound | Force of equal magnitude and opposite direction, developed due to action of any given force | Response of the body to a functional disorder or to an external stimulus |
| English reaction | | | |

4. **Semantic transfer within a special language:** This is the process by which an existing term in a special language is used in order to designate a different concept, by an analogous extension. The following can be regarded as modes of semantic transfer:

- *Simile*¹⁴, e.g. designation of a concept by analogy with a different more well-known or familiar concept, e.g. *L-shaped room*, a *rock-like substance*. In English, simile is usually expressed by means of suffixes such as *-like*, *-style*, *-type* etc., and in Greek in various ways, as shown in these examples:

English:<electron.>: *bus-type interface*, *Π network*
Greek: <electron.>: *διεπαφή τύπου αρτηρίας*, *δικτύωμα Π*

English:<telecom.>: *noise-like error*, *Ethernet-like interface*
Greek: <telecom.>: *θορυβοειδές σφάλμα*, *διεπαφή δίκην Έθερναι*

- **Synecdoche:** This is the most productive technique of utilizing existing forms, which is referred to as **systematic polysemy** in the contemporary linguistic theory of semantics: the whole is used for the part, and vice versa, the material for the object and vice versa, the building for the people who are in it, etc. Synecdoche can be regarded as a horizontal mechanism, influencing *terminologization* and *interdisciplinary borrowing*, e.g.

screen (οθόνη):

concrete: *the part of a computer on which information is displayed*
abstract: *the information displayed on this computer part*

4.2.3 Interlingual borrowing

Terms existing in one language can be introduced into another language by means of:

- **Direct borrowing:** This refers to the full adoption of terms from contemporary languages during the process of secondary term formation. Some loans of this type of borrowing prove successful and are fully incorporated into a foreign language. In other cases, the initial loan is replaced at a later stage by a form more compliant with the linguistic structures of the target language. For example, the new concept named with the neologism *FAX*, by clipping the complex term *facsimile transmission*, was expressed by means of more transparent terms in other languages, e.g. with the noun *télécopie* in French, and in Greek with the noun *τηλεομοιοτυπία*. The borrowed term can differ in the borrowing language from that in the source language, in terms of pronunciation, spelling and declination (cf. the indeclinable loan word *στούντιο* and the declinable one *μοντέλο*), e.g.

English: *reservoir* (from French), *diameter*, *spiral* (from Ancient Greek)

¹⁴ According to Sager [1990:71], comparisons via simile are generally used in the preliminary phase of the creation of a term and help to the stabilization of concepts.

Greek: *στούντιο* (ital. *studio*), *μοντέλο* (ital. *modello*).

- **Loan translation:** The morphological elements of a term or whole words from the *source language* are translated literally (“word for word”) in order to form a new term in the *target language*, e.g.

online (English) → *en ligne* (γαλλ.), *επί γραμμής, επιγραμμικός* (Greek)

civil engineer (English) → *πολιτικός μηχανικός* (ελλ).

5. The concept of neologism in English and Greek

Conception and introduction of a *new concept* into a subject field unavoidably involves its designation with a *new term*. Nonetheless, not every *new term* used in a language to designate a *new concept* can be considered a **neologism**.

According to the new definition by ISO/TC37 [1087-1:2000], the term *neologism* refers to “new terms coined for a given concept”, i.e. to newly coined *terms* either *simple terms* or *complex terms* – single-word or multiword – appearing for the first time in a language and having been created by means of linguistic mechanisms such as *derivation*, *compounding* or *blending*. Thus, as indicated by this new ISO/TC37 definition, terms that are the result of borrowing from foreign languages or other subject fields, or of terminologization of words from general language cannot be considered neologisms.

Our objections to the above definition are as follows: 1. We would not consider new multi-word terms as neologisms if they are the result of compounding single-word terms already existing in a language¹⁵. 2. In our opinion, the concept of neologism should not exclude borrowed linguistic elements from other languages, the combination of which with native linguistic elements has often led to the creation of many genuinely new words. Based on these objections, we suggest the following definition for *neologism*, in the context of terminology:

“A *neologism* is any *new single-word lexical unit* – simple or complex – which is formed and used for the first time in a language, and it can be the product of the combination either of existing linguistic elements from the same language or of linguistic elements from the same language together with borrowed elements from other languages or with older forms from the same language.”

