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COOKIES VS *CIASTECZKA*, *ENGINE* VS *SILNIK*: THE COEXISTENCE OF ENGLISH LEXICAL AND SEMANTIC LOANS IN THE POLISH LANGUAGE OF COMPUTER SCIENCE

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ABSTRACT

Polish is under the continuous influence of English these days. In the past, this influence was generally restricted to overt borrowings, i.e., lexical loans, such as P. *komputer* 'computer' < E. *computer*. Nowadays, other types of loans are also evident, viz. covert borrowings, e.g., semantic loans, such as P. *mysz* 'mouse' used in the sense of 'a device attached to a computer'. The usual scenario is that a given concept taken from English is rendered either by a lexical or semantic loan. In some cases, however, both lexical and semantic loans are used with identical meanings, e.g., P. *cookies* 'small files' < E. *cookies* coexisting with P. *ciasteczka* 'cookies' and P. *engine* 'part of a programming code upon which a program, game, etc., is based' < E. *engine* coexisting with P. *silnik* 'engine'. The study is based on a corpus devised and compiled by the present author. The corpus consists of short informal texts (entries) taken from 32 selected Internet forums. The study shows that the coexistence of lexical and semantic loans (used with the same meanings) is not in doubt, but the phenomenon itself is not very frequent, viz. 29 such pairs have been identified. The coexistence is rarely equal, i.e., one term is usually clearly preferred and used more frequently than the other. This paper aims to analyse this type of "lexical loan – semantic loan" doublets and to specify the linguistic criteria that may be responsible for the preference for a lexical or semantic loan. The list of possible criteria discussed in the paper includes the criterion of length, morphological adaptation and potential for new derivatives, adaptation at the level of spelling, semantic transparency, frequency of exposure, international character, and time aspect.

Keywords: Lexical borrowing; semantic borrowing; loanword; Anglicism; language contact; the language of computer science.

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1. Introduction. Literature review. Definitions of basic terms

Polish, like many other European languages, is under the continuous influence of English. There is a growing number of publications dealing with the influence of English on a number of European languages, cf. the monographs edited or authored by Görlach (2001, 2002a, 2002b, 2003), and a collection of papers edited by Anderman & Rogers (2005), Fischer & Pułaczewska (2008), Furiassi, Pulcini & González (2012), Koll-Stobbe & Knospe (2014), and Zenner & Kristiansen (2014a), among others. The individual papers included in the monographs given above concentrate on the description of the contact between English and another European language; taken together, they form a relatively thorough picture of the English influence upon various languages used in Europe.

While the present paper is restricted to lexis-related loans (primarily lexical and semantic borrowings; for definitions, cf. the further part of the section), it should be explicitly mentioned that the influence of one language upon another is not restricted to lexical and semantic borrowings. Other types of lexis-related loans include various types of loanblends (primarily semi-calques and hybrid creations) as well as loan translations (calques) and loan renditions. Some authors include here loan creations as well. Additionally, a language may also influence another language at the level of morphology (morphological borrowings), syntax (syntactic borrowings, also known as structural or grammatical borrowings), spelling (orthographic borrowings), pronunciation (phonetic and phonological borrowings), and pragmatics (pragmatic borrowings), among others. Details, together with numerous examples, can be found in the above-mentioned monographs. In addition, the classic works by Haugen (1950) and Weinreich (1953) should be singled out; for a concise summary of Haugen's and Weinreich's work, see Onysko (2019). Other articles and books which offer a concise theoretical discussion of the types of the influence of one language upon another include Winford (2010: 170–187), Matras (2020), and a collection of articles in Hickey (2020); for a general discussion on contact-induced language change, cf. Thomason (2001).

In the past, the influence of English upon Polish was, in general, restricted to lexical borrowings. Single instances of other types of English influence upon Polish were mentioned but were clearly seen as insignificant in comparison to lexical loans, cf., e.g., the monograph by Mańczak-Wohlfeld (2006) on English-Polish language contact. Mańczak-Wohlfeld's book concentrates generally on lexical Anglicisms; the existence of semantic borrowings, innovations in phraseology, influence in the sphere of syntax and morphology, pragmatic changes, etc., are also briefly described (Mańczak-Wohlfeld 2006: 63–68), but they tend to be seen as isolated phenomena, in contrast to lexical loans.

Nowadays, however, the situation is entirely different: English continues to exert its influence on Polish, but it is no longer restricted to lexical borrowings; other types of borrowings, most notably semantic loans and loan translations (calques), are common in Polish as well. The description of such loans, together with numerous examples, can be found in the monographs[2] on English-Polish language contact; they are either based on many general sources (Witalisz 2007, 2015, 2016) or on some corpus, compiled usually by the author, and devoted to a given variety, semantic field, style, register, etc., e.g., the language of computer science (Zabawa 2017), informal spoken Polish (Otwinowska-Kasztelanic 2000; Zabawa 2012), the language of blogs (Wiśniewska-Białas 2011), the language of corporations (Cierpich 2019), and the language of women's press (Surendra 2019). In general, the monographs tend to concentrate on a theoretical discussion of various types of loans and the presentation of the lists of borrowings. Additionally, the paper by Bańko & Witalisz (2018) may also be quoted; the paper explores the general proportion of calques and lexical loans (with an emphasis on the loans from Russian and English) in Polish.

It should be added at this point that the level of the influence of English upon Polish may and does depend on the semantic area, cf. the general observation, not specifically connected with English loans in Polish, by Carling et al. (2019: 2):

> [...] not all borrowing is random. Distinct tendencies can be observed statistically, also from a cross-linguistic perspective [...] Words from different semantic domains may differ in their borrowability: lexical items pertaining to the modern world, religion, clothing and grooming, the house, law, social and political relations, agriculture and vegetation, food and drink, and warfare and hunting, are more frequently borrowed than words from the domains of sense perception, spatial relations, body terms, kinship, motion words, the physical world, emotions, and space and time.

In the English-Polish situation, the general language, used in everyday situations, does not appear to be heavily influenced (Otwinowska-Kasztelanic 2000; Zabawa 2012); however, the language of certain specialised semantic fields, e.g., the language of business and advertising, is under a more visible influence (cf., e.g., Kasztalska 2014; Cierpich 2019). It can thus be generally concluded that specialised semantic areas often tend to be influenced to a greater extent than general Polish. This is also certainly the case with the semantic field of computers and the Internet.

