

Anglicisms in Electrical Engineering Terminology

A new word is like a fresh seed sown on the ground of the discussion.

(Ludwig Wittgenstein)

Preliminary Communication

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Abstract – *This paper addresses the problem of increasing penetration of Anglicisms in electrical engineering terminology, with particular emphasis on computer terminology. This widespread phenomenon is part of a larger language process influenced by globalization, in which the boundaries between languages have become less rigid. Furthermore, the problem of their integration into the Croatian language system is analyzed. Examples excerpted from Croatian popular magazines and scientific journals in the field of power engineering and computer science are analyzed in accordance with the work of Rudolf Filipović. Consequently, the analysis is carried out on the level of orthography, phonology, morphology, and semantics, but also on the level of word formation. In the end, standardization issues of Anglicisms are tackled.*

Keywords – *adaptation, Anglicisms, electrical engineering terminology*

1. INTRODUCTION

Borrowing is part of a linguistic phenomenon called neology. According to [1], every natural language is susceptible to the process of neologism creation, either by producing them out of their own resources, or by importing them from other linguistic systems. The neology process is conditioned by man's social evolution, i.e. that which is brought about by new inventions, phenomena, products, etc., which entails the inevitable appearance of new words. Mounin [in 2] defines a neologism as a new word, a new meaning of a pre-existing word, but also a loanword (not only originating from a foreign language, but also from jargon used within different social groups); finally, a word that has been revived. Loanwords, which fall into the category of neologisms, are classified as denotative and connotative loanwords [2]. Denotative loanwords are those required to name new products or new terms created abroad. In other words, in order to fill a lexical gap, denotative loanwords are imported along with the items they denote. Such loanwords are also referred to as necessary loanwords [3]. Connotative loanwords, also called luxury loans [3], on the other hand, are borrowed from countries which are viewed as prestigious or as role-models due to their standard of living, culture, etc.

[2]. According to some research, Anglicisms¹ account for more than 40 % of all loanwords in most European languages which calls for meticulous attention and analysis [2].

2. COMPUTER-RELATED ANGLICISMS IN CROATIAN AND OTHER EUROPEAN LANGUAGES

Science and technology have been undergoing rapid changes in the last two centuries, particularly the field of computer science. Since the USA is one of the main exporters of computer technology, the dominance of the English language in this field is practically inevitable. Due to the fact that the English language imposed itself as the lingua franca even before the technology boom, it seems to be natural that with technological progress, especially with the advent of the Internet, the

¹Filipović defines an Anglicism as an English word adopted from the English language as a foreign word which must adapt in order to be integrated into the system of the receptor language and acquire the status of a loanword. He concludes that an Anglicism is every word taken from the English language which defines an object, idea or concept forming constituent parts of the English civilization. Furthermore, he states that the word must not be of English origin, but must be adapted to the English language system as well as integrated into the English vocabulary [4].

English language has strengthened its dominance and influence upon other languages. In electrical engineering, especially computer science, new terms appear on a daily basis and many languages have difficulties in finding appropriate equivalents. Accordingly, lexical gaps appear. Filipović [4] emphasizes three different methods usually used to fill those lexical gaps: a) a new word is formed based upon the existing elements of the native language; b) a new word is borrowed from a foreign language; c) the meaning of an existing word is changed or a new meaning is added to the existing one. In the end, he concludes that linguistic borrowing is the simplest and the most commonly used method because adoption of objects, concepts and ideas of a civilization or culture includes adoption of corresponding terms – foreign words.

However, the latest trends show that linguistic borrowing goes beyond the actual need to fill a lexical gap. Recent research has proved that the English language has not only exerted influence on the lexis of many languages, but also managed to cause changes on the

Croatian, neither of them was able to resist the massive penetration of English terms.

Based on the presented examples in Table 1, it can be observed that English nouns are capitalized when integrated into German. With the exception of "Passwort", "Puffer" and "Prozessor", all other Anglicisms have retained their original English spelling. As with many European languages, orthographically unassimilated Anglicisms are on the increase in German vocabulary after 1945. Furthermore, it can be seen that some words are used both in their original and German spelling, e.g. "Code/Kode". The public view on the penetration of Anglicisms into German is divided. While some scholars like Meyer [in 5] express concern that German is endangered, many other linguists consider it a natural and inevitable tendency, which happens in all other languages. According to Barbour [6], Anglicisms display behavior similar to the Eurolatin lexicon, which has represented a large and growing subset of the German lexicon for centuries, without turning German into Latin or Greek. Still, there are many societies (Gesellschaft

Table 1. A comparison of Anglicisms in various European languages³

Source language	Germanic languages		Slavic languages		Romance languages		Other
	German	Dutch	Croatian	Russian	French	Spanish	
English							
back-up (copy)	Back-up	back-up	back-up	bekap	back-up; desecours, sauvegarden	back-up; copia de seguridad, reserva	bakap
chip	Chip	chip	čip	chip	chip, microplaque	chip	tsip
code	Code, Kode	code	kod	kod	code	código	code, kodhikas
cursor	Cursor	cursor	kursor	kursor	curseur	cursor	kersor
hardware	Hardware	hardware	hardver	khard-ver	hardware; materiel	hardware; material soporte fisico; equipo	khardghuer
software	Software	software	softver	softver	software, logiciel	software	softghuer
password	Passwort, Kennwort	paswoord	lozinka, zaporka	-	mot de passe	password contraseña	password
buffer	Puffer	buffer	bafer	bufer	tampon	buffer	bafer
processor	Prozessor	processor	procesor	protessor	processeur	procesador	prosesoras
to print (out)	ausdrucken	printen	isprintati	-	imprimer	imprimir	ektypono

morphological, syntactic, phraseological and semantic level² which has been causing considerable concern among linguists around the world.

