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ON THE IMPORTANCE OF EMPIRICAL IDIOSYNCRASIES IN COMPUTER SCIENCE TERMINOLOGY

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Abstract

The domain of computer science is extremely versatile and dynamic, its complexity leading to the coinage of numerous new terms in a relatively short period of time. Their origin is, more often than not, empirical and these new terms have practical value. Moreover, they are customary and easy to remember, thus making the "science" behind the domain under scrutiny more appealing and easier to understand by non-specialists. The present paper aims at investigating the computer science terminology from a different perspective; it intends to devote special attention to the words which have acquired a new meaning, transgressing boundaries from general vocabulary to the active vocabulary of the non-specialist computer user. The novelty of this research lies in its focus on devising a new classification of these words which have their origin in the general English, thus helping non-specialist computer users to easily understand and use them. Consequently, the everyday English words assimilated by the information technology domain will be divided into six broad categories, i.e. standalone words, open compounds, closed or transparent compounds, compounds written as hyphenated words or that have a preposition or a conjunction as a linking element, words derived with the suffix –er, each of these encompassing a plethora of explained examples, which are very common in the aforementioned sphere.

Keywords: computer science terminology; metaphor; compounds; non-specialist computer users;

1. INTRODUCTION

It is generally known that English has acquired the status of an international language, referred to as a "medium of communication not only between people whose native language is English, but also, and very prominently, between people who have other languages for a mother tongue" as Friedrich & Diniz

de Figueiredo (2016 :15) put it. Within the context of globalization and internationalization, English has become the universal medium of communication and thus the official language of international academic conferences, politics, diplomacy, culture, science and technology, thus acquiring the status of an academic language (Albach 2015).

Therefore, it is no wonder that English is also the language of the World Wide Web, as stated by Crystal (2003) and (Piercy 2016), since the first computer operating system, computer-programming languages, codes, protocols and commands rely on the English alphabet to say nothing of the internationally-known initialisms, acronyms and abbreviations (extensively used in computer science as they enable rapid communication), which are also in English.

Moreover, Crystal (2003:117) emphasized that, since the 1900s, English has been "the chief lingua franca of the Internet", most electronically stored information being in English.

Moreover new words have constantly been added to the technical vocabulary of computer science to denote computing innovations. Numerous words of this type cross boundaries and are adopted into other languages of the world, as loanwords, most often retaining their original written form and pronunciation. In this respect, the powerful influence of English on other languages (more dominant in some countries than in others) has been frowned upon, linguists expressing their concerns regarding the threat which might transform other languages into peripheral ones.

Indisputably, breakthroughs in computer science and information technology have greatly impacted our society, leading not only to vocabulary enrichment, but also triggering unprecedented economic and social transformations. The explosion of new technologies, which have been developed in recent years, such as artificial intelligence, health informatics, robotics, nanotechnology, biotechnology, cognitive science, neuroinformatics and so on, have brought about massive changes influencing virtually every aspect of our lives, starting from revolutionary changes in healthcare and ending with major changes to the way we do business or we teach and learn. The fast-paced evolution of the IT domain has also shaped the way we communicate, giving rise to an online community, with its ups and downs. Additionally, information technologies have generated notable changes not only in transportation, energy, production or environmental practices, but also in commerce (enabling merchants to reach out to customers from all around the globe), fostering the globalization of business operations. Electronic business (e-business) has changed, gradually witnessing an explosive growth in recent years. Furthermore, electronic services (e-services) have become increasingly popular, digital payment being one of the fastest-growing fields. The radical transformations generated by the IT&C domain reshaped business models and online stores, not to mention the impact of the Internet as a marketing tool.

Computers encourage people all over the world to acquire some of these new words, to learn how to connect to the Internet and, hence, to have access to a huge amount of free and valuable information and resources available in the online world. They will not become tech-savvy or acquire digital skills overnight but they will gradually learn the basic computer terminology (essential words and phrases) needed even by novice computer users. Nowadays, common everyday English words such as **mouse**, **stick**, **link**, **menu** or **window** belong to the active computer science vocabulary of the vast majority of people, regardless of their age or professional background. It is absolutely futile to specify here the reasons why children, teenagers, students and working people use computers in their lives. Nevertheless it is worth mentioning that even senior people are increasingly willing to acquire computer-related terminology and to constantly update it as they need to understand instructions and learn how to surf the net to socialize, read the news, look for useful information, pay utility bills, place online orders and so on. This implies that all novice computer users, irrespective of their age are acquainted with at least the basic computer science terms.

