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STUDENTS' STRATEGIES FOR TRANSLATING MOST FREQUENT ENGLISH LOANWORDS IN CROATIAN

English has become the dominant donor language for many languages, including Croatian. Its prestigious status reduces the likelihood of borrowed words to adapt to a recipient language. As a result, some English loanwords occur in an unadapted form. Recent computational linguistic resources have given the necessary corpus-based data on the frequency and use of English loanwords in Croatian. This paper investigates the strategies employed by 116 students of the Faculty of Maritime Studies, University of Rijeka when asked to translate 392 most frequent, corpus-derived English loanwords into Croatian. The results were then compared with the available corpus-based data. The results show that single-word Croatian equivalents were preferred over adapted forms of English loanwords and multi-word expressions. When no such equivalent was available, unadapted English forms were used more frequently compared to adapted forms and multi-word expressions. The co-existence of loanwords and their native equivalents is reflected in responses to loanwords that have and those that do not have single-word equivalents. The results highlight the need for creating semantically precise single-word native equivalents, at the same time illustrating the resistance to accept novel native words.

1. Introduction

Reasons for lexical borrowing are numerous, but some of the most important are related to prestige (e.g., Field 2002), language exposure (e.g., Drljača 2006), and inadequacy of native words to fulfill the speakers' communication needs (e.g., Muhvić-Dimanovski and Skelin Horvat 2008). Borrowed words are generally described in terms of the degree of their adaptation to the recipient language (e.g., Görlach 2002; Entlová and Mala 2020), or their inclusion into the language (e.g., Kay 1995; Mederal 2016). The prestigious status of English (e.g., Crystal 2003) reduces the likelihood of borrowed words adapting to a recipient language (McKenzie 2010). Consequently, some English loanwords occur in an unadapted form (e.g. 'bodybuilder'). In other words, they retain the orthographic, phonological, and morphological properties of the donor language, but they can also take native affixes if necessary (e.g., plural/singular; case declension). It appears that the terminology referring to this group of borrowed words is not unified, so terms like 'raw anglicisms' (e.g., Kavgić 2013), 'foreign words' (e.g., Babić 1961, Klaić 1966 and Raguž 1973 for loanwords from various languages; Međeral 2016 for loanwords from English) or 'pseudoanglicims' (e.g., Filipović 1990) are used. However, the term 'English loanwords' (e.g., Greenall 2005; Kay 1995; Rüdiger 2018) seems to be widely accepted, so in this paper, it will be used for words borrowed from English that occur in an unadapted form, sometimes with Croatian affixes.

Some of the ways to deal with borrowed words include giving new meanings to existing words, finding multi-word descriptions, or introducing calques and new words. Although the use of native words is generally recommended (Hudeček and Mihaljević 2005; Institute of Croatian language and linguistics 2015), sometimes it can be challenging to use Croatian equivalents for several reasons. Firstly, using the existing words and giving them new meanings (e.g., 'gadget' - *spravica*) may result in insufficient precision, while multi-word descriptions can be impractical and difficult to use (Drljača 2006; Škifić and Mustapić 2012). For example, if *programska podrška* ('software') and *razvojni inženjer* ('developer') (Institute of Croatian language and linguistics 2015) are used to translate 'software developer', the result would be a rather complex multi-word expression - *razvojni inženjer programske podrške*. Secondly, the process of introduc-

ing new words is too slow (Muhvić-Dimanovski and Skelin Horvat 2008), so by the time a new word is introduced, the available loanword has already been widely accepted among the speakers. Finally, attempts to introduce new words are often met with resistance (Drljača 2006; Muhvić-Dimanovski and Skelin Horvat 2008), which has also been documented in other languages (e.g., Greenall 2005).