Although only ten examples of computer-related Anglicisms are presented, Table 1 clearly shows that the influx of Anglicisms is a unifying European phenomenon. Despite the fact that some of the selected languages have a strong purist tradition like French and

für deutsche Sprache, Verein für deutsche Sprache, etc.) organized to address the problem of Anglicisms and to create suitable German equivalents. Even though not listed in the "Dictionary of European Anglicisms", some words in Table 1 have German equivalents, e.g. der/das Back-up → die Sicherheitskopie; die Software → das Computer-/Rechnerprogramm. However, if Google, as a kind of disorganized super corpus can be trusted, it seems that, for example, German speakers prefer the Anglicism "Software" to its German counterparts "Computer-/Rechnerprogramm". If the words "die Software", "das Computerprogramm" and "das Rechnerprogramm" are typed in Google, it yields 7,390,000, 522,000 and 10,400 results, respectively. Moreover, Onysko/Winter-Froemel notice [in 3] that the Anglicism "Computer" is

² For a more detailed analysis on the impact of English on other languages, see B. Drljača Margić, Latentno posuđivanje u hrvatskome i drugim jezicima-posljedice i otpori, Rasprave Instituta za hrvatski jezik i jezikoslovlje 35, 2009, pp. 53-71.

³ Examples have been excerpted from Görlach's "A Dictionary of European Anglicisms".

more frequently used to denote the concept, while the German equivalent "Rechner" is mostly used as a stylistic variant to avoid repetition.

Dutch examples show that the majority of Anglicisms appear in the original English form. The exceptions are the noun "paswoord" and the verb "printen" which has taken the Dutch infinitive suffix -en. Both words, however, have a Dutch alternative, paswoord → wachtwoord and printen → afdrukken, while the other words are used in the English form. Similarly to the situation in Germany, Anglicisms adapted prior to 1945 were, as far as spelling and pronunciation are concerned, completely assimilated. Post-1945 loanwords are frequently less thoroughly assimilated, partly because the words became familiar in spoken as well as in written language (via the media, in advertising, as trade names, etc.) and partly because the knowledge of English has increased. Younger speakers now tend to adopt loanwords in their original phonetic form [7]. Despite the fact that there were some occasional purist activities in the Netherlands, primarily aimed against German and French influence, Dutch seems to be a rather open language for foreign words. However, the number of Anglicisms has become a matter of some concern because Dutch is feared to lose its identity. In their research conducted in 1989, Claus and Taelde-man [in 7] showed that the number of English words in Dutch dictionaries were on the sudden increase from 1977 to 1984, particularly those related to technology where almost all inventions were expressed by English words. The research was conducted 30 years ago and the situation has dramatically changed ever since. On the other hand, in 1996 Gerritsen [in 7] carried out research among younger (younger than 25) and older (older than 45) on the attitudes towards the usage of Anglicisms in advertisements and concluded that the informants valued the use of English positively (the older having a more negative attitude), but that Dutch is less anglicized than one is inclined to think. Another research performed by De Bot at the University of Nijmegen reflects a unanimously more positive attitude towards English, particularly among pupils. Certainly nobody wants to see Dutch disappear, and the position of Dutch is not seen as being directly threatened by English [in 7].

Due to an unfavorable sociolinguistic situation in relation to other languages – Turkish, Italian, German, Hungarian, Serbian, and finally English – purism has had a long tradition in Croatia. As in the case with the majority of languages, Croatian is trying to cope with the massive influx of Anglicisms. In the majority of cases, Croatian has adapted the necessary loanwords according to its phonological and grammatical rules, and created calques based on foreign models [8]. Examples shown in Table 1 represent the tendency of Croatian to adapt loanwords to its orthography. Aside from the noun "back-up", which has a widely accepted Croatian counterpart "sigurnosna/rezervna kopija", all

