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THE "ANALOGUE RULE" A USEFUL TERMINOLOGICAL TOOL IN INTERLINGUAL TRANSFER OF KNOWLEDGE

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SUMMARY

The *basic data* (*object(s), characteristics, concept, definition, and designation*) concerning a ***new concept*** are considered and their «*transfer*» from a source language (SL) to a target language (TL) is examined. The *SL namer* has conceived the *new concept*, formulated its *definition* and formed its ***designation* X** (*name, term* or *symbol*), by applying principles and rules proper to the SL (the ***SL convention***), whereas the *TL namer* must have fully understood the *new concept* by means of its *basic data* from the SL and he/she has on one hand to ***transfer*** to the TL all those data which are "*transferable*" and on the other hand to ***form*** the ***equivalent designation* Y** of the *new concept* in the TL, by using principles and rules proper to the TL (the ***TL convention***). Therefore, the passage of a new *concept*, as a new *unit of knowledge*, from SL to TL, is done within the *TL namer's* mind. The ***"Analogue Rule" of Naming*** is applicable when creating the *TL convention* for **Y**. This rule states that *e*xcept the above *basic data* of the new concept*,* the ***term-formation mechanism*** used for the *designation* **X** should be taken into account, and utilizes *any* ***analogies*** which may be applied to the TL to create the *designation* **Y**. A set of such analogies is indicated. Examples are given for the pair of languages **English** (SL) – **Greek** (TL).

1 THE BASIC DATA CONCERNING A NEW CONCEPT AND THEIR «TRANSFER» FROM THE SOURCE LANGUAGE TO THE TARGET LANGUAGE

An ***object*** is anything perceptible by our senses or conceivable by our minds; the ***characteristics*** of an object or a group of objects are *abstractions* of the properties of the object(s), whereas a unique combination of characteristics of an object or a group of objects forms a unit of knowledge, the ***concept***, which represents the object(s) in our minds (being an *individual concept or a general concept, accordingly*) [1].

Both **definition** and **designation** are representations of a concept: **definition** represents the concept by a descriptive statement fully delimiting and differentiating it from all other related concepts, while **designation** represents the concept by a sign which (by convention) denotes it. This representation may be either **verbal** (i.e. made of one or more words) – being a "**name**" or "**appellation**" for an *individual concept*, or a "**term**" for a *general concept* – or **symbolic** (i.e. a "**symbol**"), or combining both (word(s) and symbol(s)). "Designation" also is the act of "designating", that is the function performed by the *name*, *term*, or *symbol* of a concept, but also the act of "forming" the *name*, *term* or *symbol* of a concept by somebody, whom we agree to call the "**namer**" of the concept.

The designation **X** of a **new concept** in a subject field is a choice of the person who discovered or invented the new concept and rendered it in his/her own language (source language). The new knowledge is created in the source language and then is transferred to other languages (target

languages). The *source language namer* conceived the new concept, formulated its definition and formed its designation **X**, by applying – consciously or unconsciously – principles and rules proper to his/her language, without being committed to other languages. He/she was free to render the new concept in his/her best way having full knowledge of both the concept and the changes it causes to the system of concepts of the relevant subject field. The formation of **X** and the adoption of its correspondence to the new concept constitute, in essence, the **source language convention** to designate the new concept.

The matter is not the same for the *target language namer* (and we say: target language "namer" and not "translator" because we cannot talk about *translation* while the target language *equivalent designation* has not yet been formed). Therefore, the *target language namer* must have fully understood the new concept through data (*objects* covered by the concept, *characteristics* of the objects, *definition* and *designation* of the concept) the knowledge of which he/she obtains from the source language, and he/she has on one hand to **transfer** to the target language all those data which are "transferable" – namely information about *objects, characteristics,* and *definition,* since they are described through known *concepts* and *designations* – and on the other hand to **form** the ***equivalent designation*** **Y** (i.e. *name, term* or *symbol*) of the new concept in the target language, by using principles and rules proper to the target language. The *formation* of **Y** and the adoption of its *correspondence* to the new concept – thereby its equivalence to **X** – constitute, in essence, the **target language convention** to designate the new concept.

Therefore, the passage of a new *concept*, as a new *unit of knowledge*, from source language to target language for further dissemination, is done through a *noetic translingual interface* which is effected within the *target language namer's* mind.