This definition needs to be accompanied by the following explanatory notes:

- As far as the Greek language is concerned, neologisms are new words which have never before been used as they are in the history of the Greek language, or new words which have resulted from the combination of new and old linguistic elements from the Greek language.
- As far as the English language is concerned, single-word terms which are the result of a combination of linguistic elements borrowed from Latin and Ancient Greek, e.g. *television*, *telemeter*, *excavator*, *pylon* are considered neologisms. However, other loans such as the geometrical concepts *διάμετρος* (*diameter*), *εφαπτομένη* (*tangent*), *σπειροειδής* (*spiral*) and *κυκλικός* (*circular*), which are direct loans from Ancient Greek, are not regarded as neologisms.

¹⁵ We believe that this restriction should be deemed essential, in the interest of the theories both of terminology and linguistics; otherwise, i.e. if every new combination of single-word lexical units created to designate new concepts and new knowledge were referred to as a neologism, the terminology of any given subject field could only be considered as the totality of a succession of neologisms.

6. The “Analogue Rule” with regard to naming in Greek

As mentioned in *section 2* of this paper, the processes operated during *primary term formation* in a source language can provide *valuable guidance* for the creation of terms on a *secondary level*. According to Valeontis (1997 & 2004)¹⁶, the processes of designating a concept in a target language must take account of the corresponding processes operated in the source language just as these are reflected in the form of the primary term. The systematization of these processes within an integrated naming mechanism in the target language is called the “*analogue rule*” by the aforesaid author.

According to the analogue rule, “when forming a term in a target language in order to name a new concept that has been **primarily** named in the source language, the **namer’s first choice** should be to apply a term-formation mechanism analogous to the term-formation mechanism used for the **source language** term”. Table 1 shows the correspondence of term-formation mechanism data examined according to the *analogue rule*.

Table 1

| No. | In the source language | In the target language |
|-----|--|---|
| 1 | A <i>single-word new form</i> X has been created a. single-word Simple Term X (ST) b. single-word complex term X (dD or Dd), where d is the <i>determining component</i> and D the <i>determined component</i> of the term. | Creation of a <i>single-word</i> ¹⁷ term Y (neologism), simple or complex correspondingly, is examined. In case of a complex term the examination focuses on the correspondence of its immediate components (i.e. the <i>Determined component</i> of X to the <i>Determined component</i> of Y, and the <i>determining component</i> of X to the <i>determining component</i> of Y: $D_x \Leftrightarrow D_y$ and $d_x \Leftrightarrow d_y$) |
| 2 | A <i>multi-word new form</i> X has been created (polylectic complex term). | Creation of a <i>multi-word</i> term Y is examined, with immediate components of Y (D_y, d_y) corresponding to those of X (D_x, d_x). |
| 3 | The term X has been obtained by <i>conversion</i> . | Analogous <i>conversion</i> to obtain the equivalent term Y is examined. |
| 4 | There has been <i>terminologization</i> of the general language term X. | Analogous <i>terminologization</i> of the equivalent or other proper general language term Y is examined. |
| 5 | There has been <i>transdisciplinary borrowing</i> of the term X from the subject field SF. | The examination is whether <i>transdisciplinary borrowing</i> of the equivalent term Y from the same subject field SF may be adopted. |
| 6 | The term X is an <i>abbreviated form</i> of the full form x. | Creation of an <i>abbreviated form</i> Y of the equivalent full form y is examined. |
| 7 | <i>Synecdochical extension</i> has been applied to the term X. | Application of the analogous <i>synecdochical extension</i> to the equivalent term Y is examined. |

Example 1:

In the subject field of <Electronics>, the **English** term **chip** was formed in the source language as a simple single-word term, via **terminologization** of the ordinary term chip, meaning “a very thin slice of wood, food, etc.” in order to render the concept “*integrated circuit in the form of a thin rectangular semiconductor plaque*”. In **Greek**, MOTO applied an **analogous mechanism** by *terminologization* of the ordinary Greek term **πλινθίο** (= small brick). This choice provided for the possibility to render successfully terms such as those displayed in the table below.

¹⁶ The analogue rule constitutes the theoretical documentation of the many years of experience in creating Greek terms by the president of ELET0, K. Valeontis, as well as the working groups: MOTO (Permanent Group for Telecommunications Terminology) and EL0T/TC48/WG1 (Working Group for Information Technology Terminology).

¹⁷ Rendering a *single-word* term of the source language by a *single-word* equivalent term of the target language (hereupon Greek) – regardless of the latter being a simple or complex term – is particularly important for transferring the future development of the relevant concept system to the target language, since it makes possible further manifold complexing with other components in order to designate newer concepts of the field.