Anglicisms presented in Table 1 are adapted to the Croatian orthography. Nevertheless, some Anglicisms exist both in their original and adapted form (e.g. bafer → buffer, hardver → hardware, softver → software). Croatian linguists have been constantly trying to coin new words, with a varying degree of success and acceptance (e.g. čip → integrirani krug, sklopnjak, kursor → pokazivač, hardver → sklopovlje, strojna oprema, softver → računalna/programska podrška, bafer → međumemorija, međupohrana, procesor → obradnik, isprintati → ispisati). Even though some of the above mentioned terms like računalna/programska podrška, međumemorija, ispisati have been accepted by computer experts, only a handful of them have caught on in colloquial speech and are primarily used in formal discourse. Tributes to the attempt to coin new Croatian computing terms should be paid to the Croatian linguist Bulcsú László, who compiled an English/Croatian-Croatian/English dictionary of computing terms⁴. Although Croatian purists welcomed László's dictionary, most of the proposed terms were not accepted by computer engineers and the wider public; in fact, many of them were and still are viewed as rather archaic, unusual, even controversial (e.g. hardware – strojevina; software – naputbina, etc.). Drljača-Margić [9] carried out research on the Croatian university students' attitudes towards the use of Anglicisms and their native equivalents. The results showed that Croatian students find the connotative Anglicisms less formal than their Croatian alternatives, while denotative ones are perceived as an important part of the Croatian language in both formal and informal discourse. Furthermore, the students' results indicate a highly positive attitude (72.23 %) towards the use of Anglicisms in the domain of computing and modern technology and often emphasize the close relationship between English and computer science. This attitude poses a challenge for teachers who should try to popularize and encourage the use of native alternatives, at least when there are accepted terms like koncentrator for hub, usmjerivač, usmjernik for router, etc., which are often refused by computer engineering students and perceived as unnecessary, redundant, and even comic.

In the post-Soviet era the influence of Anglo-Saxon culture on everyday life in Russian has been rapidly increasing and compared to the pre-Soviet times, the number of borrowings from English has grown manifold. According to some published data [10], there has been a dramatic increase of the number of Anglicisms in modern Russian, which has grown from 2.57 % of the entire vocabulary stock in the early 20th century to a striking 25 % in 2000. This is not only the result of global trends, but also of the disintegration of the Soviet Union. The western culture, once a forbidden fruit, has become accessible to the average Russian. As with other languages, the highest changes

⁴ "Englezko-hrvatski i hrvatsko-englezki rječnik obavještničkoga nazivlja" - all words were collected from László's article entitled "Pabirci redničnoga i obavještničkoga pojmovlja oko razumnih sustava".

occur in the lexis, while the grammatical system of Russian is less liable to foreign influence. All English words which enter the Russian language fall into Russian grammatical categories irrespective of the existence or absence of such categories in the grammatical system of English [11]. However, a growing phenomenon is the hybridization of Russian words which involves full transliteration of Cyrillic characters into Roman ones or, more often, partial transliteration where one or several letters are replaced with the letters of the English alphabet (e.g. ЖАРА) [12]. Regarding Anglicisms in Table 1, some have a Russian counterpart, e.g. *backup* → *резерв*, *chip* → 1 *кристалл*, 2 *интегральная схема*, *khard-ver* → *аппаратные средства*, *softver* → 1 *программное обеспечение*, 2 *программные средства*, *password* → *пароль*.

Despite the laborious effort of the French Academy (Académie Française) to coin French equivalents for English neologisms (e.g. *back-up* → *sauvegarder*, *chip* → *microplaquette*), a comprehensive arsenal of French computer terms exists – far more than in other Romance languages [13]. The Academy's coinages have in some notable instances managed to impose themselves, as in the case of “*le logiciel*” and “*le matériel*” which are certainly more frequent than “*le software*” and “*le hardware*”. On the other hand, not all French computing coinages have succeeded to be accepted by the wider public. “*Le shareware*” and “*le freeware*” are far more likely to be found than “*le partagiciel*” and “*le graticiel*”, and the coinages “*le fureteur*” and “*le butineur*” have made little progress against “*le browser*”. In some cases, current usage alternates between the French term and the Anglicism, as in “*le fichier attaché*” or “*l'attachment*”, “*le lien*” or “*le link*”, “*la Toile*” or “*le Web*” [13].

With almost 400 million speakers and the status of the second most widely spoken language, Spanish has been often described as one of the few languages which can compete with English. In Spain as in France, there is the Real Academia de la Lengua that focuses on linguistic purity and coinage of native terms. Various native computer-related coinages have met with a fair degree of success, e.g. “*reenviar*” for “*to forward*”, “*servidor*” for “*serve*”, “*navegador*” for “*browser*”, “*buscador*” for “*search engine*”. On the other hand, some coinages have not managed to impose themselves as widely-accepted alternatives as in the case of “*el hardware*” and “*el software*” (for the latter, “*el logicial*” exists in theory but it is rarely found). In some cases there is parallel usage of the native and English terms: thus, “*la Red*” (literally, “*the network*”) alternates with “*la Web*” and “*Internet*”; the pseudo-Anglicism “*el web*” for “*website*” is common, though “*el sitio*” also exists; and for the noun “*link*” and the verb “*to link*”, “*el link*” and the awkward coinage “*linkear*” share the field with the far more Spanish “*enlace*” and “*enlazar*” [14]. Furthermore, there are examples when the Anglicism pushes out the already accepted Spanish equivalent. Thus, the mouse, which was always the literal translation “*el ratón*”, is now replaced by the borrowing “*mouse*” or “*maus*”, and “*laptop*” is beginning

to be used in place of “*portátil*”. Even the terms “*palm-top*” and “*pocket PC*” are competing against “*ordenador de bolsillo*” [15]. However, computing terms in Spanish seem to exhibit a laudable resilience to the influx of Anglicisms. The reason for this relative success may include not only linguistic purism, but also the pragmatic need to make the IT-language accessible to those who do not understand English [14].