2. PROBLEM STATEMENT

It is an undeniable fact that terminologies evolve and continuously need new words to denote technological phenomena, inventions or new concepts. Language adapts and, as a result of the incessant advances in technology, comes up with new meanings or creates new words. Computer science may be regarded as a notable generator of new words. Lexicological investigations conducted in this terminology resulted in the accumulation of valuable information and enabled different classifications (see Cocu, 2016, Cocu, 2019, Postolea, 2017). The originality of the present study lies in its focus on developing a classification of everyday English words whose meanings are extrapolated into the information technology domain acquiring, in most cases, a metaphorical meaning.

Broadly speaking, our classification comprises the following categories, which will be described and explained in further detail:

I. Standalone words
II. Open compounds
III. Closed or transparent compounds, made up of two sub-categories: a) compounds which also exist in everyday English and which acquire a similar or slightly different meaning in computing and b) compounds specific only to the computer science domain which are made up of two words (noun+noun; adjective+noun; preposition+noun) taken from common, everyday English and, whose individual meanings change when combined
IV. Compounds written as hyphenated words or which have a preposition or a conjunction as a linking element
V. *-er* derived words

The common denominator of the above-mentioned words is that they all originate in common English and are transposed in computer science terminology with a metaphorical meaning.

3. PURPOSE OF THE STUDY

The present research aims at investigating a series of relevant words which are used with a new meaning in computer science, highlighting the fact that due to common usage they have practical value thus becoming an integral part of the vocabulary of non-specialist computer users.

We should begin our analysis by mentioning the fact that metaphor is regarded as an extremely complex and multi-faceted phenomenon, which enables numerous interpretations form various perspectives. Our intent is to outline the importance of metaphor in computer science without making an exhaustive theoretical approach. However, we cannot start speaking about its important role without mentioning Lakoff & Johnson's (2003:4) opinion shared by many, according to which "metaphors are pervasive in everyday life, not just in language but in thought and action". It is a well-known fact that metaphors offer "a shift in the perspective", using "the old to illustrate the new", the familiar to depict the unfamiliar, thus facilitating understanding, as Hartmann (2003: 9-12) put it, and emphasizing the essential part that metaphor plays in the process of "the adoption of the new".

The substantial role of metaphor in the scientific discourse has been widely discussed in the scientific literature. Among others, Hartmann (2003), Ungerer & Schmid (2013), Taylor & Dewsbury (2018) point out that metaphors are dominant in computer science as they are mainly used for explanatory purposes and enable communication. In this respect, Lakoff & Johnson (2003) underlined that "the essence of metaphor is understanding and experiencing one kind of thing in terms of another".

Essentially, its importance lies not only in the fact that it is the process which generates a significant number of new words in this field but also in the fact that it makes these words memorable and easy to use. Specialists rely on metaphors as they are funny, logical and easy to remember, facilitating communication.

Basically, metaphors in computer science serve a threefold purpose as stated by Colburn & Shute (2008). Some metaphors may have a pedagogical role, i.e. an explanatory role since they rely on the previous knowledge of the user; the example provided by the authors is that of the web shopper who acts like a customer in a shop: selects the items by adding them to shopping cart and pays for them. Other metaphors, design-oriented goal metaphors, or design metaphors connect a target domain with a source domain e.g. a desktop user interface with a recycling bin in a kitchen closet. Last but not least, metaphors may have a scientific role – the "flow" metaphor - as they map "the target domain in terms of the source domain" Colburn & Shute (2008).

The world of computers relies heavily on metaphorical mapping to describe abstract realities using familiar concepts and thus to enhance understanding, as stated by Ungerer & Schmid (2013: 148). Marcus (2014:44) distinguishes three main types of metaphors in this field:

- *structural metaphors* – which substitute parts of one system for another, e.g. computers digital documents are represented as *folders*;
- *operational metaphors* – which substitute the behaviour of one system for another, e.g. to drag-and-drop a file to the trash can for deleting it;
- *pragmatic metaphors* – which enable a user to understand more, e.g. concrete desktop objects which represent abstract components of operating systems such as DOS.

