Acrostics in the Computer Networking Jargon: A Morphosemantic Analysis

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Abstract
Acrostics are becoming more and more widespread in computer networking jargon. Most books on computer networking, written in English or French, use them without giving their meanings in order to avoid confusion that may arise in the heads of EFL learners since the form of these acrostics resembles the one of already existing words. This phenomenon needs being tackled since it seems that there is not any research related to acrostics used in the computer networking jargon. The study uses a corpus of 31 acrostics collected from different books of computer networking. It referred to a morphosemantic approach to analyze these data. Based on the analysis of data, the findings reveal that the acronyms used in computer networking have the same form with some words of English or French. However, there is not any semantic relationship between these words and the acrostics used in the computer networking jargon. Hopefully, this study will help EFL learners/teachers enhance their learning/teaching of English as they are involved in computer networking field.

Keyword: Acrostics, Acronyms, computer networking jargon,

Résumé
Les acrostiches (acrostics en anglais) deviennent de plus en plus répandus dans le jargon du reseau informatique. La plus part de livres, écrits en Anglais ou en Français, les utilisent sans fournir leurs significations afin de permettre aux apprenants de l'Anglais comme langue étrangère d'en saisir le sens et d'éviter toute confusion, étant donné que leur forme est identique à celle des mots déjà existants en Anglais ou en Français. Il importe donc d'analyser ce genre d'acronymes surtout qu'il semble qu'il n'existe pas une analyse dans ce sens. Cette étude se base sur un corpus de 31 acrostiches collectés dans différents livres du réseau informatique et utilise l'approche morphosémantique pour l'analyse de données.
Les résultats montrent que, bien que ces acronymes ont une forme identique à celle des mots déjà existants, il n'existe aucune relation sémantique entre eux. Cette étude pourra aider les apprenants/enseignants de l'Anglais comme langue étrangère de renforcer leur apprentissage/enseignement de l'Anglais du jargon du réseau informatique.

Mots clés : acrostiches, acronymes, jargon réseau informatique.

1. Introduction

Acrostics are acronyms whose reading/pronunciation coincides with a homophone word in English language. They are much used in the field of computer networking. Mattiello (2013 p.64) shows that the use of acronyms and other aplhabetisms such as initialisms goes back to antiquity. They have proliferated from the late nineteenth century onwards. This proliferation can be justified by the need for a more efficient vocabulary in technical sectors such as medecine, economy, commerce, etc. Moreover, advances in computer science and technology brought constant stream of new concepts and terms. As a consequence, the practice of abbreviations became increasingly convenient. As far as acronyms used in computer networking are concerned, most of them have a morphology which resembles much the one of well known English or French terms. The bad side of this is that the books on computer networking, even those written in French, use these acrostics without giving their meanings to avoid confusion that may be caused by the morphology

of these words. As a consequence, students may be confused and not get the right meaning. This fact can hinder their English learning since the form of these acrostics is the same with already existing and well known words. That is why this study sets out to investigate the acrostics of computer networking jargon in order to make EFL and ESP students/teachers aware of them. Hopefully, such knowledge will improve their English learning/teaching and help them use them.

2. Review of Literature

There is a scarcity of studies related to the acrostics used in the computer networking jargon. Most researches concentrate on initialisms in computer science in general without any particular stress put on the acrostics used in the computer networking in order to help EFL students of computer networking cope with their use since their form resembles the one of already existing words of English or French.

Mattiello (2013 p.64) defines acrostics as acronyms whose reading/pronunciation coincides with a homophone word in the English language. Differently put, the morphology of these words can be easily confused with very well known words in the English language or another language such as French. As can be observed, homophony can be either semantically relevant or not. Hence the following types of acrostics: (1) Semantically-irrelevant acrostics, and (2) Semantically-relevant acrostics.

The phonetics of *semantically-irrelevant acrostics* is unintentionally identical to that of the existing words, but no semantic connection between the acrostic and the actual word can be retraced. By contrast, in *semantically-relevant acrostics* there are combinations that intentionally give rise to homophone. Such acronyms are also called *punning acronyms* because the result of homophony is a pun, which semantically connects the meaning conveyed by the acrostic to that of the homophone word.