The distinction between lexical loans, semantic loans and calques runs along the lines of the distinction between the two types of reproduction: importation

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[2] The list is restricted to monographs only (with one exception). It is not possible to present a detailed list of articles dealing with the influence of English upon Polish as they are too numerous.

and substitution, or a combination of both (Haugen 1950). Therefore, lexical borrowing is the importation of both form and meaning, usually with at least some degree of adaptation to the recipient language, e.g., P. *komputer* 'computer' < E. *computer*; a semantic loan is the importation of meaning with the substitution of form, e.g., P. *mysz* 'a device attached to a computer' < E. *mouse*; a loan translation (calque) is a translation (i.e., substitution) of multimorphemic words and phrases, e.g., P. *urządzenie wejściowe* 'lit. device input$_{Adj}$' < E. *input device*. Finally, a group of semi-calques can be distinguished: these are the constructions which are half-translated (as in the case of calques) and half-imported (as in the case of lexical loans), e.g., P. *martwy piksel* 'dead pixel' < E. *dead pixel*. In addition, as was mentioned above, some linguists include here a group of loan creations (cf., e.g., Weinrech 1953: 51). They are understood as "new coinages which are stimulated [...] by the need to match designations available in a language in contact" (Weinrech 1953: 51). In Haugen's words, a loan creation is "a completely native kind of creation" which has appeared "in response to stimuli from another culture" (Haugen 1950: 222). Thus, loan creations are coined independently in the target language and they have no formal resemblance to the model in the source language (Witalisz 2015: 55–56, 2016: 152–153; Zabawa 2017: 66–67). It is therefore not clear whether they should be counted as borrowings or rather independent creations. Many linguists do not treat them as borrowings (cf., e.g., Haugen 1950: 220); others see them as items on the borderline between loan translations and native innovations (cf., e.g., Witalisz 2016: 152; Winter-Froemel (2008: 21) sees them as "contact-induced innovations" but not borrowings; cf. also Zabawa 2017: 67). In the present work, they are not counted as English borrowings in Polish (cf. Footnotes 4 & 5 in Section 2). A possible example is P. *mózg elektronowy* ('lit. brain electron$_{Adj}$') for 'a computer'.

It is not uncommon for the various types of loans enumerated above (which convey the same meaning) to coexist in Polish, e.g., the lexical loan *cookies* ('small files, stored on a given computer by a web browser',[3] a lexical loan) coexisting with the semantic loan *ciasteczka* ('cookies', a semantic loan), and *engine* ('the most important part of a programming code, on which a program, a computer game, a website, a web browser, etc., is based', a lexical loan) coexisting with *silnik* ('engine', a semantic loan). The present paper aims to analyse this type of coexistence in the Polish language of computer science.

[3] The definitions given here (and throughout the paper) are of the English loans used in Polish, not of the words used in English. However, some of the definitions are formed with the help of English monolingual dictionaries, primarily the OED and the ODE.

It should be added at this point that the phenomenon of this type (i.e., the coexistence of English lexical and semantic loans) is not restricted to the semantic field of computers. It is often visible, albeit usually indirectly, in the studies on English loans in Polish in various semantic areas, cf., e.g., the study by Surendra (2019) on Anglicisms in the women's press, where certain examples of this type of coexistence are described, e.g., *designer* – *kreator* 'creator'. Another example is the article by Witalisz (2021) on Anglicisms in the Polish LGBT+ community: the paper does not explicitly mention the coexistence of lexical and semantic loans, but lists, among others, the lexical borrowing *bear* and the semantic loan *misiek* 'a gay man with a hairy body'. It should also be pointed out that this type of coexistence is not restricted to Polish, but is present in other languages as well, cf., e.g., Munday (2005: 62), who describes such "competing" pairs (related to computing terminology) in Spanish as *el ratón* 'mouse' and *mouse/maus*, *el correo electrónico* 'electronic mail' and *e-mail*, and *mensaje electrónico* 'electronic message' and *mail*, among others.

As was mentioned above, the monographs on English-Polish language contact tend to focus on presenting a list of English borrowings used in a given variety, accompanied with some analysis and a theoretical discussion. However, to my knowledge, none of them concentrates on discussing the coexistence of various types of loans with the same semantic content. The only monograph that I am aware of that focuses on this type of comparison is the one by Bańko et al. (2016). However, it does not concentrate specifically on the coexistence of various types of English loans in Polish; it focuses more generally on the coexistence of any loanwords (i.e., not necessarily of an English origin) with native forms, e.g., *eksplozja* – *wybuch* 'explosion: internationalism (originally from Latin) vs. explosion: native', *triumf* – *zwycięstwo* 'triumph: from Latin vs. victory: native'.[4] There is also a brief

[4] For a more general discussion, i.e. not specifically connected with the English-Polish situation, on the coexistence of English loans and native terms, cf. Winter-Froemel & Onysko (2012: 43–64); the authors also observe that the coexistence of this type (or lack thereof) seems to depend, among other things, on the semantic field: for example, in connection with the German-English situation, English lexical loans in the sphere of computer technology do not generally have native German counterparts, unlike, say, in the sphere of business (2012: 51). For a wider perspective with more languages taken into consideration, cf. Bergh & Ohlander (2017), who investigate the coexistence of English lexical loans and loan translations related to football in 16 European languages (in their understanding, the notion of a loan translation also includes semantic loans). They conclude with the statement that some languages are more likely to borrow directly whereas others are more likely to introduce calques and semantic loans. This is, to some extent, related to morphosyntactic factors; e.g., German forms noun+noun compounds very easily and thus has many calques from English. A similar conclusion has been put forward by Mott & Laso (2019: 162), who provide the example of the English word *mouse*. Some European languages adopted the concept as a lexical loan, e.g., Italian or Romanian, whereas others adopted it as a semantic loan, e.g., Spanish, French, and Serbian.

mention of the coexistence of English lexical loans and loan translations in Polish in the paper by Mańczak-Wohlfeld & Witalisz (2019: 182), e.g., *fast food* and *szybkie jedzenie* 'fast food', *happy hours* and *szczęśliwe godziny* 'happy hours' (lexical loans and calques, respectively), but it is not the main focus of the paper. Furthermore, the paper by Kaczmarek (2015) can be mentioned, which focuses on the coexistence of English lexical loans and native forms in Polish in the women's press; it is written, however, from a prescriptive, rather than descriptive, point of view and does not analyse the frequency of various types of loans, but concentrates on the distinction between the so-called necessary and unnecessary borrowings. Thus, we can assume that the present paper focuses on a topic that has not been thoroughly discussed in the literature on Polish-English language contact so far.

2. Borrowings in the Polish language of computer science: General remarks

The first computers and other computer-related machines were designed in English-speaking countries (https://en.wikipedia.org/wiki/Computer#History) and, consequently, the original terminology was English. In fact, the earliest terms were devised with a pedagogical aim (Stålhammar 2001: 116), cf. such terms as *virus* (with certain similarity to a biological virus) and *keyboard* (with a certain resemblance to a keyboard of a piano and, later, a typewriter). Nowadays, many computer components, etc., are manufactured in other countries (most notably China), but this does not seem to have changed the fact that hardware and software intended to be sold internationally usually have English names, are prepared in English-language versions, etc.