In figure 1, the target language namer's "linguistic/intellectual" function for the source language is represented by a horizontal geometrical plane and the "linguistic/intellectual" function of the same *namer* for the target language is represented by a lower horizontal geometrical plane[1]. The course of transfer of the new concept's knowledge from one language to the other, through the abovementioned *noetic translingual interface* considered to be between the two planes of figure 1 is as follows:

The target language namer

1 can, via source language, follow and understand the source language namer's mental route (need to cover the **new object**(**s**) ➔ abstraction of the **characteristics** constituting the **new combination** i.e. the **new concept** ➔ formulation of the concept's **definition** in the source language ➔ formation of its **designation** in the source language);

2 having understood, via source language, both **characteristics** and **concept** does not have to «transfer» these items to the target language, since they have *interlingual* character;

[1] This representation is intentionally simplificative; the horizontality and level difference of the two planes do not imply but the direction from source language to target language, while their parallelism does not imply that the functions they represent are extraneous and irrelevant, the points "characteristics" and "concept" already being considered as common points of the two planes.

3 however, can «transfer» the **definition** of the concept from the source language to the target language, because the **definition** in the source language is formulated by means of **known designations** of the source language **for which there are already equivalent designations in the target language** (under this condition the target language *definition* in a *translation* of the source language *definition*);

4 taking into account the **definition** of the concept (in both languages) and its **designation** in the source language, **forms** its **designation** in the target language, using **designating principles and rules** proper to the target language.

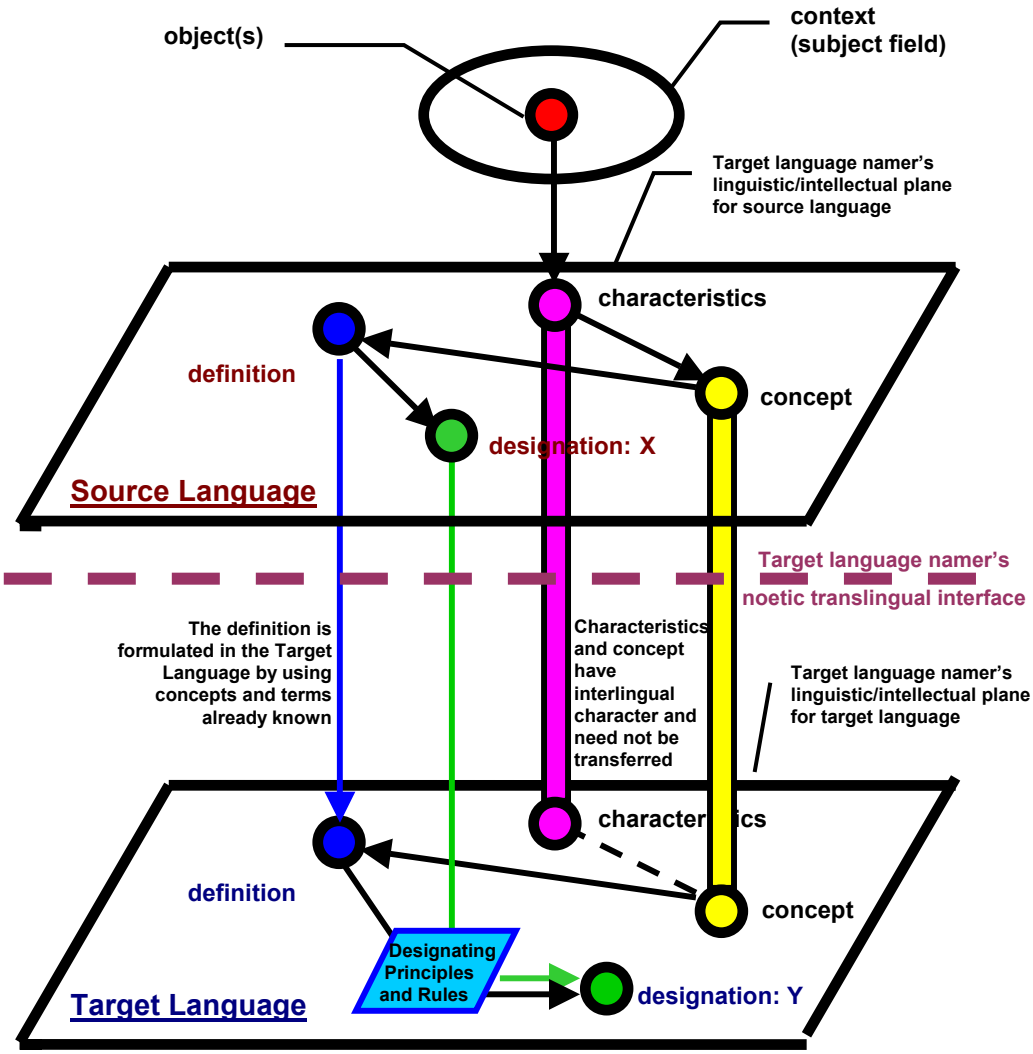


Figure 1 – Transfer of basic data concerning a *new concept* from the source language to the target language through the target language namer's «*noetic translingual interface*»