3. Method

This study is a documentary research. To collect data, different books of computer networking were read with the purpose of finding out the acrostics used in this field. This helped to collect 60 acrostics from which only 31 were randomly sampled. To analyze these data, the study uses a morphosemantic approach. That is, the study will try to see if the acrostics have the same meanings with the already existing words, and attempt to provide the meaning corresponding to the acrostics. This will be done with the purpose to strengthen awareness of learners or teachers as far as these differences in meanings are concerned. The Oxford Advanced Learner's Dictionary by Hornby (2010) will be used for the definitions of some terms having the same morphology as acrostics. As regards the meanings of the acrostics analyzed in this study, they are adapted from different books of computer networking that were used for data collection.

4. Analysis and Discussions of the Findings

The data to be analyzed are 31 acrostics sampled from the population of 60 acrostics collected from different books of computer networking. All the acrostics that were collected fall in the class of semantically-irrelevant acronyms. That is, the meanings of these acrostics have no semantic relation with the ones of already existing words, although they have the same morphology. Below are the acrostics that constitute the corpus.

(1) AS

(2) ASK

(3) BAS

(4) CHAP

(5) DAD

(6) DE

(7) DES

(8) DIT

(9) DU

(10)   EU

(11)   IDEA

(12)   IP

(13)   IS

(14)   IT

(15)   LAP

(16)   LED

(17)   LU

(18)   MAC

(19)   MAN

(20)   MIME

(21)   PAD

(22)   PAN

(23)   PING

(24)   PU

(25)   RIP

(26)   ROSE

(27)   SAP

(28)   SIP

(29)   SLIP

(30)   SO

(31)   UNI

As can be realized, the acrostics in (1) can be confused with *As* standing for adverb, conjunction or preposition in English. In the field of computer networking, however, the word in (1) is an acrostic for *Autonomous system*, which is the *Broader Gateway Protocol for the routing domain under coordinated administration, and using one consistent interior protocol and link-metric though out neighboring organizations*. In the same way, the word in (2) may, at first sight, give the impression that it stands for the imperative form of the verb 'to ask'. However, it is an acrostic for *Amplitude Shift Keying*, which is *a technique of conversion according to which the amplitude of analog carrier signal is modified to reflect binary data.* As regards the word in (3), its morphology resembles the one of the French adjective 'Bas'. On the contrary, this word is an acrostic standing for *Basic Activity Subset*, which is *a synchronous protocol developed by IBM (International Business Machines).*

Concerning the word in (4), at first sight, it may give the impression that it means:

- *a boy or man; crach due to dehydration (as a noun)*

- *a long narrow depression in a surface (as a noun)*

- *a crack in a lip caused usually by cold (as a noun)*

On the contrary, neither of the above meanings can be kept for the word in (4) which is an acrostic for *Challenge Hand Shake Authentication Protocol*. The CHAP in (4) means *secure hashes used to provide secure password-based login authentification in the presence of eavesdropping*. With regard to the word in (5), it may be confused with the word *dad* meaning a male parent (father). This word does not mean *father* as its morphology suggests, but it is an acrostic standing for *Duplicative Address Detection,* which is *a technique for the detection of a copy of the original address*. As for the acronym in (6), its form is identical with French article '*de'*. However, in the computer networking jargon the word in (6) is an acrostic for *Discard Eligibility*, which is *a bit positioned by the network in order to indicate the frame to discard in priority when there is congestion*. The same confusion can arise from the word in (7) which can be confused with the French indefinite article *Des* standing for the plural of 'un' or 'une'. It is worth noting that the word in (7) is an acrostic for *Data Encryption Standard*, which is *a technique for the encryption and protection of the data to transmit over the network*.

Turning now to the word in (8), it may be confused with the Simple Present of the French verb 'dire' conjugated in third person singular. This word is not to be taken in this sense, but as an acrostic for *Directory Information Tree*. DIT in (8) means *a hierarchical organization of the data base for the geographical localization of the terminal connected to the network*. Similarly, the word in (9) may, at first sight, give the impression that it is a French article meaning 'some' in English. On the contrary, this word is an acrostic for *Data Unit*, meaning *data manipulated by a layer of internet and sent to a homologous entity*. Furthermore, the morphology of the word in (10) is identical with the one of the past participle of the French verb 'Avoir'. It is noteworthy that the word in (10) is not the past participle of the French verb 'Avoir', but an acrostic for *End User*. In computer networking jargon, *EU* means *a terminal in a network configuration*.