Before computers and computer-related machinery appeared on the Polish market on a large scale, there was a need to invent appropriate terminology (connected with the need to translate instruction manuals, among others). In addition, the press devoted to computers started to appear in Poland, e.g., *Bajtek* (https://pl.wikipedia.org/wiki/Bajtek), which also facilitated the need to create standardised Polish computer-related terminology. In general, computer journalists and translators had two main options, viz. (1) to invent new terminology in Polish (but cf. Footnotes 4 & 5) or (2) to make use of the existing English terminology and use importation, substitution, or a combination of both (for more on the distinction between importation and substitution, cf. Section 1; cf. also Haugen 1950: 212–213, Weinreich 1953: 47–53). Thus, the following main options (1–2, with subtypes marked by letters) were available:

Option 1A: Invention of an entirely new term, i.e., a word or phrase (coinage, e.g., the construction *mózg elektronowy* ‘lit. brain electron$_{Adj}$’[5]);

Option 1B: The use of an already existing word in a new meaning (native semantic innovation, e.g., *ściągać* ‘lit. to take off; take down; cheat’, used in the sense of ‘to download a program, a file, etc., from the Internet’[6]);

Option 2A: Importation of an English term, i.e. both its form and meaning, usually with some adaptation to Polish (English lexical borrowings,[7] e.g., P. *komputer* ‘computer’ < E. *computer*, P. *skaner* ‘scanner’ < E. *scanner*, P. *link* ‘link’ < E. *link*, P. *kursor* ‘cursor’ < E. *cursor*, P. *laptop* ‘laptop’ < E. *laptop*);

Option 2B: Importation of a new meaning only, assigned then to a Polish word, i.e., the importation of meaning with the substitution of form (English semantic loans, e.g., P. *mysz* ‘mouse: a device for a computer’ < E. *mouse*, P. *tapeta* ‘wallpaper: a background photo, picture, etc., on a computer screen, smartphone, etc.’ < E. *wallpaper*, P. *okno* ‘window: an area on a computer screen’ < E. *window*);

Option 2C: Literal or approximate translation of English multimorphemic words and phrases (English loan translations, also known as

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5 Constructions such as *mózg elektronowy* ‘lit. brain electron$_{Adj}$’ can be seen as examples of loan creations, where the construction is not based on any foreign model but is only inspired by a culturally foreign concept (cf. Section 1). Loan creations are not typical borrowings and the constructions of this type are therefore counted as native innovations (even though they are, to be more precise, contact-induced native innovations).

6 The English word *download* is used only in the sphere of computers (cf. ODE) and does not share any senses with the traditional uses of *ściągać* in Polish (‘take off; take down; cheat’, etc.). Consequently, *ściągać* cannot be treated as an English semantic loan (Option 2B) because of a lack of a common meaning shared between English *download* and Polish *ściągać* before the era of computers (for more on this, cf. Zabawa 2017: 54). There is, however, some indirect English influence (a culturally foreign concept), as in the case of loan creations (cf. Footnote 4). Forms such as *ściagać* can perhaps be labelled as “semantic loan creations” (still, they will not be counted as semantic borrowings). I would like to thank one of the anonymous reviewers for pointing this out to me and suggesting the term *semantic loan creation*.

7 The term “lexical borrowing” may be misleading because other types of loans, e.g., semantic ones, are also “lexical” in the sense that they are connected to vocabulary units (cf. Zenner & Kristiansen 2014b: 2); therefore, some linguists prefer to use other terms, e.g., “loanwords proper” (Backus 2014) and “direct loans” (Bergh & Ohlander 2017). However, the term “lexical loan” will be retained in this article as it is well rooted and widely used in linguistics.

calques, e.g., P. *urządzenie wejściowe* ‘lit. device input$_{Adj}$’ < E. *input device*, P. *plik binarny* ‘lit. file binary’ < E. *binary file*, P. *atak słownikowy* ‘lit. attack dictionary$_{Adj}$’ < E. *dictionary attack*, P. *gra przeglądarkowa* ‘lit. game browser$_{Adj}$’ < E. *browser game*);

Option 2D: Combination of importation and substitution (translation) of English multimorphemic words and phrases (English semi-calques, i.e., constructions which are half-translated, as in the case of calques, and half-imported, as in the case of lexical loans, e.g., P. *martwy piksel* ‘dead pixel’ < E. *dead pixel*, P. *menedżer urządzeń* ‘lit. manager device$_{GenPl}$’ < E. *device manager*).

The distinction between Options 1A and 1B on one hand and 2A, 2B, 2C, and 2D on the other is connected with the absence or presence of English influence, cf. Backus (2014: 24), “faced with some communicative task, a speaker has two choices: say something in a familiar way or say it in a creative way”. The familiar way in this case is the importation or translation from English (Options 2A-2D), whereas the creative way is connected with neologisms or innovations on the Polish soil, without the direct influence of English (Options 1A-1B), even though an indirect (cultural, not lexical) influence may be present.

In some situations, the difference between certain options given above is far from obvious; for example, it is not always easy to distinguish between English semantic loans in Polish (Option 2B) and native semantic innovations (Option 1B). The situation may be clear in the case of the word *mysz* ‘mouse’, when the new computer-related meaning appeared not only in Polish, but also in many European languages (Witalisz 2016: 66, Mott & Laso 2019: 162; cf. also Markowski 2004 on semantic internationalisms), but it is much less evident in the case of many other words.

In such problematic situations, a set of specific criteria may be helpful (Witalisz 2007; Zabawa 2015, 2017), such as a lexicographic criterion (if a given meaning was recorded earlier in English dictionaries than Polish ones, it is more probable that a given word is an English semantic loan), corpus criterion (if a given meaning appeared earlier or appears with a greater frequency in the English corpora in comparison to Polish ones, it is more probable that a word is a semantic loan), semantic criterion (the more metaphorical, or more distant from the traditional sense, the new meaning is, the more probable it is that it is modelled on English), criterion of analogy (if there are many similar changes of meaning present in the case of other words, it is more likely that a given word is a native semantic innovation), extralinguistic (cultural) criterion (when it is not only the meaning that is new, but an object or

concept described by it as well, it is more likely that a word is an English semantic loan) and source text criterion (if the new meaning appeared first in the texts that are translations or adaptations from English, it is more likely that a word is a semantic loan). In addition, changes in other languages should also be taken into consideration (if a given change in meaning appeared in other languages as well, it is more likely that it was triggered by English). In general, the criteria complement each other and are not used in isolation. Still, they are relative rather than absolute and, consequently, frequently cannot provide definitive answers. Thus, some degree of uncertainty remains, and a linguist often deals here with probability rather than absolute certainty.

Options 1A and 1B as well 2C and 2D are outside the scope of the present paper and will not be discussed in detail. The article concentrates on Options 2A and 2B, i.e., lexical and semantic loans. It is beyond doubt that the Polish language of computer science is still heavily influenced by the English language. The core terminology in the area of computers has been established, but new versions of operating systems, office packages, antivirus software, computer games, etc., appear all the time. Nowadays, it is customary that software is offered in various language versions, including Polish. Thus, there is a constant need to render new English terminology into Polish; therefore, new terms are still borrowed or loan translated into Polish.

