University of Szeged, Faculty of Arts
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Investigation of English language contact-induced features in Hungarian cardiology discharge reports and language attitudes of physicians and patients

Summary of PhD Dissertation

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1. Introduction

Since the 1950s English has become not just an important language in the field of medicine, but the predominant language of health sciences.

The aim of this study is to describe a field, namely, a subregister of the Hungarian language of medicine, to reveal the English contact-induced features in this specific purpose language, and to investigate the attitude of various discourse communities affected by it towards the English language. The impact of some major European languages, among them the English language, on Hungarian and its lexicon has already been investigated, however, it has been looked at mainly from a puristic aspect so far and little sociolinguistic or contact linguistic research has been done in the field yet.

This research is focused on only one field of medicine, cardiology, which was selected for a closer investigation, on the one hand, as it is a technologically sophisticated, professionalized, institutionalized, and highly invasive medical discipline. On the other hand, heart diseases are the leading causes of death in several countries of the world including Hungary. Numerous studies have been published on medical English, but studies on medical Hungarian are limited in number, and very little has been published on the language of cardiology.

Hospital discharge reports (or summaries) are written documents prepared when the patient is discharged from a health institution after receiving management. Writing these documents is part of the daily routine of practising physicians. Hospital discharge summaries are infrequently studied from a linguistic aspect, for these documents are not readily available for the public. However, this is the (tertiary) physician's major tool of written communication towards the patient, and towards colleagues in primary and secondary care being involved in the further management of the patient.

2. Methods

In general, this dissertation focuses on the influence that the English language has on the Hungarian language of cardiology and on what the attitudes of physicians and their patients are toward this influence.

Two distinct methods are applied: the research and analysis of English language contact-induced features in the cardiological discharge reports and the analysis of data gained

through semi-structured interviews with members of the medical community (cardiologists and family physicians) and their patients. The combination of data collected with the two methods intends to provide better insight into present day Hungarian for cardiological purposes.

Under Method 1, the University of Szeged Corpus of Cardiological Discharge Reports (USCCDR) based on altogether 234 randomly chosen full length hospital discharge reports (216,703 words) taken from the field of cardiology was used. These documents were prepared in 2005, 2007 and 2009. All these reports were written at the Department of Cardiology, University of Szeged by Hungarian cardiologists.

Data collection was performed manually, then identified data were categorized, and their statistical analysis was performed by a computer program developed for the research. Statistical data were then transported into an Excel data table in MS Excel 2007.

On the basis of Haugen (1950), Weinreich (1953), Kontra (1981, 1982), Lanstyák (2000, 2006) and previous research results of the author the dissertation, the following categories were set up for data categorization and evaluation:

1. borrowing of orthographic features (spelling, capitalization, and punctuation)
2. lexical borrowing (loanwords proper, assimilated loans, eponyms, and acronyms)
3. semantic borrowing (loan translations, loanblends, and loan creations)
4. grammatical features (e.g. use of definite articles, and passive voice)
5. other features (e.g. rhetorical and generic features).

Data identified in USCCDR were compared with those provided by non-technical and medical dictionaries:

a. Bakos, Ferenc. 2007. *Idegen szavak és kifejezések szótára* [Dictionary of foreign words and expressions]. 2007. Budapest: Akadémiai Kiadó.
b. Benjámin, Katalin. 2006. *Brencsán orvosi szótár* [Brencsán medical dictionary]. (4th edition). Budapest: Medicina Könyvkiadó.
c. Benkő, Loránd. 1967. *A magyar nyelv történeti etimológiai szótára* [Historico-etymological dictionary of the Hungarian language]. Budapest: Akadémiai Kiadó.
d. Fábián, Pál and Magasi, Péter. 1992. *Orvosi helyesírási szótár* [Medical orthographic dictionary]. Budapest: Akadémiai Kiadó.
e. Lozsádi, Károly. 2006. *Etymologia medica* [Medical etymology]. Budapest: Medicina Kiadó.
f. Merriam–Webster's Advanced Learner's English Dictionary (see website http://www.merriam-webster.com).
g. Mosby's Medical Dictionary. 8th edition. 2009. Amsterdam: Elsevier.

h. Országh, László and Magay, Tamás. 1998. *Angol-magyar nagyszótár* [English–Hungarian dictionary]. Budapest: Akadémiai Kiadó.
i. Pusztai, Ferenc (ed.) 2003. *Magyar értelmező kéziszótár* [The concise dictionary of the Hungarian language]. Budapest: Akadémiai Kiadó.
j. Zaicz, Gábor. 2006. *Etimológiai szótár* [Etymological dictionary]. Budapest: Tinta Kiadó.