Despite its numerous institutions (e.g. Academy of Athens, the Foundation Manolis Triantaphyllides, the Foundation for Hellenic Culture, etc.) and their effort to manage the influence of English on Greek, the morphology of loanwords, their frequency of use and the coinage of Greek words for new technological concepts, the influence of English on Greek is significant, particularly in the field of technology. Whereas English is used extensively in the spoken language, in written Greek there is a tendency to use a Greek word rather than an English one where both possibilities exist. For example, while the majority of Greeks would use the word *κομπιουτερ* (“*computer*”) in spoken Greek, the expression *υπολογιστής* or “*electronic computer*” is favoured in written Greek. On the other hand, words like “*e-mail*” and “*fax*” have entered the administrative language although there are native equivalents (“*electroniko tachydromeio*” and “*teleomoiotypia*”). Moreover, the majority of newspapers and magazines employ Anglicisms, in many cases even in the Roman alphabet, even when there are suitable Greek alternatives [16]. Tsagouria [16] also addresses the ambivalent reaction of the wider public to the use of Anglicisms. She makes a distinction between those Greeks who are motivated by xenophobia and those motivated by xenophilia. Many Greeks adopt a hostile attitude towards the widespread use of English mostly because they feel that the Greek languages is rich and flexible enough to coin new precise and functional Greek words for the most recent technological innovations. This reaction originates from a wider attitude according to which Greek tradition and Greek civilization are the victims of destruction brought about by the European cultural “*invasion*” of Greece. Also, the notion of the importance of Greek to European languages is deeply rooted among Greeks. On the other hand, many Greeks use English words in spoken and written discourse even when there is a well-established Greek alternative, which may be the reflection of cosmopolitanism; however, in most cases, it reflects only the vanity of the speaker who likes to demonstrate his/her knowledge of foreign languages.

Considering their widespread usage in most European languages, many Anglicisms, particularly computer-related ones, have acquired the status of internationalisms⁵ in other languages [18], [2], [19].

⁵ According to Ivir [17], internationalisms are words which, based on their character and strong presence in other languages, can be considered as international. This means that they do not belong to a specific language (although, they are usually of Greek or Latin origin), but exceed the boundaries of every single language and find their place in the lexical system of a larger number of languages.

Internationalisms are considered as desirable and necessary by many linguists, especially in scientific terminology, which must be precise and unambiguous. Because of the international connection in science and the omnipresence of internationalisms in many languages, Turk [in 18] emphasizes that internationalisms are not only possible and permissible, but also necessary in scientific style, especially if there are no functional Croatian equivalents or in case the Croatian word is semantically shifted compared to its international counterpart. Silić [in 18] considers the formational structure of internationalisms transparent, simple, rational and economical and adds that their general meaning is not burdened with individual meanings. He concludes that their presence does not create disturbance to science, which is international in its nature. Belaj [20] emphasizes that Croatian words very often lack the wide contextual-semantic field characteristic of internationalisms and Anglicisms which, in an appropriate context, allows of their status equivalent to their Croatian counterparts. In that case, the Croatian language has to be normative classifying internationalisms and Anglicisms based on the model of radial categories as more neutral in wording and thus as more peripheral members of loanwords in the standard language. Moreover, he states that apart from cases where both the loanword and the Croatian word, depending on the context, find their place in the standard language, there are also a substantial number of Anglicisms where a translation is not possible, and may even be pointless and dangerous. Here, he refers to "skener", "hardver", "softver", etc. which, despite various attempts to be replaced with native words, still have not found Croatian alternatives that would cover all the semantic properties and connotations carried by the original model.

3. ANGLICISMS AND LEVELS OF ADAPTATION IN CROATIAN

When an English word or term is adopted in order to fill a lexical gap, the development of a model, i.e. a foreign word into a replica, begins. It means that a foreign word must conform to the rules of the receptor language. This represents a very laborious process which includes different phases until the foreign model completely adapts to the system of the receptor language. Filipović [4] refines the original integration process by introducing primary and secondary adaptation. Primary adaptation takes place when the transfer of the word from a donor into a receptor language begins. However, the integration process does not stop here. It continues under conditions laid down by the receptor language system. This is what we call secondary adaptation [4]. Filipović analyzes Anglicisms on four levels: orthographic, phonological, morphological and semantic. Nonetheless, he does not make a distinction between primary and secondary adaptation on the orthographic level [4].

3.1. ADAPTATION ON THE ORTHOGRAPHIC LEVEL

The adaptation of an English model into an Anglicism begins on the orthographic level. According to Filipović [4], there are four possibilities to form the orthography:

1 based on the pronunciation of the corresponding English model

Ugradnjom čipa (Eng. chip [tʃɪp]) u novu elektronsku tehniku i digitalnu TV (DTV), svatko od nas je stavljen pred sudbonosnu kušnju izbora...