In some cases, a lexical borrowed doublet may appear, i.e., the situation where English lexical and semantic loans (used with the same meanings) coexist in Polish, e.g., P. *cookies* 'cookies' < E. *cookies* and P. *ciasteczka* 'cookies' < E. *cookies* 'small files created by a server when an Internet user visits a website', P. *engine* 'engine' < E. *engine* and P. *silnik* 'engine' < E. *engine* 'a component of a piece of software, especially a computer game'.[8] As was mentioned in Section 1, the coexistence of this type is the subject of the present paper.[9]

The study is based on the corpus collected by the present author. Detailed information on the corpus is presented in Section 3.

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[8] The meanings are identical in the area of computers, not in Polish in general. For example, the word *cookies* is used only in a computer-related sense (NKJP); the word *ciasteczka* 'cookies', by contrast, may also be used in general Polish in the sense of 'sweet biscuits'.

[9] Other types of doublets are also possible, cf. Section 4. However, they are outside the scope of the paper.

3. Description of the corpus

The corpus upon which the present study is based has been designed, compiled, and analysed in detail by the present author.[10] The corpus consists of short informal texts (entries) taken from Polish Internet forums devoted to computers and the Internet. Altogether, 32 Internet forums have been taken into consideration (the exact list of the forums comprising the corpus is provided in the Appendix).

The language of computer science is not homogenous but can be classified into three main groups (from the point of view of the style, register, and the level of formality): (1) the formal, official terminology (found in, e.g., instruction manuals, Polish versions of software, the computer press, etc.), (2) the informal, unofficial terminology (found in, e.g., spontaneous conversations on computers or discussions on chat groups and Internet message boards), (3) slang (the language of computer specialists, hackers, advanced computer programmers, advanced gamers, etc.). The language of the corpus can be classified as belonging to the second group, i.e., informal; to be more precise, it can be placed on the continuum between informal and semi-formal.

The procedure was as follows: first, various phrases in Polish, such as *forum komputerowe*, *forum o komputerach*, etc. ('computer forum', 'forum about computers'), were typed into Google and a list of Polish forums devoted to computers was obtained. Second, 32 forums were selected, mainly on the basis of their size (very small forums in terms of the number of users and the number of posts were excluded).

Third, after a given forum was included, an arbitrary decision was made about which thread or threads to include. Care was taken to make the thematic coverage as broad as possible: thus, for example, a thread on laptops was selected on one forum, a thread on computer peripheral devices on a different one, a thread on computer games on yet another one, etc. As a result, various topics were included, and the thematic coverage is extensive, with threads on hardware (computers, laptops, parts of computers, peripheral devices), software (operating systems, office packages, computer games, programming languages), and the Internet (browsers, antivirus software, malicious software and viruses).

A sample of between 20,000 and 60,000 running words was taken from each forum; afterwards, certain information, such as personal data (e.g., private email addresses), was deleted from the texts. Taken together, the entire corpus consists of 1,541,449 running words. It is not very large in comparison to

[10] The corpus was used previously by the author as a basis for the study on English semantic loans and loan translations (Zabawa 2017). The present paper, by contrast, focuses on the coexistence of English semantic and lexical loans and is therefore a completely new study.

commercially available general corpora of Polish, such as NKJP, but it is large enough to highlight certain tendencies. Besides, it is a corpus of specialised texts, and, as such, it does not have to be as big as general corpora to be representative (for more on this, cf. Handford 2010; Baker 2010). In fact, the corpus can already be described as lexically saturated, i.e., the inclusion of new texts would only provide additional tokens of already noted lexical and semantic loans rather than any new types. Consequently, it was rather pointless to expand the corpus with further texts.

The texts in the corpus have carefully been read by the author and English lexical and semantic loans have been noted down (manual excerption). The frequency of the borrowings has been established with a simple program for text analysis, TextSTAT v2.9c (https://neon.niederlandistik.fu-berlin.de/en/textstat/).

4. Lexical doublets found in the corpus: An overview

As mentioned in the title and the abstract, the paper concentrates on the coexistence of English lexical and semantic loans (used with the same meanings) in Polish in the semantic area of computers. Examples of such coexistence are given below (1–3):

(1) *engine* ‘engine: a lexical loan’ – *silnik* ‘engine: a semantic loan’
(2) *cookies* ‘cookies: a lexical loan’ – *ciasteczka* ‘cookies: a semantic loan’
(3) *key* ‘key: a lexical loan’ – *klucz* ‘key: a semantic loan’.

However, it should be mentioned that the corpus also contains other types of similar lexical pairs. These are not included in the present analysis but will be briefly presented in the current section to complete the picture and situate “lexical loan – semantic loan” doublets against the background of other lexical pairs.

First, the doublets not taken into consideration in the present analysis include English lexical loans in Polish coexisting with Polish native forms (but not semantic borrowings). In such cases, the subsense of the Polish word related to computers does not constitute a separate meaning, but only a usage in new contexts (without the change in meaning) and the word is therefore not regarded as a semantic innovation. For instance, in the pair *hardware* – *sprzęt* ‘equipment; hardware’ (Example 8), the word *sprzęt* ‘equipment; hardware’ used with reference to computers is not treated as a semantic loan due to its very close proximity to traditional meanings (e.g., *sprzęt biurowy* ‘office equipment’, etc.). Thus the word *sprzęt* ‘equipment; hardware’ is used in new contexts, but not a new sense. Admittedly, closeness of new and traditional meanings is not always a

precise criterion but it can be determined with the help of a dictionary of Polish (WSJP). In the case of *sprzęt* 'equipment; hardware', the sense related to computers is not included as a separate meaning, but given together with other collocations, such as *sprzęt sportowy, narciarski, medyczny* 'sport, ski, medical equipment'. This is in stark contrast to the new sense of *silnik* 'engine' (Example 1), where the new meaning ('the most important part of a programming code of a computer game, program, etc.') is very different from the traditional sense ('machine that coverts some kind of energy into motion') and included as a separate meaning in WSJP. Therefore, the pair *engine* 'engine: a lexical loan' – *silnik* 'engine: a semantic loan' (Example 1) is included in the study (a new meaning has appeared under the influence of English in the case of *silnik* 'engine', and the word is therefore a semantic loan) while the pair *hardware* 'hardware: a lexical loan' – *sprzęt* 'equipment; hardware' (Example 8) is excluded (no new meaning has appeared in the case of *sprzęt* 'equipment; hardware').