Linguists (Sentence et al.2018: 212) highlight the widespread use of *dead* or *conventional* metaphors, which lose their original imagery and metaphorical meaning thus becoming non-metaphorical. Dead metaphors are widespread in science and technology and they are considered scientific terms being integrated in the specialist vocabulary. Subsequently, some of them infiltrate the active vocabulary of the people at large due to their extensive use.

4. FINDINGS

After thoroughly investigating this specialized terminology, we attempted at providing a classification, which does not pretend to be exhaustive, of the common English words taking on new meanings in computer science. This classification includes the most commonly used general vocabulary terminology transposed in the specialized language, made up of standalone words, compounds and *-er* derived words.

I. Standalone words

Computer **viruses** are small programs which can negatively affect the normal functioning of a computer by creating, moving or erasing files and occupying the computer's memory. Certain viruses can replicate, attach to some programs or even travel across networks. In order for a computer to be virus-free and **run** (execute programs) properly, an **antivirus** is used, which is a type of utility used for scanning and eliminating viruses. A very common type of virus is the so-called **worm**, a destructive computer program that duplicates through the Internet or a local area network by transmitting itself to other computers from the infected host terminal. Thus, a **host**, in this specific domain, is a computer that is accessible over a network and it can be **a client** (a piece of hardware or software that accesses a service made available by a server), a server or any other type of computer.

If a virus represents a piece of malicious software, whose sole purpose is to copy itself to other computers, **a bug**, which also causes a computer to malfunction, is an unintentional error in a program, causing it to unexpectedly stop running or behave in an inadvert manner. Hence the need **to debug** a program, which is the process of finding and resolving bugs. If a bug, in the domain, has a negative connotation, the same as in everyday English, **a mouse**, on the other hand, has a positive connotation and is one of the most common and well-known primary input devices used to move the pointer on the computer monitor, whose role is fundamental for any user, its name coming from the small shape of the

real-life rodent, which one can move quickly back and forth on the mouse pad and the tail, which represents the mouse's tail, although nowadays the cordless mouse supplanted the old, already obsolete one while still preserving its shape.

Cookies, in computer-related terminology, are text files which contain small pieces of data generated by a website, and saved by a web browser, its aim being to remember information about the user's preferences and pattern of navigation on the Internet and improve the user's web browsing experience. **To browse** (or **to surf**) the Internet means going from one web **page** (a specific collection of information) to another, using so-called hyperlinks. A website typically consists of many such pages, connected to each other, making up a coherent whole. **An anchor** represents a marked position in a web page to which the user can jump from somewhere else. **A link** is an HTML object that permits the user to jump to a new location when clicking or tapping it. Besides the term **cookie**, there are also other words taken from the food domain, whose meanings are extrapolated in the computer science domain, such as: **chip**, **menu**, **wafer** or **(to) crop**.

A computer **chip** is a piece of silicon with an electronic circuit embedded in it, **a wafer** is a thin, small disk, which can very well be a chip, onto which transistors and other components are etched, **a menu** is a list of options and commands that appears on the screen in response to the user's actions and the verb **to crop**, used in computer graphics, means to cut off the sides of a picture in order to make it the desired size or to remove unwanted parts.

Several computer words are borrowed from the office supplies sphere, some relevant examples being **file**, **folder**, **envelope** or **library**. **A file** is a collection of data stored in one unit and it can be a document, a picture, an audio or video stream etc., computer **folders** have the same role as a physical folder, i.e. store documents, **a library** is a collection of files, computer programs, or subroutines, **a path** defines the location of a file or folder in a computer's file system and **an envelope**, in a draw program, represents the imaginary outline enclosing an object. Also, in the computer area, the word **root** makes reference to the top-level directory of a file system, being the starting point of a hierarchical **tree** structure (which is a branching structure in which the data is stored), the folders within the tree being, in fact, the branches, while the files may be seen as the leaves.

In Web pages, **tags** reveal what should be displayed on the screen when a page loads while **a label** in the domain of computers represents a name or number linked to a specific statement in a program.