...što je najmanje od testiranih kamera koje imaju trostruki zum (Eng. zoom [zu:m]).

2 the Anglicism follows the orthography of the English model without any change

Računalo ima ugrađeni modem (Eng. modem [ˈmɒdəm])...

...jedan klik će nas odvesti na određeni link (Eng. link [lɪŋk]).....

Najnovija generacija robota (Eng. robot [ˈrəʊbɒt]) može izvršavati brojne funkcije...

3 the Anglicism follows partly the pronunciation and partly the spelling of the model in either order

Slabiji model nazvan je Keon, a ima bateriju kapaciteta 1.580 mAh, i 3 megapixelsnu (Eng. megapixel [ˈmegəpɪksl]) kameru.

Prvo je to bio memorijski kontroler koji je tradicionalno bio dio čipseta (Eng. chipset [tʃɪpsɛt]) na matičnoj ploči.

4. the Anglicism is influenced by an intermediary language (e.g. German) through which the model has passed on its way to the receptor language

Klijent-poslužitelj model je uspješno primijenjen kod dijeljenja različitih resursa: elektronske pošte. - Eng. client [ˈklaɪənt] through Ger. der Klient [kliˈɛnt]

The author points to the word *klijent* which is of Latinate origin, but has entered the Croatian language through German as an intermediary language and has existed in Croatian for many years. However, the word *klijent* appears in a new syntagmatic relation *klijent-poslužitelj* which is a calque of the English syntagm *client-server* and can therefore be considered an Anglicism.

It has been noticed that in Croatian popular magazines and scientific journals a large number of Anglicisms still appear in an orthographically unassimilated form, which is not in line with the Croatian standardization norm according to which Anglicisms should be spelled following the English pronunciation. However, there are many English models whose integration

is complicated due to their phonemic arrangement which is incompatible with the Croatian language system. Therefore, it is better to keep the original spelling of such Anglicisms than to create “monsters”, as Mihaljević [21] likes to call them, as in the case of *sirkitsvičd* (Eng. *circuit-switched*).

...radi se o **circuit-switched** tehnologiji.

...sve što treba napraviti je mali **upgrade firmwarea** na GSM telefonu.

Osmoportni **switch** nudi fast **ethernet** veze prema korisnicima, uz gigabitni **uplink** prema serveru ili **backboneu**.

Furthermore, there are instances of parallel usage of the adapted and unadapted Anglicism.

... uređaji mogu biti i **smartphones** komunikatori.

Ovog mjeseca u Bugovoj nagradnoj igri imate priliku osvojiti **smartfon** godine prema vašem izboru.

3.2. ADAPTATION ON THE PHONOLOGICAL LEVEL

Transphonemisation is the process of forming pronunciation, i.e. replacing the phonemes of the English model with the phonemes of the receptor language based on pronunciation similarities. There are three categories that account for changes that can occur when integrating an Anglicism on the phonological level:

Zero transphonemisation concerns those phonemes of the English language whose description corresponds to the phonemes of the receptor language, i.e. both the model and the replica are pronounced in the same way.

In contrast to zero transphonemisation, *partial or compromise transphonemisation* includes cases where elements of the receptor language differ from the phonological description of the English language. In other words, the pronunciation of the Anglicism is only partially equal to the English model.

Table 2. Adaptation on the phonological level

Adapted Anglicisms	
Zero transphonemisation	... klik na neku ikonu dodaje sjenu objektu... ...što je najmanje od testiranih kamera koje imaju trostruki zum .
Partial transphonemisation	Rezolucija kojom snima je 1280x1024 piksela ...
Free transphonemisation	U HTML editoru je potrebno dosta raditi kako bi grafika imala neku funkciju... ...omogućavajući vrlo jednostavan razvoj i promjenu sučelja bez kompiliranja izvornog koda .

In the end, *free transphonemisation* is when the pronunciation of the English model is composed of elements which do not have equivalents in the sound system of the receptor language. Subsequently, transphonemisation is not performed according to phonetic principles, but it is based on orthography or some other extralinguistic principles.

The pronunciation of phonologically adapted Anglicisms *klik* and *zum* equals the English source words *click* [klik] and *zoom* [zu:m]. Phonemes in the word *pixel* are partially equivalent to the English model *pixel* [ˈpɪksl]. Finally, the English models *editor* [ˈeditə(r)] and *code* [kəʊd] differ in pronunciation from the Croatian equivalents *editor* and *kod*, since the English sounds [ə(r)] and [əʊ] do not exist in the Croatian phonological system.