Examples (4–9) of the doublets of the type described above (not included in the study) are given below:

(4) *error*/*bug* 'error in a computer program'– *błąd* 'error in a computer program, but also in a general sense'
(5) *mousepad* – *podkładka* 'mousepad' (but also a small piece of plastic, wood, cloth, etc., in general)
(6) *addon* 'addon to a computer game' – *dodatek* 'addon to a computer game' (but also an addition, supplement, appendix, etc., in general)
(7) *speaker* 'computer speaker' – *głośnik* 'speaker' (general sense, not necessarily connected to computers)
(8) *hardware* – *sprzęt* 'hardware, also: equipment' (general sense, not necessarily connected to computers)
(9) *link* – *odnośnik* 'link; also: cross-reference' (more general sense).

The second type of pairs not taken into account include English lexical loans in Polish coexisting with Polish native lexical neologisms or native derivatives. Such pairs are not included because they do not contain English semantic loans, cf. Examples 10–12:

(10) *software* 'computer programs' – *oprogramowanie* 'software: a native derivative of the word *program* "program"'
(11) *driver* 'a piece of software that controls peripheral devices' – *sterownik* 'driver: a native derivative of the word *sterować* "to navigate, manipulate, steer"'
(12) *warn* 'a warning given to an Internet forum user' – *ost* 'a clipped form of *ostrzeżenie* "a warning"'.

The third type of doublets not considered in the present study includes English lexical loans coexisting with English semantic loans but with only partially overlapping meanings. Such pairs are excluded because they do not fulfil the condition of identicalness of meaning: in other words, the meaning of an English lexical loan is not the same as the meaning of a corresponding semantic loan (they are only partially equivalent). For instance (cf. Example 13), although the English loan *tab* 'a page, document, etc., that can be opened by a web browser or other program on a computer screen' coexists with the word *karta* 'a tab in a web browser', the latter is polysemous in the semantic area of computers as it can also refer to 'a piece of hardware, e.g., a sound card'. Thus the English loan *tab* and the semantic loan *karta* 'tab; card' are only partially equivalent in the area of computers. This is in contrast to *engine* 'engine: a lexical loan' – *silnik* 'engine: a semantic loan' doublet (Example 1) where both the lexical loan *engine* and the semantic loan *silnik* are used with the same meaning in the area of computers and are thus fully equivalent.

Examples of this type of coexistence (13–15), with only partial equivalence and therefore not included in the present study, are given below:

(13) *tab* 'a page in a browser' – *karta* 'tab', but also 'card', e.g., *karta dźwiękowa* 'sound card', *karta graficzna* 'graphics card'
(14) *net* 'the Internet' – *sieć* 'the Internet', but also 'a local computer network'
(15) *tray* 'a piece of metal on which a mainboard is fixed; also: an area of the taskbar in Windows system which contains icons for various functions and applications' – *tacka* 'a piece of metal on which a mainboard is fixed', but also 'CD/DVD-ROM tray'.

Finally, the paper does not include multimorphemic lexical loans that coexist with loan translations. Examples of the coexistence of this type (16–18) are given below:

(16) *wireless – bezprzewodowy*
(17) *whitelist – biała lista*
(18) *northbridge – mostek północny*.

Thus, the only doublets included in the present paper are "English lexical loans – English semantic loans" pairs, i.e., English lexical loans coexisting with English semantic loans (with the same meaning) in the area of computers (see Examples 1–3).

5. Lexical and semantic loans found in the corpus: General information

It should be remarked at the beginning that setting a clear-cut distinction between a semantic area of computers on the one hand and general language on the other is not always unproblematic. The study concentrates on the semantic field of computers and, while such lexical loans as *firewall*, *firmware*, *software*, *gamepad*, and *netbook* do not pose any problems as far as their semantic categorisation is concerned, it is far more problematic in the case of more general words, used in connection with computers, but also in a broader sense. These include, among many others, such lexical borrowings as *trailer* (of a computer game), *error* (in a computer program), and *friend* (a contact on Facebook, Twitter, etc.). In general, a broad view of the computer-related semantic field has been adopted; consequently, forms of the latter type have been included in the analysis and are taken into consideration in the total count given below.

In the corpus, 583 types of lexical loans and 204 types of semantic loans (45,239 and 42,638 tokens, respectively) have been found (cf. also Zabawa 2017). Thus, there is a clear preference (in terms of types) for lexical loans over semantic ones in Polish in the semantic area of computers. This is understandable if the reasons for introducing lexical loans in professional varieties are considered. The general reasons, discussed in the classic works on language contact (e.g., Weinreich 1953: 56–61), include the need-filling motive and the prestige motive (also labelled cultural and prestige loans,[11] cf., e.g., MacKenzie 2012: 31–33), of which the former is particularly important: it is usually "easier" to import a ready-made form (and thus introduce a lexical loan) than to invent one's own form, i.e., a native neologism. Furthermore, there are additional reasons for introducing lexical loans in professional varieties, such as the international character of terminology (Witalisz 2019), semantic transparency, and constant exposure to English forms. The last motive is particularly relevant in the context of the semantic field of computers, as computer users are continually exposed to English words while browsing the Internet, using software, reading instruction manuals, etc.

Thus, we can conclude that the prevalence of lexical loans over semantic ones is to be expected and can hardly be seen as unexpected or surprising. Worth underlining is the fact, however, that the number of semantic loans, in terms of both types and (especially) tokens, is also relatively high;

[11] They are sometimes also referred to as necessary and unnecessary loans, respectively; however, in my view, those labels cannot be treated as appropriate because they move from a purely descriptive to a prescriptive, or even purist, approach to loans (cf. also Onysko & Winter-Froemel 2011; Witalisz 2022: 7, 16–17).

consequently, English semantic loans in the Polish area of computers should not be seen as minor additions to the inventory of English loans (of various types) in Polish, but as an important group constituting a significant percentage of English borrowings in Polish.

6. "Lexical loan – semantic loan" doublets found in the corpus

Altogether, 29 pairs (doublets) of lexical loans coexisting with semantic loans have been found in the corpus (excluding other types of pairs, cf. Section 4). Thus, the number of doublets of this type is relatively limited. From the point of view of semantic loans (204 types found in the corpus), the coexistence with lexical loans appears in the case of 14.22% of semantic borrowings. From the point of lexical loans (583 types found in the corpus), the coexistence with semantic loans has been found in the case of 4.97% of lexical borrowings. It is thus clear that it is more probable that a semantic loan will have a lexical loan counterpart than the other way round (i.e., a lexical loan will have a semantic loan counterpart). This appears to be consistent with the findings of Winter-Froemel & Onysko (2012: 43–64) related to lexical loans and native neologisms. Lexical loans in the sphere of computers tend not to have native equivalents or semantic loan counterparts and can therefore be assigned in their majority to the so-called cultural (need-filling) loans.