Interestingly, **a bus** inside a computer is also a means of transportation, like in real life, consisting of a number of wires that allow the data to travel back and forth, conveying data to different parts of a computer.

Logic **gates** carry out basic logical functions and are elemental building blocks of digital integrated circuits.

In object-oriented programming, **inheritance** is the process by means of which one object is defined to be just like another except for some specified difference, while **a child** is an object created with the properties of another object (called **parent**). **The threads** of a computer program allow the program to execute sequential actions or many actions at the same time. Also, in computer programming, **a map** refers to the documentation that describes the overall structure of a program or a hardware device and in networking to a link to another computer, share or printer. **To nest**, in the same programming area, signifies to put a structure inside another structure of the same kind, nesting being where information is organised in layers, referring to self-similar, repeating structures, whereas the term **fuzzy**, usually used in the phrase fuzzy logic, refers to a formal system in which the values true and false are replaced by numbers on a scale 0 to 1. A conditional **jump** is the process of changing the pointer of execution in **a stack** (which is a data structure used to store a collection of objects in which you can put items of data or from which you can retrieve them) to a certain point in your program or code according to a conditional

statement, **a loop** is a programming structure that repeats a sequence of instructions until a specific condition is met, **a batch** process executes a list of commands in sequence and **a flag**, which is often a binary one, is represented by a boolean value that acts as a signal for a function or process.

In networking, **a token** is a series of bits that circulate on a token-ring network. When one of the computers from the respective network has the "token", this means that it can send information to the other computers. In the computing world there are two types of hubs: network **hubs**, which allow multiple computers to communicate with each other over a network and USB hubs, which allow multiple peripherals to connect through a single USB port. Besides the meaning of hardware port, the term **port** has two other connotations: an Internet port number or the process of porting a software program from one platform to another, **a cluster** may refer either to a group of sectors in a storage device or to a group of connected computers and a node is any system or device connected to a network. The term **cloud** comes from early network diagrams, in which the image of a cloud was used to refer to a large network such as a wide area network, the cloud eventually becoming associated with the entire Internet. The cloud is also used to describe definite online services, which are known as "cloud computing".

To boot means to load an operating system into the computer, i.e. to turn it on. **Hibernation** is synonymous to putting the computer in a standby mode in order to save power. **A window** is an area on the screen displaying information for a specific program. **A key** is one of the keyboard's buttons on which letters, numbers, functions, and symbols are represented. **A tab** may be used in relation to a document header inside a window, allowing the user to navigate between multiple documents in a window or may refer to a key on the keyboard. **An address** may have multiple meanings in computer science. It may refer to a number or a certain bit pattern that identifies a location in computer memory, it may be a URL identifying a web page, a letter and number used for the column and row of a cell in a spreadsheet, an e-mail address or even a set of numbers identifying a computer on the Internet. A tool may give the mouse cursor new abilities and properties.

Cache, in computer terminology is a type of memory that stores recently used information which can be quickly accessed at a later time. F**lush** is a command used to finish an output operation by emptying the buffer/the cache in which the information is stored. **A (memory) stick** is a type of external memory card, a flash drive. **A (memory) leak** slowly drains the available memory, thus reducing the amount of free memory the computer system can use.

A core is an individual processor within a CPU, many computers nowadays having multi-core processors. **A bullet** is a character used to graphically mark items in a list, **bold** represents a type style that is heavier and darker than normal type, **a gutter** is a blank space between columns of type and **a ribbon** is a graphical control element in the form of a set of toolbars placed on several tabs. **A frame** represents a rectangular area meant for inserting graphics and text, **an icon** on the computer screen represents an object or a program on the hard drive, being the visual representation of something on your computer and **a wizard** is a part of a program, an assistant, which guides the user through certain steps. **A float** (or floating-point number) is, in fact, a number that has a decimal place, used when more precision is needed. **To justify** means to both right and left align a text.

II. Open compounds

Without being exhaustive, compounds are explained as two or more words or lexical units which form new lexical units (Jackson, 2013: 393) i.e. new words which are used in the terminology under investigation to designate new phenomena or concepts. The present study is based on Kenny's (2001:75) classification of compounds, who distinguishes between compounds written as orthographically separate words, (or open compounds) e.g. *mobile phone,* compounds written as single unhyphenated words, (also closed or transparent compounds) e.g. *smartphone, cyberspace,* and compounds written as hyphenated words e.g. *open-office, short-term.*

The **marching ants**, in computing, designate the moving dashed lines which indicate the borders of a selected object in a paint or draw program.