The *Magyar irodalmi és köznyelv nagyszótárának korpusza/Magyar történeti korpusz* [Corpus of the academic dictionary of Hungarian/Hungarian historical corpus] was also used for reference to compare the prevalence of data in USCCDR with a non-technical corpus. During the morphological and grammatical analysis of data mainly Kenesei et al. (1998), É. Kiss et al. (2003) and Korchmáros (2006) were relied on.

Under Method 2, semi-structured interviews were carried out with eleven cardiologists working in tertiary and secondary care, six family physicians and eight cardiological patients to reveal their attitude towards the presence and dominance of the English language in the language of cardiology.

Data gained during the semi-structured interviews were used to interpret the results achieved in the 1st phase of the research, and highlight the human factors behind the written data. This phase of the research attempted to identify complex relations from the distinct data to increase the complexity of the examined issue by including context. The results of the two analyses were compared and integrated, generalizations were made and conclusions drawn.

3. Results

English is the international language used in both written and oral communication between health professionals involved in research. Englishisms are not only present at the lexico-semantic level, but they also affect Hungarian orthography, grammar and the syntactic level of bilingual physicians.

In the Hungarian language of cardiology, term formation is mainly produced by lexical borrowing and semantic borrowing from English. Besides extensive borrowing from English, another feature of the Hungarian language of medicine is that some Latinate words, especially adjectives and verbs, have recently become more widely and frequently used, e.g. *ineffektív* ‘ineffective’, *intenzifikált* ‘intensified’, *lokalizál* ‘localize’. As these words are frequently used in the English language of medicine, their increased frequency in the

Hungarian hospital discharge reports can also be attributed to the intensive effect of the English language.

Lexical changes due to contact involve not just direct importation of words (Thomason 2003) but a variety of other processes leading to innovations in the lexicon of the Hungarian language: borrowed English loanwords are combined with Hungarian suffixes, become assimilated morphologically to the Hungarian language, and expand vocabulary in other word classes as well, e.g. E n/v *stent* > H n *stentelés* 'stenting', word root *stent* + verbal thematizing suffix *-(e)l* + nominal derivational suffix *-és*, L/E v *elongate* > H adj *elongált* 'elongated', word root *elongál* + adjectival suffix *-t*, E n/v *trigger* > H v *triggerel* 'to trigger', word root *trigger* + verbal derivational suffix *-(e)l*. Morphological adaptation may seem difficult as Hungarian has complex rules involving case and number, but, in many cases, the borrowed words are treated like Hungarian word roots of equivalent categorical status, and they take the bound morphology and other properties appropriate to the class they are assigned to.

English lexical borrowings are integrated to varying degrees into the orthography, morphology, and syntax of the Hungarian language. They are also subject to different kinds of semantic change. Many of the borrowings are not strict lexical borrowings but innovations that have no counterparts in the source language: loan substitutions. Few borrowed words have shown no semantic change. In most cases semantic narrowing can be seen, the borrowed word (lexeme) has retained only one or two of its original (English) sememes, when used in the Hungarian language of medicine, e.g. E *support* has 3 sememes, whereas H *szupport* has only one sememe in medical Hungarian: *a mechanism or arrangement that helps keep something else functioning*. After the borrowing process has taken place, the borrowed item (the English word) may lose (semantic narrowing), change it/them (semantic shift) or develop new meanings (semantic widening) in the Hungarian language of medicine, e.g. E v/n *burst* 'to break suddenly/a sudden break while under tension or expansion' > H n *burst* 'sorozatos külső ingerület' 'serial external stimuli'. Borrowings are generally eligible for the same type of semantic changes as native words, i.e. metonymic extension, metaphorical shift, polysemous extension, or loss of a polysemous meaning.