Table 1 presents all the "lexical loan – semantic loan" doublets found in the corpus. The symbol *N* shows the number of occurrences of lexical and semantic loans found in the corpus; only the meanings related to the semantic field of computers are taken into account. Thus, for example, in the case of *ticket* 'ticket: a lexical loan' – *bilet* 'ticket: a semantic loan' doublet, only the sense of 'a recording of a request or question sent electronically to a given software or hardware developer through its website' is taken into consideration and included in the total count. The / symbol is used to denote variant forms: these may relate, for example, to different parts of speech, e.g., *odświeżyć* ('refresh', verb) / *odświeżanie* ('refreshing', deverbal noun), standard forms as opposed to diminutive ones, e.g., *łata* 'patch' / *łatka* 'patch$_{Dim}$', morphological variants, e.g., *e-mail* / *mail*, and items with synonymous meanings in the field of computers, e.g., *poczta* / *wiadomość* 'mail/e-mail'.

The table is arranged alphabetically (from the point of view of lexical loans). Cases of preference for a lexical loan over a semantic one (i.e., the situations when a lexical loan is more frequent in the corpus than the corresponding semantic loan) are marked in grey for easy reference. The opposite situation, i.e., preference for a semantic loan, remains white.

Table 1. Instances of the coexistence of English lexical and semantic loans found in the corpus.

English lexical loan	**N**	**English semantic loan**	**N**
bookmark	2	zakładka	507
button	29	guzik	16
channel	67	kanał	128
cookies	58	ciastka/ciasteczka	53
desktop	27	pulpit	304
dump	1	zrzut/zrzucać	109
engine	10	silnik	154
event	3	zdarzenie	63
firewall	180	zapora	100
freeze	13	zamrozić	3
inject	2	wstrzykiwać	3
kernel	11	jądro	28
key	77	klucz	345
label	2	etykieta	12
load/loading	6	ładować/ładowanie	115
mail/e-mail	569	poczta/wiadomość	613
memory	5	pamięć	1484
patch	130	łata/łatka	50
reader	1	czytnik	31
refresh	2	odświeżyć/odświeżanie	81
sandbox	5	piaskownica	15
shell	7	powłoka	7
skin	35	skóra/skórka	51
spider	1	pająk	2
spyware	28	szpieg	67
stack	1	stos	5
support	96	wsparcie	108
ticket	1	bilet	1
trailer	31	zwiastun	47

As mentioned above, the coexistence of English lexical and semantic loans (with the same meaning related to computers) is relatively infrequent. In general, as discussed in Section 5, there is a preference for English lexical loans over semantic ones in the Polish semantic field of computers. The situation is different, however, when both types coexist: in such situations, there is often a clear preference for a semantic loan. The lexical loan is preferred over a semantic one in five cases only (marked gray in Table 1).

To visualise this preference further, I have divided the 29 doublets shown in Table 1 into five main groups (A–E), depending on the frequency of a lexical loan in relation to a corresponding semantic borrowing. The following groups have been distinguished:

Group A: strong preference for a lexical loan, i.e., a lexical loan is at least twice as frequent in the corpus in comparison to a semantic loan;
Group B: moderate preference for a lexical loan, i.e., a lexical loan is more frequent than a semantic one, but not twice as frequent;
Group C: no clear preference, i.e., one item (a lexical or a semantic loan) is less than 25% more frequent than the other one;
Group D: moderate preference for a semantic loan, i.e., a semantic loan is more frequent than a lexical one, but not twice as frequent;
Group E: strong preference for a semantic loan, i.e., a semantic loan is at least twice as frequent in comparison to a lexical loan.

The classification of the doublets found in the corpus into the aforementioned groups is presented in Table 2.

Table 2. Doublets arranged according to the preference of a lexical loan over a semantic one or vice versa.

Group	**N**	**Doublets**
A	2	patch – łata/łatka freeze – zamrozić
B	2	button – guzik firewall – zapora
C	5	cookies – ciastka/ciasteczka mail/e-mail – poczta/wiadomość shell – powłoka support – wsparcie ticket – bilet
D	4	channel – kanał inject – wstrzykiwać skin – skóra/skórka trailer – zwiastun

E	16	bookmark – zakładka desktop – pulpit dump – zrzut/zrzucać engine – silnik event – zdarzenie kernel – jądro key – klucz label – etykieta load/loading – ładować/ładowanie memory – pamięć reader – czytnik refresh – odświeżyć/odświeżanie sandbox – piaskownica spider – pająk spyware – szpieg stack – stos

In most cases, as Table 2 shows, there is a strong preference for a semantic loan over a lexical one (more on this in Section 7).

7. Discussion

As mentioned in Section 5, English lexical loans in the semantic field of computers in Polish are generally preferred over semantic loans (583 types of lexical borrowings as opposed to 204 types of semantic loans). This general preference for lexical loans can possibly be explained by a number of factors.

The first factor to be taken into consideration, and probably the most important, is "easiness". In the area of computers, it is often the case that a new name is imported alongside a new object or concept. In such cases, it is usually "easier" to import a ready-made form than to invent one's own (cf. Section 5). For example, it has been "easier" to borrow the English word *computer* and use it in Polish (P. *komputer*) rather than to invent one's own term, even though attempts of this type had been made in the past, cf. the construction *mózg elektronowy* 'lit. brain electron$_{Adj}$' (cf. the entry for *mózg elektronowy* in WSJP, defined as "*dawne* określenie komputera" 'an *old* term for a computer' [emphasis mine]). However, this construction has not been accepted in the language.

The second possible factor is brevity. English lexical loans in Polish are often shorter and thus more convenient than native constructions or loan translations, e.g., P. *laptop* existing alongside the longer construction *komputer przenośny* (most likely a calque of E. *portable computer*) and P. *subwoofer*

coexisting with *głośnik niskotonowy* 'lit. speaker low-tone$_{Adj}$'. The convenience connected with brevity is particularly important in informal language, as in the present corpus.

The third factor to be taken into consideration is precision. English lexical loans in the sphere of computers are often more precise than their possible Polish equivalents, e.g., the loanwords *laptop*, *netbook*, and *notebook* can all be rendered in Polish as *komputer przenośny* 'portable computer'. The latter is, however, far less precise than the aforementioned borrowings (laptops, netbooks, and notebooks are similar but not identical devices).

Finally, the fourth factor is related to the international character of loanwords. English lexical loans in the field of computers are often understood and used internationally, which may make the international use or testing of software and hardware easier.

In addition, the level of formality of the language should also be taken into account. While not a factor per se, it may also influence the number of lexical loans: the general informality of Internet forums may encourage the use of English loanwords.

Thus, the preference for lexical loans is readily visible. As mentioned in Section 6, the situation changes when a given lexical loan coexists with a semantic borrowing with the same semantic content. The picture then looks quite different: it is the semantic loan that tends to predominate (in 24 out of 29 cases, i.e., in 82.76% cases; cf. Table 1). What is more, it is a firm preference: in 16 out of 29 cases (55.17%), a semantic loan is at least twice as frequent compared to the corresponding lexical one (Group E, Table 2).