3.3. ADAPTATION ON THE MORPHOLOGICAL LEVEL

Transmorphemisation refers to the substitution of morphemes of the English word with morphemes of the receptor language. This process is subdivided into three types:

Table 3. Adaptation on the morphological level

Adapted Anglicisms	Primary	Complete secondary
Zero transphonemisation	Računalo ima ugrađeni modemjedan klik će nas odvesti na određeni link ...	Svaki POP ima modemski server... ... možemo linkati točno određeni dio dokumenta... ... posebna podrška za naprednije tipove linkanja ovisno u kojem prozoru će se linkana stranica otvoriti...
Compromise transmorphemisation	...brojni korisnici si ne mogu priuštiti skupi SCSI kontroler programerima treba omogućiti brži razvoj...	... kontrolerska konzola omogućuje lakše igranje... ... programerski stručnjaci su otkrili zaraženi program...
Complete transmorphemisation	... aplikacije mogu komunicirati s mobilnim uređajima.	... aplikacijski server omogućuje pokretanje aplikacijskih programa...

Zero transmorphemisation is when an English source word is borrowed by the receptor language as a free morpheme with a zero bound morpheme, i.e. when the citation form of an Anglicism corresponds to the English model from the morphological point of view.

Compromise transmorphemisation is partial transmorphemisation which involves Anglicisms retaining suffixes of the English model which do not conform to the morphological system of the receptor language.

Complete transmorphemisation is when a bound morpheme of the source word is replaced by a bound morpheme of the receptor language with the same function and meaning as the original morpheme. This process is carried out in two stages. The first stage is called *primary adaptation* and refers to instances when the English model does not change its part of speech in the receptor language. In other words, an English noun remains a noun in the replica, etc. The second stage is *secondary adaptation* when the English model changes its part of speech in the course of linguistic borrowing, e.g. an English noun is borrowed as a noun, but in the course of time a verb, an adjective, etc. is derived from the noun.

English words *modem* and *link* are adopted as free morphemes so there is no need for morphological adaptation. However, they go through the process of secondary adaptation which results in adjective derivations *modem+ski*, *link+an*, the verb derivation *link+ati*, and the gerund *link+anje*. Compromise models *kontroler* and *programer* keep the English suffix *-er* and are not replaced by a Croatian suffix of the same meaning. Adjective derivations *kontroler-ski* and *programer-ski* are formed by adding the adjective suffix *-ski* to the compromise model. An example of complete adaptation is represented by the noun *aplikacija* where the English suffix *-ation* (*Eng. application*) has been replaced with the Croatian suffix *-acija*. The adjective *aplikacijski* presents an example of complete secondary adaptation.

Apart from forming a citation form of an Anglicism, morphological categories of the donor and receptor language must be adjusted.

NOUNS

Word formative adaptation is exemplified by the orthographically unadapted gerund *cacheiranje* formed by adding the Croatian suffix *-iranje* to the English noun *cache*. Next, we have the noun *linuksaš* ("a person who is very good at operating the OS Linux") made by adding the suffix *-aš* to the orthographically adapted noun *linuks* and the diminutive *serverčić* formed by adding the suffix *-čić* to the noun stem *server*. All examples given in the morphological category of gender *quality control*, *mailbox*, and *interface* are masculine thus supporting the theory of "masculine tendency" according to which most Anglicisms are assigned the masculine gender when assimilated into the receptor language [4]. Furthermore, examples provided in the category of number and case do not deviate from the rules of the receptor language. The plural noun *goodiesi* represents an interesting example since it is formed by adding the Croatian suffix *-i* to the English plural form *goody* → *good+ie+s*. Ultimately, unadapted Anglicisms are the gerund *clustering* which retains the English suffix *-ing* and the noun *smartphones* taking the English plural suffix *-s*.

Table 4. Word-formative adaptation and adaptation of morphological categories of nouns

Adapted Anglicisms		
Word-formative adaptation		Zbog novog algoritma za cacheiranje datoteka... ...posebno od tehnički potkovanih linuksašaod najmanjih serverčića za radne grupe...
Adaptation of morphological categories	gender	Uz ovakav quality control nije ni čudo da je rezultat izvrstan. ...korisnik može mijenjati postavke svojeg mailboxa ... Interface se preselio u unutrašnjost...
	number	...potrebnim dodacima i service packovimas tiskanim i inim goodiesima ... Svi ostali- power useri , geekovi ...
	case	Shematski prikaz shreddera s rotorom... Ostali metali mogu se izdvojiti separatorom vrtložnih struja... Prilikom otvaranja webhostinga ...
Unadapted Anglicisms		
		Replikacije između DB2 baza kao i clustering na različitim platformama... ... uređaji mogu biti i smartphones komunikatori.

ADJECTIVES

Table 5. Word-formative adaptation and adaptation of morphological categories of adjectives

Adapted Anglicisms		
Word-formative adaptation		...konfiguriranje defaultnih HTTP servera... ... 17-inčni LCD monitor nudi dvije zanimljive manipulacije slikom...
Adaptation of morphological categories	gender	...konfiguriranje defaultnih HTTP servera... ... 17-inčni LCD monitor nudi dvije zanimljive manipulacije slikom...
	number	Serijski 1650 multifunkcijskih testera ispituje polaritet...
	case	...ako ne koristi antivirusnu zaštitu... ...nude desktop-to-desktop digitalnu uslugu... Već spomenuti procesor koji upravlja laserskom zrakom...
Unadapted Anglicisms		
		...radi se o circuit-switched tehnologiji. ...zbog lakše izrade data oriented stranica... ...napredne mogućnosti poput multiuser podrške...