Much like the Trojan horse from the Greek mythology, which was used in order to take over the city, **Trojan horses** in computer science are viruses which act like regular programs but, if they are run, can damage a computer, corrupting data.

A computer **neural network** is made up of a series of connected algorithms that mimics the way the human brain and nervous system function, being able to adapt to changing input.

A **light pen** is an input device that can be used like a mouse to communicate with the computer.

A **hard copy** is a printed document, for example, a text file, a photograph, a drawing or any other type of printable file, whereas **a soft copy** represents the electronic version of a document, which may be saved on a computer.

To log on means to visit, especially a website, while **to log in** means **to sign** in with a username and a password. For instance, a user may log on to a website simply by visiting a page, but he/she won't be logging in because nothing on the respective site requires a username and password.

Data mining refers to the exploration of databases in order to find patterns in the data and **data processing** refers to the processing of information by computers.

The hard drive, which can hold over 100 GB of data, houses **the hard disk**, which is a spindle of magnetic disks where all the files and folders from a computer are physically located.

A heat sink, made out of a zinc or copper alloy, dissipates the heat from the processor, preventing it from overheating.

A home page is, in fact, a webpage which represents the starting point of a website.

A function key is one of the "F" keys along the top of a computer keyboard.

III. Closed or transparent compounds may be divided into the following sub-categories:

a) compounds already existing in everyday English which acquire a similar or slightly different meaning in computing.

For example, a bootstrap may have two meanings in general English: 1. a loop at the back of the boot, used to pull it on and 2. a person who is self-sufficient, not requiring help from others. In computing, **bootstrapping** describes a process which automatically loads and executes commands, the most fundamental form of bootstrapping being the start-up process taking place when the user starts up a computer, which automatically loads a series of commands booting up the system, checking for hardware and loading the operating system.

The common meaning of the word benchmark, i.e. a point of reference against which things may be compared, is extrapolated in the computer science domain in which **a benchmark** is a computer program used to test the capabilities of a software, a hardware component or the compatibility between a software and a piece of hardware.

A physical firewall is a wall or a partition that prevents or inhibits the spread of fire. A **firewall** serves a similar purpose in computing, that is to say it is a barrier between a trusted system or network and outside connections such as the Internet, which nevertheless allows trusted data to flow through it.

In everyday English, a desktop is the working surface of a desk whilst, in the computer domain, **the desktop** represents the whole computer screen, which serves as the user's workspace, on which they can manipulate objects with the mouse in a similar manner that they work with papers and other objects on the physical desktop.

An airbrush is a tool in paint programs which simulates the real-life effect of spraying paint.

A bottleneck is the neck or mouth of a bottle, which is more often than not, tight. Similarly, **a bottleneck** in computers is the part of a computer system which slows down its performance, for example a slow disk drive, a modem or an overloaded network.

A clipboard is a small board with a spring clip at the top, used for holding sheets of paper together, at the same time, providing support for writing. The computer **clipboard** is a RAM section where the computer temporarily stores copied data.

In military operations a crossfire is a gunfire from two or more directions passing through the same area. The **crossfire** technology in computers allows the use of multiple graphics cards to enhance the computer's ability to display graphics.

If the general meaning of a gateway is that of an opening which can be closed with the help of a gate, a virtual **gateway** represents a link between computer networks.

A handshake is the act of shaking a person's hand with one's own as a form of greeting. Equivalently, a computer **handshake** is a form of greeting between two devices which communicate with each other by means of the same protocol.

A landscape is made up of all the aesthetically appealing visible features of an area. A **landscape** format is a type of page orientation depending on the direction in which a document is displayed or printed, in which the width is longer than the height.

A notebook is a small book for writing notes in, but it may also refer to a portable, smaller computer that one can take in different environments.

A shortcut generally represents an alternative route which is shorter than the usual one. In the same way, **a shortcut** in Windows is an icon which serves as a link to a file or icon in another place on the same computer or may be a faster way to access a command without having to choose from a menu.