When a lexical loan coexists with a semantic loan, the users may choose any of them. In some situations, it is probably a matter of just mere repetition: a person (an Internet forum user) repeats the construction chosen by someone else and written earlier, i.e., above (cf. Hlavac (2016: 41) and his idea of "propagation", defined as "cross-speaker habitualisation of form"). In other situations, however, the choice between a lexical or semantic loan may be conscious or subconscious and based on several different factors, both social and linguistic in nature. Social factors may include, among others, a general perception of lexical Anglicisms in the society or in a given environment, individual perception of English overt borrowings, linguistic fashion or even snobbery, the prestige of English in certain circles, etc. Social factors are outside the scope of this paper and will not be discussed in detail. A list of possible linguistic factors, together with discussion and examples, is presented below.

The criterion of length: it may appear reasonable to expect that the shorter the form, the more willing a user would be to use it, particularly in written informal language. Surprisingly, however, corpus data suggest that length is not a very important criterion. The shorter forms are not necessarily used more

frequently, cf., e.g., *key* (77 occurrences in the corpus), *skin* (35), *event* (3), *dump* (1), *sandbox* (5), *label* (2), *refresh* (2) as opposed to *klucz* 'key' (345), *skórka* 'skin' (51), *zdarzenie* 'event' (63), *piaskownica* 'sandbox' (15), *etykieta* 'label' (12), *odświeżyć* 'refresh' (81). The criterion may be a deciding factor in some rare cases, such as *cookies* 'cookies: a lexical loan' (58) as opposed to *ciasteczka* 'cookies: a semantic loan' (53).

The criterion of morphological adaptation and potential for new derivatives: it is sensible to assume that if a given lexical loan is morphologically adapted and it is easy to form new derivatives out of it, users would use it more frequently. This criterion appears to be a major factor in deciding between a lexical and semantic loan. Indeed, lexical loans unadapted morphologically or with a shape that prevents the easy formation of derivatives tend to appear less frequently than the respective semantic loans, cf., e.g., *key* (77), *channel* (67), *loading* (6), *spyware* (28), *memory* (5), *engine* (10) as opposed to *klucz* 'key' (345), *kanał* 'channel' (128), *ładowanie* 'loading' (115), *szpieg* 'spy' (67), *pamięć* 'memory' (1484), *silnik* 'engine' (154). In addition, as Winford (2010: 178) claims, forms that are morphologically more complex tend to be loan translated rather than directly borrowed. This may explain the general low frequency of multimorphemic borrowings, e.g., *bookmark* (2), *desktop* (27), *sandbox* (5).

The degree of adaptation at the level of spelling: it may be reasonable to assume that lexical loans which are orthographically adapted would be used more frequently than unadapted ones. In reality, however, corpus data suggest that this is not a significant factor, as the lexical loans which are used more frequently than semantic ones are not actually assimilated orthographically, cf. *cookies* (58), *button* (29), *patch* (130), *freeze* (13), *firewall* (180; all of them belong to Groups A, B, or C, cf. Table 2). However, in some cases, the lack of assimilation at the spelling level may contribute to the less frequent usage of lexical loans compared to the respective semantic ones, as in the case of *reader* (1), *label* (2), *channel* (67), *key* (77), *loading* (6), *refresh* (2), *spyware* (28), *bookmark* (2), *engine* (10) as opposed to *czytnik* 'reader' (31), *etykieta* 'label' (12), *kanał* 'channel' (128), *klucz* 'key' (345), *ładowanie* 'loading' (115), *odświeżyć* 'refresh' (81), *szpieg* 'spy' (67), *zakładka* 'bookmark' (507), *silnik* 'engine' (154). Furthermore, in some situations, the lack of assimilation at the spelling level may be the explanation for why "lexical loan – semantic loan" doublets appear in Polish. For example, the word *ciasteczka* 'cookies' may have appeared in Polish in the sense connected to computers as an answer to the word *cookies*, unassimilated at the level of spelling.

Semantic transparency: one may assume that unambiguous loans with clearly defined meanings would be preferred in specialised fields such as computer science. In practice, it may be a possible factor in some cases, but not

a major one. Lexical loans with clearly defined meanings may be preferred in the language of computer science, e.g., *firewall* (180), *button* (29), *cookies* (58) as opposed to *zapora* 'firewall' (100), *guzik* 'button' (16), *ciasteczka* 'cookies' (53). There are, however, many counterexamples, e.g., *reader* (1), *channel* (67), *stack* (1), *spyware* (28), *memory* (5), *bookmark* (2) used less frequently than the corresponding semantic loans, viz. *czytnik* 'reader' (31), *kanał* 'channel' (128), *stos* 'stack' (5), *szpieg* 'spy' (67), *pamięć* 'memory' (1484), *zakładka* 'bookmark' (507).

Frequency of exposure (i.e., computer users' exposure to written texts): if a given form is used, for example, in instruction manuals for a piece of hardware or software, official websites of software and hardware developers, Polish versions of software, etc., then it is reasonable to expect that this form would be used more frequently on Internet forums.[12] Corpus data suggest that exposure may be an important criterion. In fact, it may be the most plausible explanation for the frequency of some of the lexical loans, e.g., *cookies* (58), *firewall* (180), *patch* (130) as opposed to *ciasteczka* 'cookies' (53), *zapora* 'firewall' (100), *łatka* 'patch' (50). It may also contribute to a relatively high frequency of such forms as *support* (96), *channel* (67), *e-mail/mail* (569), *trailer* (31). Conversely, a low level of exposure may be responsible for the low frequency of such forms as *reader* (1), *stack* (1), *dump* (1), *label* (2), *refresh* (2), *event* (3), *sandbox* (5), *engine* (10), *kernel* (11).

International character: if a given lexical loan appears in other European languages, it seems more probable that it would be used more frequently also in Polish. In reality, this is most probably not a deciding factor but may reinforce the exposure criterion. Thus, for example, *cookies* and *firewall* also appear in many other European languages, including German and Spanish, among others. Therefore, it may reinforce the exposure criterion (see above).[13]

Time aspect: it may appear reasonable that the earlier a given form appeared in Polish, the more frequently it would be used. Corpus data suggest, however, that this is not a very important factor. Many of the lexical loans described in the paper have been introduced to Polish almost 30 years ago (this can be determined on the basis of NKJP); yet, they are still less frequently used than the corresponding semantic loans. This is the case of, e.g., *desktop* (first

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12 This is an intuitive claim, based on browsing through random instruction manuals and visiting random websites devoted to computers (but cf. also Footnote 13). For example, the word *firewall* is frequently used on Internet websites devoted to antivirus software, the word *patch* is often used on Internet websites devoted to computer games and the form *cookies* frequently appears on websites devoted to computers in general.