A look at the form of the word in (11) may give the impression that it means *thoughts*. However, it is an acronym for *International Data Encryption Algorithm*. In the computer networking jargon, IDEA is *a technique for data encryption used in computer networking*. For the acrostic in (12), its form may be confused with the word *IP* defined in the dictionary as the *science concerned with gathering, manipulating, storing, retrieving, and classifying recorded information*. Considered in the field of computer networking, however, the word *IP* is an acrostic standing for *Internet Protocol*. To put it in other terms, *IP* in (12) is *a protocol for the identification of nodes on the internet*. Also worth being mentioned is the acrostic in (13), and whose form is the same with the of the third person (singular) of the verb be '*Is'* conjugated in Simple Present tense. Yet, it stands for *Intermediate System*, meaning a *gateway devices through which the internet protocol realizes the transfer of data, between two end systems or many networks, in disconnected mode or datagram*.

Another word that has a misleading form is the one in (14). By its morphology, it may refer to the English third personal pronoun *it*. *IT* is not here a personal pronoun (object or subject), as one might think, but an acrostic for *Information Type* used to indicate the type of data. To put it in another way, *IT* is *one of the fields of User Datagram Protocol which helps to distinguish the start or the end of the message, a unique cell, a clock information, etc*. For the word in (15), the dictionary defines the polysemous word *LAP* in (15) as:

- *Noun: the upper side of the thighs of a seated person*

- *Verb: lie partly over or alongside of something or of one another*

- *Noun: an area of control or responsibility*

- *Verb: pass the tongue over*

None of the above meanings given by the dictionary for the word *LAP* can be kept for the word *LAP* in (15) which is an acrostic for *Link Access Protocol*. It is worth noting here that the word LAP in (15) means *an*

asynchronous balanced mode used in full duplex link. It is also a mode of link control used in multipoint links. As far as the word in (16) is concerned, it may be confused with past participle of the verb 'to lead'. By contrast, this word is an acrostic for *Light Emitting Diode*, which is *a diode constituted of an electro-luminescent diode or a laser diode which transforms electric impulsions into light impulsions.*

As to the acrostics in (17) and (24), they may be confused respectively with the past participles of the French verbs *Lire* and *Pouvoir.* The word LU in (17) and the word PU in (24) stand respectively for *Logical Unit* and *Physical Unit.* LU in (17) means *a representation of the user in a network configuration.* In the same way, PU in (24) is *a programme which manages the physical resources of the hardware.* With respect to the word in (18), its form may refer to one of the following meanings:

- *a raincoat, especially one made from a particular of waterproof cloth (a countable noun)*

- *a term of address for a man or a boy whose name is not known to the speaker (vocative noun)*

It should be pointed out here that none of the above meanings should be considered for the word MAC in (18). In the field of computer networking, however, this word is an acrostic for *Media Access Control.* It is a *sublayer of data link that controls the way transmitters share a signal transmission channel. It includes logical topology, media access and addressing.*

Concerning the word in (19), it does not mean a *male human being* or the verb 'to man' (work at, run, operate or fortify) as one might think, but an acrostic for *Metropolitan Area Network*. MAN is a *type of network configuration that spans a town.* The word in (20) may refer to the theatrical technique of suggesting action, character or emotion without words, using only gestures, expressions and movements. Considered in the field computer networking, however, the word MIME in (20) is the acrostics for *Multiple Internet Mail Extensions*, which are *a set of extensions to the format of email messages that allow to use non-ASCII characters inside mail messages. It can be composed of several different parts each having a different character.* As to the acrostic in (21), its form may give the impression that it is the word *PAD* defined in the dictionary as:

- *Noun : A number of sheets of paper fastened together along one edge*

- *Noun : The large floating leaf of an aquatic plant*

- *Verb : Add details to*

By contrast, the word *PAD* in (21) does not have any of the above meanings, but it stands for *Packet Assembler-Disassembler*, which is *a concentrator that disassembles data and transmits them character by character.* The form of the word in (22) is also confusing since it gives the impression that it means ustensils. However, this word is an acrostic for *Personal Area Network*, which is *a network organized by an individual for his/her personal use, and covering a personal area.* In the same vein, as far as the word in (23) is concerned, the dictionary gives the following meaning:

- *A river in western Thailand ; a major tributary of Chao Phraya*

- *Hit with a pinging noise*

- *A sharp high-pitched resonant sound (as of a sonar echo or a bullet striking metal)*

- *A sound like a car engine that is firing too early*

- *Contact, usually in order to remind*

None of the above meanings can be kept for the word *PING* in (23) which stands for *Packet Internet Groper*. In the computer networking field, PING is *a command used to check the connection of the computers to the network.* There is even the verb *to ping* meaning: *to check if the machines are connected to the internet.* Coming now to the word in (25), its form may refer to one of the following meanings:

- *As verb: tear or pull something quickly or forcibly away from something or someone*; m*ove forcefully and rapidly; scold or criticize, etc*

- *As noun: a long tear or cut; a fraud or swindle*

None of the above should be taken for the word in (25). By contrast, this word is an acrostic for *Routing Internet Protocol.* To throw light on the word in (25), RIP is *a protocol for the routing of information so that it may follow the shortest way.* Regarding the acronym in (26), it gives the impression that it may have one of the following meanings listed by the dictionary:

- *as a noun : any of the many shrubs of the genus Rosa that bears roses, or a pinkish table wine from red grapes whose skins were removed after fermentation*

- *as an adjective : something having a dusty purplish pink color*

However, the word *ROSE* in (26) is an acronym standing for *Remote Operation Service Element.* ROSE, in the field of computer networking, means *a set of functions supporting the interactive operations in Client/Server model.* The word SAP in (27) does not mean *the fluid that circulates in the vascular system of a plant, consisting chiefly of water with dissolved sugars and mineral salts* as it may be thought. One might also think that the word in (27) is a verb meaning: *gradually weaken or destroy a person's strength or power.* Taken in the field of computer networking, the word in (27) is an acrostic for *Service Access Point*, which is *a point through which a user interacts with a service*. Similarly, the word in (28) can make one conclude that it means *a small drink or drink in sip.* However, all these meanings are not to be taken for the word *SIP* in (28) which is an acrostic referring to *Simple IP or Simple Internet* Protocol. Considered in the field of networking, SIP *is an IP for the addressing plan which assures the unicity of the adopted plan which eventual next interlocutors.*

As may be observed, the acrostic SLIP in (29) can be confused with the polysemous word ''*Slip''*. For example, considered as a noun, the word *Slip* means *a socially awkward or tactless act.* Considered as verb, *slip* means '*move stealthily*'. It should be noted here that the word *SLIP* in (29) has neither of these meanings and the other presented in the dictionary. By contrast, *SLIP* is an acrostic for *Serial Line Interface Protocol.* That is, SLIP is *a protocol for the encapsulation of the IP packet.* In the same way, the word in (30) may, at first sight, bear one of the following meanings:

- *The syllable naming the fifth note of any musical scale solmization*

- *To a very great extent or degree*

- *In a manner that facilitates*

- *In such a condition or manner, especially as expressed or implied*

To throw light on the word in (30), it should be mentioned that it is an acrostic standing for *Shift Out*, which is *a character control of ASCII and EBCDIC codes in order to mean that the code is not in use.* Finally, the form of the word in (31) can refer to the abbreviation of the word *university* or to *a uniformed police officer.* On the contrary, this word is the acrostic for *Uniform Resource Identifier.* UNI is a *unique address or path from each resource located on the web.* It is also known as URL (*Uniform Resource Locator*), which is the address of the site.

5. Conclusion
This article attempted to analyze morphosemantically some acrostics in the computer networking jargon. The study reveals that although the morphology of these acrostics is identical with the one of already existing words of English or French, there is not any semantic relationship between these acrostics and the actual words. The purpose of this study was to make EFL and ESP learners/teachers aware of these differences in meanings in order to enhance their learning/teaching of vocabulary of computer networking, which is a subfield of computer science. EFL and ESP teachers are encouraged here to design lessons related

to the teaching of these acrostics, since most books on computer networking, even those written in French, use them without giving their meanings. They can use the materials presented in this article to design vocabulary lessons based on acrostics used in computer networking. Such lessons can be helpful since EFL and ESP students involved in the field of computer networking are expected to develop this awareness.

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