2 MAIN TERM-FORMATION MECHANISMS FOR CONCEPT NAMING BASED ON THE ENGLISH LANGUAGE (ACCORDING TO ISO)

According to ISO [2], three general term-formation mechanisms which apply to English and may also apply to other languages are: *creating new forms*, *using existing forms*, and *translingual borrowing*.

2.1 New forms are [2] new lexical entities that never existed before. For the creation of new forms

one may use processes such as *derivation* (e.g. phosphor+ous ➔ phosphorous), *compounding* (e.g. information + highway ➔ information highway, information + entertainment ➔ infotainment), and *abbreviation* (e.g. disc operating system ➔ DOS).

2.2 For the creation of new forms one may use **existing forms** by processes such as *conversion* (e.g. output {noun} ➔ to output {verb}), *terminologization* (e.g. circuit <general language> ➔ circuit <electronics>), *semantic transfer* (e.g. screen {concrete} ➔ screen {abstract}) and *transdisciplinary borrowing* (e.g. virus <Medicine> ➔ virus <Computer science>).

2.3 Terms existing in one language can be introduced into another language by ***translingual borrowing***: either as direct loans or as loan translations.

3 MAIN TERM-FORMATION MECHANISMS FOR NAMING NEW CONCEPTS IN THE GREEK LANGUAGE (EITHER AS A SOURCE LANGUAGE OR AS A TARGET LANGUAGE)

All that is stated by ISO above based on the English language are applicable to Greek too, as the following mechanisms which apply to the Greek language fall properly within the three main mechanisms of ISO.

a. *Creation of a* ***neologism***[2] *by creating a* ***new Greek word*** *which has never been used till now in the Greek language. For the formation of the neologism we may employ processes and techniques such as* ***derivation*****,** ***composition*****,** ***parasynthesis*****,** ***blending*** et al. (*ISO case* ***2.1*** *for monolectic (one-word) new forms).*

b. *Formation of a polylectic (multi-word) complex term by using* ***known Greek terms*** *in a syntactical interrelation which mirrors the verbal description of the definition. In this case shortening processes can also be used, such as* ***initialism formation*** *and* ***acronym formation***. (*ISO case* ***2.1*** *for polylectic (multi-word) new forms).*

c. ***Transfer*** of a term – *monolectic or polylectic – from the* ***general language*** *(terminologization) or from* ***another subject field*** (*transdiciplinary borrowing*), *i.e. use of a common term, or a term from another subject field, as* ***designation*** *of the new concept of the subject field under consideration.(ISO case* ***2.2*** *for existing forms).*

d. ***Translingual borrowing*** *of a term from another language, that is* ***transcription*** *of this term into the Greek alphabet* ***with or without adaptation*** *of the term to the conjugational system of Greek. (ISO case* ***2.3*** *for translingual borrowing).*

e. *Application of the "****synecdochical extension****", i.e. the use – by logical extension – for a concept, a qualification proper to another concept which is related to the former, and has basic importance for it. This process does not constitute a separate mechanism, but a horizontal rule applying to all other mechanisms stated above. Although not mentioned by ISO, this mechanism*

[2] In Hellenic Terminology, a **neologism** is a newly formed monolect – simple or complex – which may be a root word, a derivative, a compound or a parasynthetic word and which is formed and used **for the first time,** in all history of the Hellenic language, to designate a (not necessarily new) concept.

applies to the English language too.

4 FORMULATION OF THE «ANALOGUE RULE» OF NAMING

It is true that today the major part of new knowledge is produced in English as a *source language*. The problem of terminology in the Greek language, as in other languages too, as *target languages*, appears extremely intense on ***importing*** *new knowledge:* this import is done at such high rates that a great effort is needed to follow and timely render all **new terms of the source language** with ***equivalent terms*** of the *target language* considered.