A wallpaper is a paper posted in vertical strips over the walls of a room in order to decorate them. In a similar manner, **a wallpaper** in the IT domain, is a background image which covers the desktop of a computer.

A workstation represents a specific location on an assembly line. In computing, it refers to a computer and the surrounding area which has been arranged so that a certain set of tasks could be performed, such as photo editing, audio recording or video production.

b) Compounds which are specific only to the computer science domain. They are made up of two words (noun+noun; adjective+noun; preposition+noun) taken from common, everyday English whose individual meanings change completely when used together.

Bluetooth is a wireless technology enabling the communication between compatible devices, used for short-range connections.

A database is a data structure storing information in an organized manner under the form of tables, which may each include several different fields.

To download is the process of receiving data over the Internet, whereas **to upload** represent the opposite process, i.e. to send data to another system over the Internet.

A footnote is a short comment at the bottom of a page which provides a citation or a relevant remark regarding the text.

A hotspot is a place where wireless access to the Internet is provided.

A hyperlink may be found on nearly all Web pages, allowing users to go from one page to the other when clicking on it.

A hypertext is an electronic document presenting information which can be read by following many different connections, instead of sequentially, like reading a book.

A joystick is an input device used mostly for playing games, consisting of a handle which can be pointed in different directions.

A keyboard is, along with the mouse, the primary input device used to communicate with the computer; t may be either QWERTY or AZERTY, depending on the country in which it is used.

A trackball is an upside-down mouse, having a moveable ball on the top, which can be rolled in any direction.

A touchscreen is a display which also has the function of an input device.

A mainframe is an ultra-high-performance computer, which is usually used as a server.

A motherboard is the main circuit board of a computer, also known as the mainboard or logic board.

A spreadsheet, normally used in Excel, is a document which stores data in a grid of horizontal rows and vertical columns, allowing the data to be analysed by using formulas and calculations.

A toolbar is a set of icons or buttons which are part of a software program's interface or an open window.

To troubleshoot means to diagnose the source of a problem, be it a hardware or a software problem, and fix it.

IV. Compounds written as hyphenated words or that have a preposition or a conjunction as a linking element

Copy and paste are two commands used when you copy material from the document being edited into a holding area, from which you can then "paste" it elsewhere.

Cut and paste are two commands used when you remove material from the document you are editing and place it into a holding area, from which you can then "paste" it elsewhere.

Drag and drop is a common action involving moving the pointer over an object, selecting it and then moving it to another location.

A drop-down menu, also called **a pop-up menu**, is a vertical list of options that appears when a particular item in a horizontal menu bar is selected, whereas a fly-out menu is a secondary menu that appears to the side when the user selects an item from the main menu.

A flip-flop is an electronic circuit which can switch back and forth between two states (0 and 1) and which remains in either state until altered.

A floating-point number (a float), as its name implies, is a number which contains a floating decimal point and it is opposed to an integer.

A plug-in is an **add-on** (a software extension adding extra features to a program) which brings more functionality to a software.

The term **user-friendly** describes a hardware device or a software interface which is easy to learn, use and understand.

V. Derivation with the suffix *-er*

A compiler is a software program which compiles program source code files into an executable program.

A (web) **browser** is an application used to access and view websites, such as Internet Explorer, Google Chrome or Mozilla Firefox.

A crawler (also called spider) is a computer program which explores the World Wide Web and collects information.

A driver is a software program, required by peripherals, which allows a specific hardware device to work with the computer's operating system.

A header is small area at the top of a document, while **the footer** is located at the bottom of a page. Headers are often used to display the document title or company name at the top of each page, whereas the footer may display, for example, page numbers.

A hacker is a person who gains unauthorised access to computers, "hacking" his way through the security of a computer system or network.

An interpreter is a program which reads and executes a code.

A plotter is a bigger printer, used to represent A3 or bigger graphs, used for printing architectural blueprints, engineering designs and other CAD drawings.

A pointer is most often used to refer to an arrow-like symbol which moves around a computer screen when controlled by a user.

A router is a hardware device which conveys data from a local area network to another network connection.

A server is a computer that provides services to another computer.