Unassimilated loanwords (e.g. *guided, spike, upgrade*) and semantic borrowings such as loan translations (e.g. *mélyvénás* 'deep vein', *sószegény* 'low salt', *várólista* 'waiting list') and loan blends (e.g. *echodús* 'echo rich/dense', *pacemakertasak/-zseb* 'pacemaker pouch/pocket', *vérnyomáskontroll* 'blood pressure control') make up the largest portion of English contact-induced changes in the cardiology discharge reports.

The majority of these terms are nouns (n=62): nouns proper, e.g. *branch, graft, stent*, or nominalized verbs, e.g. *kinking, mapping, stentelés* 'stenting'. Noun compounds are also very common, in which a noun is used to modify the head noun, both in loanwords proper, e.g. *end stage, entrainment mapping*, and in loan substitutions, e.g. *ágynyugalom* 'bedrest', *szívhalál* 'cardiac/heart death', *tamponade jelek* 'tamponade signs'. The 4 most frequently used nouns – considering their derived forms as well – are: 1. *stent* with altogether 282 occurrences, 2. *block/blokk* with altogether 240 occurrences, 3. *pacemaker* with altogether 211 occurrences, and 4. *pace* with altogether 194 occurrences.

Adjectives are the second most frequently borrowed terms forming only a fragment of all lexical and semantic borrowings, e.g. *gyógyszerkibocsátó* 'drug releasing', *intenzív* 'intense', *sick, slow-fast, tilt*, *tünetmentes* 'symptom free/asymptomatic'. The 5 most frequently used adjectives were: 1. *panaszmentes* 'symptom free/asymptomatic' n=74, 2. *diffuse/diffúz* and *lobmentes* 'inflammation free' n=50, 3. *koleszterinszegény* 'low cholesterol' n=31 and 4. *invazív/invasive* 'invasive' n=22.

From the borrowed word groups verbs were the least frequently borrowed items. Only 11 borrowed verbs have been identified altogether in the discharge reports, all of them are assimilated loanwords. The 4 most frequently used borrowed verbs are 1. *pozicionál* '(to) position' n=16, 2. *detektál* '(to) detect' n=14, 3. *diszkonnektál* '(to) disconnect' and *provokál* '(to) provoke' n=9 and 4. *lokalizál* '(to) localize' n=5.

English medical initialisms (especially acronyms) are very frequently transferred into the Hungarian language of cardiology. The 4 most frequently used borrowed acronyms are 1. *SEC* 'spontaneous echo contrast' n=375, 2. *LAD* 'left anterior descending' n=355, 3. *INR* 'international normalized ratio' n=260, and 4. *MCH* 'mean cell hemoglobin' n=248.

Borrowed orthographic, grammatical and syntactic features are not as varied as the above described lexical and semantic borrowings, but the number of their appearance is very high. Each cardiological discharge report contained the English-type decimal separator and the capitalized L for liter. Capitalized L for liter has altogether 1,246 occurrences in the 234 discharge reports.

Although the impact of English language contact on grammatical structures in the discharge reports is less than that on lexical ones, certain contact-induced grammatical/syntactic features can be identified in the former as well. The frequency of impersonal structures is unusually high in the discharge reports, e.g. *ultrahang jobb oldali nephrolithiasist igazolt* 'ultrasound has revealed nephrolithiasis on the right side', i.e. the physician performing an ultrasound examination found that the patient has nephrolithiasis. On

the other hand, the passive and other impersonal structures are employed as a strategy for avoiding the use of personal object pronouns, i.e. avoiding having the patient as the direct object, e.g. *magasvérnyomás, hyperlipidaemia ismert* 'high blood pressure, hyperlipidemia are known', i.e. the patient suffers from high blood pressure and hyperlipidemia. In most discharge reports the agent of the sentence (the physician or the patient) is hidden, i.e. agentless sentences are used, or the agent is referred to as an institution, e.g. *Ügyelet járt kinn nála* '[patient] was visited by the medical duty service', i.e. a physician who works for the medical duty service visited the patient, or *OMSZ hozta az ambulanciára* 'National Ambulance Service has brought [the patient] to the outpatient department', i.e. health workers from the National Ambulance Service transferred the patient to the outpatient department.