However, a ***new term*** in the source language, in any given ***subject field***, means a ***new concept***, in that field, for which not yet any ***equivalent term*** has been developed in the target language; and for such a ***new concept*** it is impossible, indeed, to find the *equivalent term* in any existent dictionary of the target language. Consequently, the target language namers for the relevant subject field (within the teamwork of the proper *terminology body*) have to deal with the matter and **agree on** forming the *equivalent term*.

However, which one of the abovementioned mechanisms should they choose? Fig. 2 shows a simple block diagram of naming a ***new concept***; firstly in the *source language* (left side) and then in the *target language* (right side). As shown in this figure, the act of naming a *new concept* in the *target language* does not take into account, as the only ***data***, the ***definition*** of the concept and its *designation* (the ***term***) in the *source language*, but it additionally takes into account the ***term-formation mechanism*** in the *source language.*

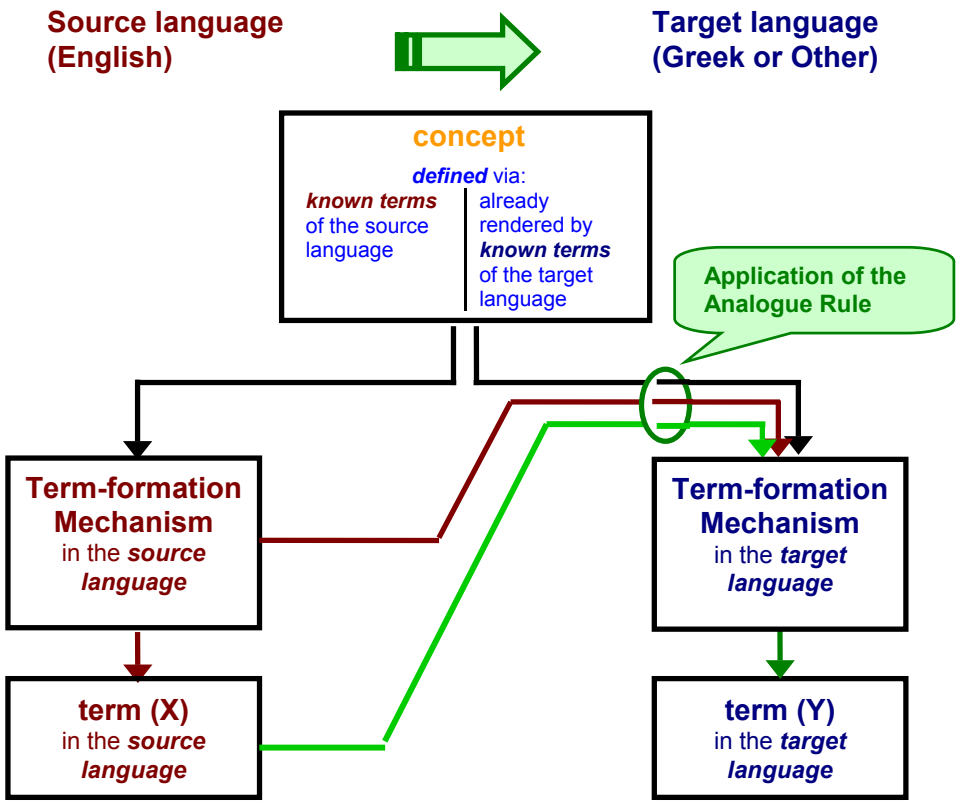


Figure 2 – The application of the «Analogue Rule» for naming a new concept in the target language takes into account, besides the *definition* of the concept and the *term* designating the concept in the *source language*, the relevant term-formation mechanism.

In essence, fig. 2, concerns the function of naming in the *target language* through the target language namer's *noetic translingual interface*, with the difference that it adds, to the data of fig. 1, one more datum: the *term-formation mechanism* according which the *designation* **X** has been formed in the *source language*; i.e. it adds a third arrow to the two ones which lead to the *designation* **Y** (see fig. 1) corresponding to the information about that mechanism.

An immediate question is then asked: To what extent the *target language* namer will follow a route ***analogous*** to that followed by the *source language* namer, i.e. an ***analogous term-formation mechanism*** in the *target language*. For the Greek language as *target language,* the answer is based on more then twenty years' terminological practice and experience in naming, in the framework of cooperative work with terminology bodies such as **MOTO** (Permanent Group for Telecommunication Terminology) and **ELOT/TC48/WG1** (Information Technology Terminology), and has been formulated [3] as the «Analogue Rule» of Naming:

The "Analogue Rule" of Naming:

*When forming a term in a language (target language) in order to name a **new concept** that has been **primarily** named in another language (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.*

The following table 1 gives the correspondence of some **analogous** data examined when applying the Analogue Rule.