Table 2 – Some English terms containing the component **chip** along with the equivalent terms in Greek according to the Analogue Rule

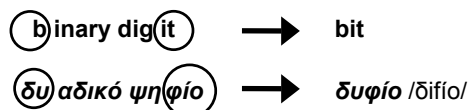
| English Term | Corresponding No. in Table 1 | Greek Term |
|---------------------|------------------------------|--|
| chip ST | 4 | πλινθίο /plinθio/ ST |
| chip-carrier dD | 1b | πλινθιοβάση /plinθio-vási/ dD |
| silicon chip dD | 2 | πλινθίο πυριτίου /plinθio piritíu/ Dd |
| multichip {n.} dD | 1b | πολυπλινθίο /poly-plinθio/ dD |
| multichip {adj.} dD | 1b | πολυπλίνθιος /poly-plínthios/ dD |
| multichip module dD | 2 | πολυπλίνθιο δομοστοιχείο /poly-plínθio domostixío/ dD |
| chip frequency dD | 2 | συχνότητα πλινθίου /syxhnótita plinθíu/ Dd |

Example 2:

In <Telecommunications> and <Information Technology>, the **English** term **bit** was formed in the source language as a new single-word form (simple single-word term) by **abbreviating** (in this case **blending**) the full form **binary digit**, without any change to the concept of the full form: “*digit of the binary numbering system*”.

The two terminology bodies **MOTO** (Telecommunications) and **ELOT/TC48/WG1** (Information Technology) submitted three suggestions for the rendition of **bit** in Greek, as candidates for the “Greek equivalent term”, which were put to vote by ΕΛΕΤΟ (the Hellenic Society for Terminology).

The term which received the majority of votes, was approved and has already been established as the Greek equivalent term is the Greek blend **δυφίο** /ðifío/. Thus, in this case a **blend** of the equivalent full term in Greek analogous to that of the English term was chosen:



The introduction of the term **δυφίο** was a true *relief* to those working in the area of Greek telecommunications terminology, allowing for a *revision rationalizing* some hundreds of *complex terms* in Greek containing the full form **δυναμικό ψηφίο** as the equivalent of the term **bit** from the source language. Some of these terms are shown in table 3.

Table 3 – Some English terms containing the component **bit** and the equivalent terms in Greek according to the Analogue Rule

| English Term | Corresponding No. in Table 1 | Greek Term |
|--------------------------|------------------------------|--|
| bit {n.} ST | 6, 1a | δυφίο /ðifío/ ST |
| bit {adj.} ST | 6, 1a | δυφιακός /ðifiakós/ ST |
| bit number dD | 6, 2 | αριθμός δυφίου /aríthmós ðifíu/ Dd |
| bit sequence dD | 6, 2 | ακολουθία δυφίων /akoluθía ðifíon/ Dd |
| bit error dD | 6, 2 | δυφιακό σφάλμα /ðifiakó sfálma/ dD |
| bit error ratio dD | 6, 2 | λόγος δυφιακών σφαλμάτων /lógos - ðifiakón sfalmáton/ Dd |
| bit-oriented protocol dD | 6, 2 | δυφιοστρεφές πρωτόκολλο /ðifíostrefés protókolo/ dD |
| data bit dD | 6, 2 | δυφίο δεδομένων /ðifío ðedoménon/ Dd |
| field extension bit dD | 6, 2 | δυφίο επέκτασης πεδίου /ðifío - epéktasis pedíu/ Dd |
| dibit dD | 6, 1b | διδυφίο, διδυφο /ðiðifío, ðiðifío/ dD |

7. Conclusions

The aim of this paper has been to describe linguistic aspects of the theory of terminology as they are expressed in – both international and Greek – relevant contemporary scientific literature as well as in ISO/TC 37 terminology standards, thus collecting and comparing terminological data from two different languages, English and Greek.

More specifically, we presented: **1.** the different conditions which make up the pragmatic framework for *primary* and *secondary formation* of terms as linguistic units, **2.** the *linguistic principles* which it is useful to observe when forming terms in both *source language* and *target language*, **3.** *interlingual methods of term formation*, focussing on certain particularities, which are characteristic for naming in English and Greek, **4.** the concept of *neologism* in terminology and how our opinion differs from the position of ISO, and **5.** the *analogue rule*, which systematizes the process of secondary naming by making use of analogies among cognitive and linguistic term formation mechanisms in both source and target languages.

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