Internationalization is an increasingly important factor in scientific writing. Changes in modulation and data organization of the discharge reports were identified pointing toward efforts to internationalize the rhetorical and generic features of this text type: hedging and defocusing of agents appear in the Hungarian reports, and new subheadings are introduced (e.g. *távolabbi kórtörténet* 'past medical history') to follow the structure of the English/American hospital discharge reports more closely.

Loanwords proper, regardless of unassimilation, may be embedded into the Hungarian morphological system, i.e. may act as word roots in accordance with the Hungarian syntax rules or as roots taking over Hungarian suffixes (Fenyvesi 2005). Speakers may handle them as foreign words putting a hyphen in writing between the unassimilated root and the Hungarian suffix (e.g. *flow-t* 'flow (accusative)', *flow-val* 'with flow') or considering them loanwords and writing them without a hyphen (e.g. *grafttal* 'with graft/grafting', *pacelés* 'pacing'). Thus, morphological assimilation can precede orthographic and probably semantic assimilation.

Variation in the amount of integration may also depend on the 'degrees of bilingualism'; a loanword can be subject to continuous interference from the source language to the other language, so that different writers use different forms of the same loanwords (cf. Haugen 1950). As a result, various orthographic and morphological realizations of the same word can coexist in the same discourse community.

Factors influencing the degree of integration of loanwords into the Hungarian language of medicine can be linguistic or extra-linguistic relating to the speakers' attitudes and frequency of use of the loanwords. One of the factors influencing integration is the linguistic nature of the loanword itself, whether it conforms to the orthographic and morphological patterns of the Hungarian language.

When and for what the English language is used by physicians has been asked during semi-structured interviews. Attitudes of the members of the Hungarian medical discourse community and of their patients toward the English language, the English language contact-induced change and the motives for the borrowing have been analyzed with Method 2.

Professional groups are formed through the establishment of an internal role structure, group identity, group attitudes, and group norms. There is a need for professional identity and for separation from the other groups in health care, and this need plays an important role in the construction of the language of cardiologists, and it constantly motivates doctors who want to belong to that group to adapt and be socialized to the group behavior. At the same time, it also means establishing distance from people outside the group, i.e. other physicians or patients.

Hungarian scientists have always had to master themselves in some foreign languages: in the Latin language in each period of Hungarian medical history, the French and German languages between the 18th and 20th centuries, in Russian from the 1950s, and finally, in English since the mid-1980s, however, only Latin, German and English can be considered as lingua francas of certain periods in the history of medicine.

Results of the present study show that each cardiologist (or eleven in total) and most of the family physicians (five out of six) who have been interviewed have studied English, just like one-third of the patients. Physicians use the English language for various purposes: both family physicians and cardiologists read scientific publications in English, but family physicians read mainly in Hungarian and rarely in English, whereas clinicians read almost exclusively in English.

Cardiologists not only read publications in English, but they also prepare their own publications, abstracts, conference papers in English. English also dominates exclusively as the language of PhD dissertations at the Faculty of Medicine in Szeged.

Both groups of physicians have mentioned that they speak English in their daily work when examining non-Hungarian speaking patients, but, again, this is done frequently by clinicians and very rarely by family physicians. Cardiologists are also involved in teaching the students in the English program of the medical faculty, giving both lectures and practicals, they are involved in postgraduate trainings, and colleagues from abroad are trained here by them. When teaching students or colleagues, cardiologists have to mobilize their high-level proficiency in English. Cardiologists also participate in international conferences, where the official language is usually English even if the conference is held in a non-English speaking country.

Patients hospitalized at the Department of Cardiology have also remarked that their doctors spoke in English in various situations: teaching or instructing the foreign students, and talking to colleagues from abroad. Patients seem to be used to doctors speaking in English, and they can understand the situation, however, they tend to be slightly disturbed by the fact that they cannot understand what the cardiologists are talking about at such occasions. Although, they claim that whenever they needed information on their condition or management, they received the explanation in Hungarian.

Both family physicians and cardiologists consider English knowledge very important, however, English is not present in the professional daily life of the former. Cardiologists have a very supportive attitude towards the use of the English language in sciences, since it is considered indispensable in the life of clinicians.