Table 1 – Correspondence of term-formation mechanism data examined according to the Analogue Rule

No.	In source language	In target language
1	A *monolectic new form* X has been created **a.** monolectic simple term X (ST) **b.** monolectic complex term X (dD ή Dd), where d is the *determining component* and D the *determined component* of the term)	Creation of a *monolectic*[3] 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 ***D****etermined component* of X to the ***D****etermined component* of Y, and the ***d****etermining component* of X to the ***d****etermining component* of Y: $D_X \Leftrightarrow D_Y$ and $d_X \Leftrightarrow d_Y$)
2	A *polylectic new form* X has been created (polylectic complex term)	Creation of a *polylectic* 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 *conversion*	Analogous *conversion* to obtain the equivalent term Y is examined
4	There has been *terminologization* of the general language term X	Analogous *terminologization* of the equivalent or other proper general language term Y is examined.
5	There has been *transdisciplinary borrowing* of the term X from the subject field SF	The examination is whether *transdisciplinary borrowing* of the equivalent term Y from the same subject field SF may be adopted
6	The term X is an *abbreviated form* of the full form x	Creation of an *abbreviated form* Y of the equivalent full form y is examined
7	S*ynecdochical extension* has been applied to the term X	Application of the analogous s*ynecdochical extension* to the equivalent term Y is examined

5 APPLICATION EXAMPLES OF THE «ANALOGUE RULE»

A series of application examples of the «Analogue Rule» are given below, the target language being Greek.

Example 1:

In subject field <Electronics> the **English** term **chip** was formed in the source language as a simple monolectic term, by ***terminologization*** of the common term “chip” which means «a very thin slice of wood, food et al.» to render the concept «*integrated circuit in the form of a rectangular thin flat piece of semiconductor*». In **Greek**, MOTO applied an ***analogous mechanism*** by *terminologization of the common Greek term* ***πλινθίο*** /plinθío/ (= little brick). This rendering made possible to designate ***analogously*** a number of related concepts such as those in table 2.

[3] Rendering a *monolectic* term of the source language by a *monolectic* equivalent term of the target language (hereupon Greek) – regardless of 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.

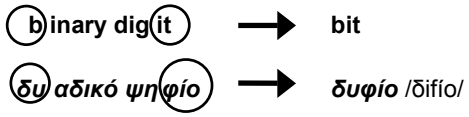
Table 2 – Some English terms containing the component **chip** and the corresponding Greek equivalent terms in accordance with the Analogue Rule

English term		Case in Table 1	Greek term	
chip	ST	4	***πλινθίο*** /plinθío/	ST
chip-carrier	dD	1b	***πλινθιοβάση*** /plinθio-vási/	dD
silicon chip	dD	2	***πλινθίο πυριτίου*** /plinθío piritíu/	Dd
multichip {n.}	dD	1b	***πολυπλινθίο*** /poly-plinθío/	dD
multichip {adj.}	dD	1b	***πολυπλίνθιος*** /poly-plínθios/	dD
multichip module	dD	2	***πολυπλίνθιο δομοστοιχείο*** /poly-plínθio ðomostixío/	dD
chip frequency	dD	2	***συχνότητα πλινθίου*** /syxnótita plinθíu/	Dd

Example 2:

In <Information Technology> and <Telecommunications> the English term **bit** was formed in the source language as a new form (a monolectic simple term) by ***abbreviating*** (hereupon ***blending***) the full form **binary digit** without changing the concept designated by the full form: «*a digit of the binary numbering system*»

The two bodies, **MOTO** (Telecommunications) and **ELOT/TC48/WG1** (Information Technology), proposed three candidate equivalent Greek terms for **bit**, which ELETO put to vote among its members. The proposal voted for was the blend ***δυφίο*** /ðifío/, which is produced by ***blending*** the equivalent full Greek term ***δυαδικό ψηφίο*** /ðiaðikó psifío/ in exactly the same manner as for **bit**:



The adoption of the term ***δυφίο*** has really *disburdened* the Hellenic telecommunication terminology, by allowing a rationalizing revision of some hundreds of Greek complex terms containing the full form ***δυαδικό ψηφίο*** as a rendition of the source language term **bit**. A number of such terms are given in table 3.