13 However, one must remember that the international character of terminology may also relate to semantic loans (semantic internationalisms), cf., e.g., Spanish *el ratón* 'mouse' (Munday 2005: 62), and French *souris* 'mouse' (Örsi 2008: 213; Mott & Laso 2019: 162).

attestation in Polish in 1994; NKJP), *memory* (1995), and *bookmark* (1996), which are used much less frequently (Group E in Table 2) than the corresponding semantic loans *pulpit* ‘desktop’, *pamięć* ‘memory’, and *zakładka* ‘bookmark’.

When we juxtapose the possible criteria enumerated above with the actual results of the study (Tables 1 and 2), it becomes clear that some of the criteria are more important than others. Specifically, it appears that the morphological adaptation and degree of exposure are among the most important. The remaining criteria appear less consistent as there are many counterexamples.

It must be added at this point that some of the criteria may oppose each other in the case of some concrete constructions. Thus, for example, the word *cookies* (58 occurrences) is used more frequently than *ciasteczka* ‘cookies: semantic loan’ (53), even though the former is not adapted at the level of spelling and morphology. Thus, the criterion of morphological adaptation does not seem to apply here; rather, it is the criterion of exposure that is deciding here.[14] In other situations, conversely, more than one criterion acts in line, and they mutually reinforce one another, cf., e.g., *engine* (10), used less frequently than *silnik* ‘engine: semantic loan’ (154), possibly because of the lack of morphological assimilation, the lack of assimilation at the level of spelling, and the low level of exposure. Consequently, it appears that in most cases of the coexistence of a lexical and semantic loan, it is not a single criterion that can account for the preference for a given term over another, but rather a whole set of criteria that influence (and sometimes oppose) each other.

8. Final remarks

To sum up, in the past the influence of English upon Polish was largely restricted to lexical loans (cf., e.g., Mańczak-Wohlfeld 2006). Now, due to rapid technological development, worldwide globalisation, changes in communication between people, growing knowledge of English, etc., other types of loans have become evident as well, such as semantic loans. Generally, in the language of computer science, it is still lexical loans that predominate over semantic ones. This should not be surprising considering the international character of computer-related terminology and the “easiness” of borrowing a ready-made term from English. However, it is worth pointing out that the number of semantic loans (both in terms of types and tokens) is also relatively

[14] For instance, in the MoncoPL corpus (the corpus consists currently (6th June 2023) of 8,236,218,147 running words), the word *ciasteczka* (including inflected forms) appears 3,167 times, while the word *cookies* as many as 1,406,762 times. It is therefore clear that, when browsing the Internet, users are far more frequently exposed to the form *cookies* than *ciasteczka*.

high. Consequently, they should not be perceived as an insignificant addition to lexical loans, but as an essential group of borrowings; in fact, one can intuitively say that they are becoming increasingly numerous.

To denote a given meaning, language users usually display a particular preference for either a lexical or semantic loan. For example, the concept of 'software that is free to use but a user has to agree to have advertisements displayed on the screen' and 'an author of a blog' is expressed by the lexical loans *adware* 'adware' and *bloger* 'blogger', respectively, taken directly from English. Conversely, the concept of 'the state when a computer's power is down but it retains its state, RAM contents, etc.' and 'a function of antivirus software that allows a suspected file to be put into an isolated area of the hard disk' is expressed by semantic loans *hibernacja* 'hibernation' and *kwarantanna* 'quarantine', respectively. Thus, the usual scenario is the existence of either a lexical or semantic loan to denote a given concept.[15] The emergence of either a lexical or semantic loan often blocks the emergence of the other type.

Thus, it is not surprising that the cases of the coexistence of lexical and semantic loans (with identical meanings) are not very numerous and should rather be seen as exceptions to the rule. As mentioned in Section 5, it is usually "easier" to borrow a ready-made term from English, hence the preference for lexical loans over semantic ones. In addition, other criteria are also in operation, such as the international character of computer-related terminology and frequent exposure to English terms. It is more surprising to note that when the coexistence is actually in operation, it is the semantic loan that is preferred (cases of equal coexistence in terms of the number of occurrences or of the preference for a lexical loan are relatively rare, cf. Table 2). This is most likely due to the lack of the morphological adaptation of some lexical loans and the possible difficulties in creating derivatives. In some selected cases, the lack of adaptation at the level of spelling and low exposure (e.g., in the case of very highly specialised terms) may also be at play.

Naturally, the field of computer science is constantly developing and new pieces of software and hardware are constantly being produced. Thus, new vocabulary items appear in Polish all the time. Therefore, the whole picture is very dynamic; consequently, it is hard to predict whether existing "lexical loan – semantic loan" doublets with identical meanings will survive, or one form will fully replace the other one, or perhaps both will survive but the meaning of one of them will become more specialised, and therefore it will no longer count as a doublet with identical meanings. It is also hard to predict whether the number of

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[15] Naturally, a given concept may also be expressed by a native neologism, semantic innovation, an English-Polish hybrid construction, etc. However, since this paper focuses on the interplay of English lexical and semantic loans, these do not concern us here.

these types of doublets will increase in the future. It is impossible to provide entirely conclusive answers to all these questions; consequently, ongoing research in the field is a necessity.

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APPENDIX

This appendix provides the list of 32 Internet forums from which the entries that compose the corpus have been taken:

Bajt (http://forumbajt.pl/forum.php)
Komputerowe PL (http://forumkomputerowe.pl)
PC (http://www.forumpc.pl)
Fast PC (http://www.fastpc.pl)
Tweaks (http://www.forum.tweaks.pl)
PC Lab (http://forum.pclab.pl)
PC Foster (http://forum.pcfoster.pl)
PCcom.pl (http://pc-com.pl/forum)
HotFix (http://forum.hotfix.pl)
PCSH (http://www.pcsh.pl)
Programosy (http://forum.programosy.pl)
Pure PC (http://forum.purepc.pl)
Pececik (http://pececik.com/forum)
ITPC (http://forum.itpc.net.pl)
Haker (http://haker.com.pl)
PC Format (http://forum.pcformat.pl)
Komputer Świat (http://forum.komputerswiat.pl)
Pecetowiec (http://pecetowiec.pl/index.php)
Benchmark (http://forum.benchmark.pl)
PC Forum (http://forum.pcforum.eu)
WebElite (http://www.webelite.pl)
Gazeta.pl Forum – Komputer
(http://forum.gazeta.pl/forum/f,34,Komputer.html)
Katalogi (http://katalogi.pl/forum/4-forum-komputerowe)
pl.comp.bazy-danych discussion group
(http://groups.google.com/forum/#!forum/ pl.comp.bazy-danych)
PC Centre (http://forum.pccentre.pl)
Pomoc PC (http://www.pomoc-pc.com)
Forum Komputerowe (http://forumkomputerowe.com)
PC Mod (http://www.pcmod.pl)
Guru PC (http://www.gurupc.pl)
Giermania (http://www.giermania.fora.pl)
Game 4 Fun (http://game4fun.pl)
Playofgame.pl (http://playofgame.pl/forum.php)