Cardiologists have agreed that a common language is needed in scientific communication, and that this common language should be English, as the medical terminology in English is more concise than, for example, the Hungarian terminology, and somehow functionally more appropriate for them to describe complex investigations and interventions. In addition to using this English-intrinsic argument, cardiologists have explained their positive attitude toward the English language by its utilitarian or instrumental function, i.e. English helps them in gaining rewards both professionally and financially, and, thus, English competence is obviously an advantage in their career. There is another practical reason for favoring the English language: physicians who are younger than 45 studied mostly English as their first foreign language at school, and even at the medical university English was offered to them as the main option of foreign languages.

Family physicians are also aware of the importance of the English language in medicine (they are learning the language or wish to learn it in the future), but they think that at the moment they are not very much affected by it, as all the needed information is available to them in Hungarian. It is not a disadvantage for a Hungarian family physician if they cannot speak English, but they consider the existence of a common language important for communication between members of the international medical community. Most of the family physicians interviewed have agreed that this common language should be English (together with Latin).

Half of the interviewed patients have had positive feelings about the English language and argued that a common language is very important within certain professions, and in medicine this common language can be English. Others have expressed concern about the future of the Hungarian language of medicine as well as negative feelings about the

domination of the English language as, according to them, it can lead to miscommunication between doctors and patients and, thus, the country should put a halt to Englishization.

In conclusion, we can safely say that for Hungarian cardiologists working in tertiary and secondary care English is not only the language of research, but it is the language of medicine in general, used in various domains of their profession for various purposes. However, it is unquestionable for them that the Hungarian language of medicine should be used in other professional domains such as graduate and postgraduate training of Hungarian doctors, and Hungarian is also the language used with the Hungarian patients who make up most of their daily turnover. The global spread of the English language in the field of medicine may be construed as a move toward diglossia, which may give rise to fears that the spheres of use of the Hungarian language will be diminished and the language marginalized (cf. Bősze 2009; Kiss 2009). The spread of English in academic circles is likely to widen the communicative gap between scientific and non-scientific communities and, thus, lead to further social stratifications. The medical terminology might in the future lack Hungarian terms and the English ones will predominate, and Hungarian researchers might lose the ability to talk about their research in Hungarian. Therefore, linguistic effort may be required to ensure communication between various Hungarian discourse communities.

4. Conclusion

Data gained through the semi-structured interviews have promoted a better understanding of the English language contact-induced features identified in the discharge reports. Two cases can be distinguished in interpreting and discussing the results collected with the two methods:

a) when the English language is used by physicians for various purposes in various situations, domains of professional life, and
b) when the Hungarian language is used (especially in writing) exhibiting certain English language contact-induced features.

The two cases, however, are correlated and cannot be examined separately, as the second one, i.e. the use and presence of the contact-induced features, is a consequence of the first one, i.e. the extensive use of the English language.

In the discharge reports under investigation, native speaker (L1) cardiologists of Hungarian adopt vocabulary and structural features from their second language, English (L2).

The Hungarian cardiologists rarely deactivate their L2 totally, they may incorporate almost any type of L2 feature into their L1, when they write in Hungarian. English lexical morphemes may be introduced into Hungarian directly via code-switching from English, as bilingual speakers often use code-switching in their speech and writing. Due to what is called the 'frequency hypothesis' (cf. Myers-Scotton 1993), the code-switched items can change to borrowings through increasingly frequent usage. And then, as not all members of the medical discourse community engage in code-switching (cf. family physicians, who are not necessarily fluent speakers of English), these borrowed items are adopted by the non-bilingual speakers of the Hungarian medical community. Variation in the amount of assimilation of these borrowings may depend on the 'degrees of bilingualism', as a borrowing may be subject to continual interference from the model in the L2 (cf. Haugen 1950). Therefore, different writers may use different forms of the same item, and as a result, various orthographic and morphological realizations of the same word can coexist in the same medical discourse community. The position of the English language as the *lingua franca* in medicine has an impact on the structural features (syntax and grammar) as well and affects even the writing conventions of medical texts today.