Table 3 – Some English terms containing the component **bit** and the corresponding Greek equivalent terms in accordance with the Analogue Rule

English term		Case 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*** /ariθmós 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*** /ðifiostrefés protókolo/	dD
data bit	dD	6, 2	***δυφίο δεδομένων*** /ðifío ðeðoménon/	Dd
field extension bit	dD	6, 2	***δυφίο επέκτασης πεδίου*** /ðifío - epéktasis pedíu/	Dd
dibit	dD	6, 1b	***διδυφίο, δίδυφο*** /ðiðifío, díðifo/	dD

Example 3:

ELOT (Hellenic Organization for Standardization), for the subject field <Quality>, ***borrowed*** from <Diplomacy> the Greek term ***διαπίστευση*** as the Greek equivalent term for the English **accreditation** to render the concept «*procedure to provide a formal recognition that a certain organization or person is competent to accomplish special tasks*»(see also Table 4)

Table 4 – Rendition of some English terms, from <Quality>, which contain the component **accreditation**

English term		**Case in Table 1**	**Greek term**	
accreditation	ST	5	***διαπίστευση*** /δiapístefsi/	ST
laboratory accreditation	dD	5, 2	***διαπίστευση εργαστηρίου*** / δiapístefsi eryastiríu/	Dd
accreditation criteria	dD	5, 2	***κριτήρια διαπίστευσης*** /kritíria δiapístefsis /	Dd
accredited laboratory	dD	5, 2	***διαπιστευμένο εργαστήριο*** /δiapistevméno eryastirio/	dD
accreditation body	dD	5, 2	***οργανισμός διαπίστευσης*** /oryanizmós δiapístefsis /	Dd

Example 4:

The *synecdochical extension* of the use of the English adjective «**digital»** from the concept «*digital signal*» (**=** «*signal with discontinuous temporal change in one of its characteristic quantities, which assumes values from a set of discrete values*») to a series of related concepts of the same concept system has been adopted (by MOTO) and used for the Hellenic Telecommunications Terminology (see also Table 5).

Table 5 – <Telecommunications> From «**digital**» **signal** to a series of other «**digital»** concepts

English term (dD)	**Case in Table 1**	**Greek term (dD)**
digital signal	2	***ψηφιακό σήμα*** /psifiakó síma/
digital input (= digital signal input)	2, 7	***ψηφιακή είσοδος*** /psifiakí ísoδos/
digital electronics (= digital signal electronics)	2, 7	***ψηφιακή ηλεκτρονική*** /psifiakí ilektronikí/
digital network (= digital signal network)	2, 7	***ψηφιακό δίκτυο*** /psifiakó δíktio/
digital connection (= digital network connection)	2, 7	***ψηφιακή σύνδεση*** /psifiakí sínδesi/
digital radio link (= digital signal radio link)	2, 7	***ψηφιακή ραδιοζεύξη*** /psifiakí raδiozéfksi/

6 CONCLUSIONS

In transferring knowledge from one language (*source language*) to another (*target language*) transfer of *new concepts* as new *knowledge units* plays a basic role. One of the essential components of this transfer is *naming* the new concepts in the *target language*, a function usually performed by *terminology bodies* (special committees or groups) of *target language* (*target language namers*). The «Analogue Rule» is applicable when naming new concepts, which have not been named before in the *target language.* According to this rule, besides the source language *definition* and *designation* of

the new concept the *target language namer* is asked to take also into consideration the term-formation mechanism used in the source language, and investigate, as first choice, the likelihood of using an *analogous term-formation mechanism* in the target language.

The Analogue Rule [3] does not *impose*, but simply *gives priority* to the examination of a term-formation mechanism in the target language analogous to that of the source language, thereby ensuring:

- *utilization of the work* which has been accomplished in the *source language,* where the *new knowledge (new concept*) was created*,* and which it is unwise to ignore*;*

- *restriction of arbitrariness* in selecting term-formation mechanisms possibly *irrelevant* to, or *incompatible* with, the term-formation mechanisms for the rest of the concepts of the same concept system, where the concept being named belongs;
- *minimization of the problems* that may arise from future *modifications* or *revisions*, which will reasonably be effected in the *source language* (given that knowledge from future development of the subject field under consideration will most probably remain *imported knowledge* for the target language).

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