Examples of word formative adaptation are *defaultni* and *17-inčni* to which the Croatian suffix *-ni* is added. Morphological adaptation of gender, number and case is performed by adding the Croatian suffixes to the borrowed English models. An example of comparison of

adjectives has not been found. Unadapted adjectives are *circuit-switched* and *data oriented* which, apart from being orthographically unadapted, keep the English suffix *-ed* used for forming the past participle. They are both verbs functioning as adjectives. In the end, the word *multiuser* is given which is a noun that acts as an adjective.

VERBS

Table 6. Word-formative adaptation and morphological adaptation of verbs

Adapted Anglicisms	
Word-formative adaptation	...pa čak ih i uploadati na server... ...u tom slučaju nećete moći bootati ... Za upute kako patchirati kernel...
Adaptation of morphological categories	Mountajte image datoteku forvardirajte na neki e-mail račun...
Unadapted Anglicisms	

Word formative adaptation is exemplified by *uploadati*, *bootati* and *patchirati*. In the case of verbs *uploadati* and *bootati*, the infinitive suffix *-ati* is added to the orthographically unadapted English models *to upload* and *to boot*, and the infinitive suffix *-irati* is added to the orthographically unadapted verb *to patch*. On the morphological level, verbs conjugate following the Croatian rules (*mountajte*, *forvardirajte*).

3.4. ADAPTATION ON THE SEMANTIC LEVEL

The third level of adaptation includes the semantic analysis of Anglicisms. As in the case of morphological analysis, the adaptation on the semantic level is based on a distinction between primary and secondary adaptation, which implies changes in meaning of the English model in the process of its integration into the receptor language. Primary adaptation takes place when the English source word is transferred into a receptor language. In addition to phonological and morphological adaptation, the model must adapt its meaning as well. There is a tendency that the model first undergoes the process called *restriction of meaning* and after being integrated into the receptor vocabulary, i.e. after being accepted and used as a native word, it goes through the process of secondary adaptation which includes *expansion of meaning*. Furthermore, Filipović [4] distinguishes *zero semantic extension* according to which the replica retains the meaning of the English model.

Speaking of *restriction of meaning*, which falls into the category of primary adaptation, *restriction of meaning in number* and *restriction of meaning in a semantic field* are distinguished. An Anglicism mostly adopts only one of several meanings of the English model thus satisfying its need to fill in a lexical gap. This process

is called *restriction of meaning in number*. In contrast to *restriction of meaning in number*, *restriction of meaning in a semantic field* occurs rarely. Some Anglicisms which have a restricted meaning compared to the English model show a tendency to further restrict the adopted meaning. In other words, a twofold restriction occurs, i.e. restriction in number and restriction in a semantic field.

As already mentioned, in addition to primary adaptation or restriction of meaning, an Anglicism goes through the secondary phase of adaptation which is called *expansion of meaning*. Expansion of meaning is subclassified into *expansion in a semantic field* where an Anglicism acquires a new meaning which differs from its English model, and *expansion of meaning in number*, the process when an Anglicism expands the number of its meanings after it has been integrated into the receptor language.

Table 7. Adaptation on the semantic level

Zero semantic extension	Računalo ima ugrađeni modem ... Najnovija generacija robot a može izvršavati brojne funkcije...
Restriction of meaning	...jedan klik će nas odvesti na određeni linkuvelike će vam pomoći browsanje internetom...
Unadapted Anglicisms	U tom slučaju nazovite operatera koji će vam pomoći pri rješavanju problema.

Anglicisms *modem* and *robot* have completely retained the meaning of the English model. Accordingly, the word *modem* means "a device that connects one computer system to another using a telephone line so that data can be sent". *Robot* acquires both meanings of the English model: 1. a machine that can perform the actions of a person and which operates automatically or is controlled by a computer; 2. (*esp derog*) a person who seems to behave without thinking. Anglicisms *link* and *browsanje* have restricted their meaning compared to the English source word. The noun *link* has the following meanings in English: 1. a connection between two or more people or things; 2. a relationship between two or more people, countries or organizations; 3. a means of travelling or communicating between two places; 4. a place in an electronic document that is connected to another electronic document or to another part of the same document; 5 each ring of a chain. The Anglicism acquires two meanings 1. a means of travelling or communicating between two places; 2. a place in an electronic document that is connected to another electronic document or to another part of the same document. The gerund *browsanje* formed from the verb *to browse* has several meanings: 1. to look at a lot of things in a shop/store rather than looking for one particular thing; 2. to look through the pages of a book, newspaper, etc. without reading everything; 3. to look for information on a computer, especially on the Internet; 4. (of cows, goats,

etc.) to eat leaves, etc. that are growing high up. The gerund *browsanje* takes over the meaning required to fill in the lexical gap, and that is "to look for information on a computer, especially on the Internet". The Anglicism *operater* is one of the few Anglicisms which undergo the process of expansion of meaning relative to its English model which means: 1. a person who operates equipment or a machine; 2. a person who works on the telephone switchboard of a large company or organization, especially at a telephone exchange; 3. a person or company that runs a particular business; 4. a person who is skilful at getting what they want, especially when this involves behaving in a dishonest way; 5. a symbol or function which represents an operation in mathematics. The meaning "ship owner; ship company" is added to the Croatian replica.