Cardiologists use the English language extensively, both in international professional collaborations and in several domains of their daily work, whereas family physicians do not use it or only rarely do so. The extensive use of the English language results in contact-induced changes in the L1 of Hungarian cardiologists, and these changes can be seen in the documents examined with Method 1. Lexical and semantic borrowings form the largest group of English language contact-induced features in the Hungarian cardiology discharge reports.

Although language choice (i.e. the use of L1 versus L2) and the use of contact-induced features are not arbitrary, through the selection of one language over another and by the exhibition of certain contact-induced features, speakers may display what is called 'acts of identity'. Speakers may have various motivations behind their language choice and use. Filling a gap in L1 vocabulary is one of the motives that seem to play an important role in borrowing in the field of sciences. It can involve the importation of a concept and introduction of new phenomena that are not available in L1. In certain cases, especially in the language of medicine, using ready-made designations is in some cases more economical than describing phenomena afresh.

Generally, there might also be a need for synonyms or euphemisms in L1. The borrowed term may help speakers make more specific differentiations in semantic or conceptual fields, or introduce finer distinctions of meaning. Stylistic effects can also play a

role: the text might appear more technical, professional, authoritative, precise and objective due to contact-induced change. Heavy lexical borrowing may be due to the need for vocabulary reflecting different levels of style, when both the Hungarian and the borrowed English words are retained. There is sometimes a distinction between the more formal, borrowed English vocabulary and the more informal Hungarian lexicon (E/H *kinking* and H *megtörés/megtöretés,* E/H *recovery* and H *lábadozás*).

Apart from the very general distinction between 'necessity borrowing' and 'luxury borrowing' and the two frequently named motives 'the need to designate new, imported things', e.g. *defibrillátor* 'defibrillator'*, stent* and 'prestige', e.g. *branch* (H *ág/branch*), *potassium* (H *kálium/potassium*)*, study* (H *tanulmány/vizsgálat/study*), the following aspects, among others, can be mentioned as causes for lexical borrowing in medicine: the need to differentiate special nuances of expression (e.g. H *tüske* same as E *spike* but in H *spike* 'a sharp peak in an electronic recording'), a feeling of insufficiently differentiated conceptual fields or rise of a specific conceptual field (e.g. *bridging, graft*), the need for a euphemistic expression (e.g. *diszkomfort* 'discomfort' for expressing pain), and the bilingual character of the medical discourse community (cf. cardiologists typically speak English at an upper-intermediate or advanced level and use it everyday).

Scientific dominance of the English language is accompanied by its high prestige and value of L2 knowledge. Speaking in L2 or the use of L2 contact-induced features can raise in-group identity and social solidarity. It refers to the speaker's accommodation to the conventions of the discourse community and acceptance of its norms. Being a member of the discourse community may result in high social status that can be concomitant with economic advantages. High level L2 competence means advantage in education, employment, research and, generally, in the professional career. As L2 has high value of knowledge and there might be pride in its use, it can lead to the 'show-off' of its speakers as well.

Using L2 or L2 features does not only express in-group identity or solidarity, it can also be the means of authority or exclusion of those (e.g. patients or non-bilingual health workers) who are not members of the bilingual medical discourse community.

Most of the semantic loans in the field of cardiology seem to be introduced first into written Hungarian, mostly through the translation of research and review articles, instruction manuals, guidelines and recommendations from English into Hungarian. Many of such loans appear as a result of the translation process: since neologisms without an existing Hungarian equivalent frequently appear in the original English texts, translators have to solve the problem of term formation.

Changes are mostly introduced by the members of the bilingual medical discourse community as a result of the motivations described above, but in some cases, changes might be due to certain language planning as well. International recommendations and guidelines are very important in medicine, influencing not only health care itself, but the language used during the performance of health care as well. The Department of Health of the Hungarian government, the university/faculty leadership, and the head of the department may also have a role in language planning by establishing certain standardization, e.g. standardized format for discharge reports, programs for reporting the laboratory results or describing the dosage of medication.

Scholars approach the phenomenon of borrowing, especially lexical borrowing in different ways. Lexical borrowing may be considered, on the one hand, as a natural process of language contact, and on the other hand, there might be extensive resistance against borrowing as such.