As shown, derivation is another resourceful word-formation process that uses suffixes and prefixes to create new words. There are several prolific affixes which generate new words in specialized terminologies in general but we limited our study to the *–er* suffix as it is the best represented category in computer science and which best serves the purpose of this research.

5. CONCLUSIONS

The inquiry into the terminology of computer science revealed that a considerable proportion of common, everyday words, be they standalone words, compounds or derivatives, are meant to familiarize the non-specialists with the vast terminology range covered by this prolific and ever-changing domain.

As a result, everyone who has a computer nowadays makes use of a *mouse* and a *keyboard,* needs effective *firewalls* to block *worms* or *Trojan horses* when *surfing* the Internet or uses a *troubleshooting* software in order to get rid of the *bugs* from the computer system, thus realizing how important *hard disks* are in order to store data.

As demonstrated, metaphors are remarkably well-represented in this terminology, their main role being explanatory as they facilitate the understanding of various concepts used in IC &T.

BIBLIOGRAPHY

[1] Cocu, I., *The Language Of Social Networks – The Lingua Franca Of Tomorrow*, The Annals of the "Dunărea de Jos" University of Galați, Issue XXIV Common lexicon/specialized lexicon, year IX, no. 1-2 (15-16)/2016, Cluj-Napoca: Casa Cărții de Știință Publishing House; 2016.

[2] Cocu, I., *(Un)questionable Use of Anglicisms in Romanian Computerese*, MCSDARE:2019, No. 3, Year 2019, pp.303-308, Galați – Târgoviște: Valahia University Press; 2019.

[3] Crystal, D. *English as a Global Language.* 2nd edition. Cambridge: Cambridge University Press; 2003.

[4] Crystal, D. *Language and the Internet.* 2nd edition. Cambridge: Cambridge University Press; 2006.

[5] Cuddon, J.A. *Dictionary of Literary terms and Literary Theory.* 3rd edition. London: Penguin Books; 1991.

[6] Downing, D., PhD, M. Covington, PhD, M.M., Covington. *Dictionary of Computer and Internet Terms (tenth edition).* New York: Barron's; 2009.

[7] Friedrich, P., Diniz de Figueiredo, E.H. (2016). *The Sociolinguistics of Digital Englishes.* New York. London: Routledge; 2016.

[8] Hartmann, M. *Technologies and Utopias. The cyberflâneur and the experience of 'being online'.* München: Nomos Publishers; 2004.

[9] Jackson, H., *The Bloomsbury Companion to Lexicography*, London: Bloomsbury Publishing LTD.; 2013.

[10] Kenny, D., *Lexis and Creativity in Translation. A Corpus-based Study*, Manchester: St. Jerome Publishing; 2001.

[11] Lakoff, G., M., Johnson. *Metaphors We Live By.* London: The University of Chicago Press; 2003.

[12] Piercy, J. *The Story of English. How an Obscure Dialect Became the World's Most Spoken Language.* London: Michael O'Mara Books Limited; 2016.

[13] Postolea, S., *Translation Patterns at Term Level – A Corpus-Based Analysis in the Specialised Language of ICT* , Iași: Institutul European; 2017.

[14] Sentance, S., E., Barendsen, C., Schulte. *Computer Science Education.* London: Bloomsbury Academic; 2013.

[15] Ungerer, F., Schmid, H., (2013). *An Introduction to Cognitive Linguistics.* New York: Routledge; 2018.

ONLINE SOURCES

[16] Altbach, Ph., (2015). *The Imperial Tongue: English as the Dominating. Academic Language,* available from: <https://ejournals.bc.edu/ojs/index.php/ihe/article/.../7137>

[17] Colburn, T.R., Shute, G.M. (2008). *Metaphor in Computer Science,* Journal of Applied Logic, available from: <https://www.sciencedirect.com/science/article/pii/S1570868308000463>

[18] <https://languages.oup.com/google-dictionary-en>

[19] Marcus, A., (2014). *Metaphor design in users interfaces,* available from: <https://www.researchgate.net/publication/234807478_Metaphor_design_in_user_interfaces>.

[20] Taylor, C., Dewsbury, B., (2018). *On the Problem and Promise of Metaphor Use in Science and Science Communication,* JMBE, available from: < https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5969428/>.

[21] <www.techterms.com>

[22] <www.wikipedia.org>