4. ENGINEERING TERMINOLOGY AND STANDARDIZATION ISSUES

Electrical engineering, especially its branch of computer science, belongs to a very dynamic field where new terms sprout up on a daily basis. A problem that has to be addressed is that engineering experts are the first to come into contact with professional literature in English. Since they need to label new terms, experts very often reach out for English words which, during a short period of time, enter wide usage. This is due to the fact that computer science is an interdisciplinary field, which penetrates into various professions and everyday life, so that computer terms are quickly accepted by a large number of people of different professions. Accordingly, it is difficult to root out a deeply entrenched Anglicism or to substitute it with a Croatian equivalent. Hence, cooperation of engineering experts and linguists is required before a particular term enters common usage. In an interview for the computer magazine "PC Chip", Silić emphasized that experts are competent for the content of a term, whereas linguists are qualified for the form.

Mihaljević [21] points to main terminology issues concerning the selection of the most suitable term to fill a lexical gap, but also their standardization. One of the main terminology principles is the avoidance of synonymy, which would further burden professional literature. Consequently, the question arises which Anglicisms should be included in dictionaries and in what way they should be dealt with by language standards. In other words, in which cases should particular Anglicisms be replaced by Croatian counterparts and when and in what form are Anglicisms acceptable. Accordingly, in the process of selecting Anglicisms, the following terminology principles should be taken into account [21]:

1. Croatian words should be given preference to foreign words (*sučelje* to *interface*)

2. Internationalisms originating from the Greek or Latin should be given preference to Anglicisms, Germanisms, Gallicisms (*Lat. kompilator* to *Eng. kompajler*)

3. Foreign words that fit into the Croatian language system with respect to phonemic arrangement can be accepted in contrast to those which do not and should therefore be replaced by Croatian equivalents. In case no suitable Croatian equivalent exists, the English word should keep its original spelling and should be written in italics or quotation marks (*chip-čip*, *download-preuzimanje*)

4. Widely accepted terms should be preferred to less accepted terms (*tipkovnica* to *slovište*)

5. A term must be adjusted to the phonological, morphological and syntactic system of the standard Croatian language (*očvršće*, not *očvrsje*)

6. Shorter terms should be given preference to longer terms, which represents one of shortcomings of Croatian terms which are often less economical compared to their English counterparts (*sklopnjak* to *integrirani krug*)

7. Words that are more productive with regard to word formation, i.e. appropriate to coin new words, must be favored to those less productive ones (*računalo* – *računalni*, *računalac*, *računalstvo*)

8. The term must not carry more meanings within the same terminology system (e.g. *software* – *programska/računalna podrška*, *programi*, *napudbina*)

5. CONCLUSIONS

Despite the fact that the problem of Anglicisms has been discussed for many years, linguists still express a considerable interest in Anglicisms, especially those relating to computer terminology. This phenomenon is due to its interdisciplinary nature and penetration into various professions and everyday life which makes it not only a problem of technical language, but general language as well. Furthermore, this issue still manages to attract the attention of linguists because Anglicisms pose a challenge for many European languages. Although many countries have been trying to coin native alternatives, only a handful of them enter wide usage. Consequently, considering their omnipresence in many languages, the question arises whether they should be viewed as internationalisms.

Anglicisms are very often found in Croatian popular magazines and scientific journals in the field of electrical engineering and computer science. Sometimes their use is justifiable since the Croatian language does not offer suitable counterparts as in the cases of *clustering*, *aplikacija*, *piksel* or *zum*. However, it has been noticed that Anglicisms are preferred even when there are accepted Croatian equivalents, e.g. *link* – *poveznica*, *shredder* – *drobilica*, *trgač*, *interface* – *sučelje*, *multiuser* – *višekorisnički*, *smartphone* – *pametni telefon*, *separator* – *razdjelnik*, to name but a few. On no account should such practice be accepted.

Following Filipović's theory of adaptation of Anglicisms it can be concluded that in terms of orthography most Anglicisms exhibit a high level of assimilation. Still,

a great number of orthographically unassimilated Anglicisms exist which is sometimes due to stylistic reasons, i.e. phonemic arrangement which is incompatible with the Croatian language system (e.g. **sirkít-svičđ*). Adaptation on the phonological level depends largely on the similarities and differences of the phonological system of the donor and receptor language. In other words, Anglicisms are adapted to the extent allowed by the phonemic inventory of the Croatian language, i.e. if there are no phonemic equivalents in the Croatian language, transphonemisation takes place on the basis of orthography or some other extralinguistic principles. Furthermore, most Anglicisms taken from Croatian popular magazines and scientific journals have been adapted on the word-formative and morphological level. There are some cases of unadapted Anglicisms especially of English gerunds as well as nouns and past participles in the attributive function. Semantically speaking, Anglicisms, particularly computer-related ones, show a tendency to acquire only the meaning necessary to fill a lexical gap.

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