But the critique of the Englishisms is not so much about the fact that language is a means of communication, but rather about language being a symbol of the national and cultural identity of a speech community. Englishisms, according to some scholars, embody British or American social and cultural structures and values, which can be perceived as a threat to one's own values (cf. Phillipson 1992; Kontra 1997; Skutnabb-Kangas 2000). Attitudes toward some kinds of code-switching, mixing and borrowing may also be negative based on the fear that borrowing would lead to the corruption of the native language (cf. e.g. Jernudd 1989, or the Hungarian language purists e.g. Fábián 1993; Grétsy 2002).

There is little doubt that most Europeans, and among them Hungarians, do not want their national language be replaced by English, and in the domain of scientific discourse both a lingua franca and a national language are considered desirable. While English is seen as a foreign language, serving as a useful means of communication with members of the international (and Hungarian) medical discourse community, the Hungarian language is used in communication with members of the Hungarian speech community in general.

On the one hand, some other speakers may be apprehensive to the use of loanwords, considering them as a form of cultural and/or linguistic 'invasion', English language globalization, and resisting the English borrowings. As a result, they either choose to treat loanwords as Hungarian words through maximal phonological and morphological integration into Hungarian to preserve the language from 'alien elements', or they may avoid using them altogether if there is a Hungarian alternative, thus minimizing the feeling of the intrusion of

the English language and showing loyalty to the Hungarian language (cf. medical language purists, e.g. Bősze, Buvari, Grétsy, and Keszler).

Sometimes interference features are introduced by speakers whose competence in the source language is strictly passive – that is, a speaker may borrow a feature from a language that he or she does not speak actively at all. Not all members of the Hungarian medical discourse community are fluent speakers of English, but this refers mostly only to those physicians who are involved in research, basically working in tertiary/secondary health care. Physicians working in primary care are bilingual speakers of Latin and Hungarian but not necessarily of English. As they also attend workshops and postgraduate training events organized and held by research physicians, they are also 'exposed to' some of these borrowings. For them the language used by the research physicians is similar to an interlanguage. They share this common interlanguage with the research physicians, but they are not necessarily speakers of the English language. They have acquired only certain features of the English language that they incorporate into their medical Hungarian. Most of the features transferred this way are lexical. The adoption of loanwords is usually a deliberate decision. A reason for it, besides need and prestige, may be the fact that the discourse community deliberately tries to withhold their 'real' language from outsiders, emphasizing in-group status, or differentness from other groups/communities. The newly developed bilingual language may serve as a symbol of the medical discourse community.

It is likely that passive familiarity is the mechanism by which English features contribute to the emergence of medical Hungarian, an interlanguage that is used by these speakers only in one domain of their language use. The discourse community of medical Hungarian comprises both bilingual speakers of English and Hungarian and members of a group who speak Hungarian and understand the interlanguage that is used by the bilingual members. Those belonging to the latter group may never speak English itself, but their passive familiarity with the English language, or at least the interlanguage that they use, makes them introduce some English features into their medical Hungarian.

As a consequence of the above described changes, we may come to the conclusion that changes have led to the development of a specific language, which might be considered a special jargon, the medical jargon or in a narrower sense the cardiological jargon. Though the changes do not affect only the lexis but each linguistic level, therefore, we might consider it a type of 'interlanguage'. This medical interlanguage contains mostly Hungarian elements with Latin medical vocabulary, and it also comprises several English language contact-induced features. It is not an interlanguage in the classical meaning of the word (cf. Selinker 1972;

Corder 1975), but it is rather a reversed interlanguage. In interlanguage proper learners of L2 transfer certain features from their L1 into L2, whereas in the case of the Hungarian medical language, bilingual speakers transfer elements from L2 into their L1. Hungarian–English bilingual cardiologists use their L1, L2 and the medical/cardiological interlanguage (CI) in different domains of their professional life, e.g. L1 is used when they take patients' history, L2 when they teach medical students in the English language program, and CI when a cardiologist speaks to another cardiologist.

Interlanguages are described by many scholars as permeable, dynamic, changing and yet systematic (cf. Selinker 1972; Corder 1975). An interlanguage may undergo relative fossilization and relative change, but it always reveals an underlying cognitive process. There are certain features which are fossilized in IC, and these features make it possible for multiple speakers to speak and understand it. IC is understood not only by bilingual cardiologists but also by family physicians who are not necessarily fluent speakers of English, and also by other health workers at the Department of Cardiology such as nurses and assistants. Members of the latter two discourse communities may acquire this IC during their work or at postgraduate trainings.

IC can be considered a bridge between tertiary/secondary care physicians and primary care physicians, as well as other health workers, who are involved in tertiary care. But at the same time, IC also has a gate-keeping function: those who cannot acquire it and do not have at least a passive knowledge of it will have restricted access to certain medical information, knowledge and other benefits, e.g. patients who are excluded from it have restricted access to information on their health status, management and prognosis of their disease.

We can conclude, however, that the discharge report is not written for the patients as they do not have the same linguistic code that physicians from all the three levels of care share or the medical knowledge behind it. Discharge reports are rather about the patients, and the interlanguage with the medical content should be 'translated', mediated toward the patients by members of the medical society at various levels, by both tertiary/secondary care physicians and primary care physicians.

Popular attitudes towards some kinds of code-switching and interference features are often negative even among community members themselves who engage in this kind of multilingual behavior frequently. However, there is no evidence to indicate that multilingualism is an inherently problematic mode of organization, either for the society or for the individual. As languages are often symbols of class, gender, ethnic, and other kinds of differentiation, it is easy to think that language underlies conflict in multilingual societies (cf.

Nelde 1997). Yet disputes involving language are really not about language, but instead about "fundamental inequalities between groups who happen to speak different languages" (Romaine 2003: 532). Each language or variety of language in a multilingual community may serve a specialized function and is used for particular purposes. The degree to which the outside world is engaged is justified only to the extent that it contributes to the maintenance of the discourse community.

Arguments advanced from a linguistic aspect support the idea that the dominance of English as the lingua franca of medicine is beneficial to the careers of non-native, English speaking physicians; however, it can have negative effects on the native tongue of these physicians. More publication in English leads to less publication in Hungarian. It may have several serious consequences: domain loss in the field of sciences, and a general neglect of the Hungarian language. The scientific terminology of Hungarian will preserve gaps, leading to the condition when the Hungarian language will fail to provide an effective means of academic communication in medicine. It can also widen the gap between physicians and the non-scientific community, i.e. other health workers and patients.

The terminology of some medical disciplines lack Hungarian words and expressions. Some of the terms are not translated into Hungarian, they have no Hungarian equivalent, and the English terms are frequently used. Some of the Hungarian patterns of text and discourse are replaced by Anglo-American patterns concerning formulation of research results and theories. Therefore, some scholars (e.g. Fábián, Zimányi, Minya, Bősze) think that Hungarian medical researchers might lose the ability to talk about their specialty in Hungarian. Therefore, there might be a great risk that their process of thinking and the development of ideas will be disadvantaged, having a negative impact on the quality of their Hungarian research.

The modernization and development of the Hungarian language of medicine can be achieved only through publishing in Hungarian. Terminology and nomenclature do not develop spontaneously, but they are developed and sustained by the professionals working in that specific field. The linguistic formulation (phenomena coding) is the task of the professionals as well as the spreading of recent information, data and knowledge. Scientific textbooks, university notes should be published in Hungarian, and university instruction should be performed in Hungarian (É. Kiss 2004).

The level of awareness of language must be raised among scientists. This is a requirement if native speakers are going to guide developments in the desired direction and not remain 'passive victims' of a linguistic power structure. Completely preventing external

influence is impossible, and probably undesirable, but language policies should instead aim at adapting changes to the Hungarian context, to incorporate them into the traditional Hungarian patterns and structures. It is important to concentrate not only on the adaptation of words to our linguistic system but also take note of the more fundamental and perhaps more subtle text and discourse patterns.

The conclusion suggested by the material examined here is that linguistic Englishization in special fields of discourse is a more complex and nuanced process than it may appear at first sight. Many phenomena that are perceived as Englishisms do not, in fact, have the consequence of bringing the Hungarian language closer to the English language. In this sense, it demonstrates the paradox that linguistic globalisation often results in linguistic fragmentation (cf. the development of an interlanguage by Hungarian cardiologists) at the same time, which has the somewhat unexpected consequence of leading to a more complex and varied linguistic landscape.

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