Research has shown that speakers generally have positive attitudes towards the use of English loanwords in informal contexts and in domains such as information technology and showbusiness (Drljača Margić 2014; Rüdiger 2018). On the other hand, they prefer native words in formal contexts (Drljača Margić 2012, 2014; Rüdiger 2018). Although generally open to the use of native equivalents, Croatian speakers find them either inadequate or insufficiently familiar (Patekar 2019). Similar patterns have been observed in other languages, with novel native equivalents seldom being entirely accepted and mostly used in parallel with English loanwords (e.g., Rollason 2004, Munday 2005). When adapted forms of loanwords exist, speakers seem to use all available options: native words, and adapted and unadapted forms, which has also been observed in Croatian (Liermann-Zeljak 2013). In languages in which English loanwords regularly undergo adaptation on all linguistic levels, speakers tend to have a more positive attitude towards their use (e.g., Scherling 2013). Consequently, the need for the introduction of novel native equivalents is reduced in such cases. The recent increase in the production of highly popular, linguistically uncorrected audiovisual content such as vlogs, podcasts, and short videos on social networks has been shown to entail a more frequent use of unadapted English loanwords (e.g., Dabu 2018). This is especially evident among adolescents and young adults (e.g., Nikolić-Hoyt 2005; Skelin Horvat 2015). As media play an important role in the introduction of new words (e.g., Drljača Margić 2009; Muhvić-Dimanovski i Skelin Horvat 2008), such content could contribute to an increased intake of English loanwords. Due to the described challenges related to finding adequate native equivalents, some authors propose a more open approach to loanwords, which would allow their adaptation to Croatian if such a form could be easily incorporated into the language (e.g., Peti-Stantić 2013).

Research on the use of English loanwords in Croatian has mostly focused on specific domains (Matić 2017; Mihaljević 2003; Mihaljević Djigunović, Cergol

and Qingmin 2006), speakers' preferences (e.g., Drljača Margić 2014; Patekar 2019), analyses of selectively chosen words (e.g., Drljača Margić 2009; Ćoso and Bogunović 2017) or small-scale, *ad hoc* corpora (e.g., Brdar 2010; Hudeček and Mihaljević 2005). However, to gain an in-depth view into the use of English loanwords in Croatian, it is necessary to utilize some of the computational linguistic resources available for Croatian. Attempts to extract English loanwords from corpora have been made in many languages (Alvarez-Mellado 2020; Andersen 2012; Castro, Souza and De Oliveira 2016; Serigos 2017). In Croatian, this resulted in the Database of English words in Croatian (Bogunović and Kučić 2022), in which English loanwords were extracted from the *Corpus of Croatian News Portals ENGRI (2014-2018)* (Bogunović et al. 2021), and further complemented with the data obtained from *hrWaC* (Ljubešić and Erjavec 2011; Ljubešić and Klubička 2014) as well as Croatian equivalents and word frequencies for both corpora (Bogunović, Jelčić Čolakovac and Borucinsky 2022).

2. The present study

The described resources provide valuable insight into the use of English loanwords in Croatian. What seems to have been rather neglected so far is an investigation into the variety of forms in which these words and their native equivalents are used in Croatian. The available data on English loanwords and their Croatian equivalents (Bogunović, Jelčić Čolakovac and Borucinsky 2022) show that some English loanwords do not have native equivalents. Others do, either in a form of single- or multi-word translations. However, some of the proposed solutions for English loanwords have not been accepted either by the speakers or the linguistic community (e.g., Halonja and Mihaljević 2009). The available frequency data (Bogunović, Jelčić Čolakovac, and Borucinsky 2022) indicates that some of these solutions do not fulfill the speakers' communication needs. It appears that native speakers intuitively recognize what is acceptable to language with respect to intelligibility, word formation as well as semantic logic (Muhvić-Dimanovski and Skelin Horvat 2008).

Unadapted English words are frequently used by adolescents and young adults (e.g., Ćoso and Bogunović 2017), so this study focuses on the student popula-

tion. It seems that speakers generally have positive attitudes towards English loanwords in domains like technology and information technology (e.g., Drljača Margić 2014; Rüdiger 2018). Moreover, exposure to English in these professions has been well documented (e.g., Liermann-Zeljak 2013, Matić 2017). Thus, the students studying Marine Electronic Engineering and Information Technology at the Faculty of Maritime Studies, University of Rijeka seem an appropriate population for the study.

Previous research has investigated the use of English loanwords in specific domains, analyzed selectively chosen words or the words were explored within a domain-specific, predetermined context (see § 1). In contrast, the present study builds upon an objectively compiled list of English loanwords with the highest frequencies in two Croatian web corpora. The aim of the study is to investigate the strategies employed by the students of the Faculty of Maritime Studies at the University of Rijeka when asked to translate 392 most frequent, corpusderived unadapted English loanwords into Croatian. The focus of the study is on language use, rather than knowledge. Our goal is to examine the extent to which the members of the population under study are aware of the availability of Croatian native equivalents for unadapted English loanwords, whether they are willing to use them in a translation task, and which solutions they prefer for English loanwords with and without Croatian single-word equivalents. Data of this sort would complement the already available frequency data from the Database (Bogunović, Jelčić Čolakovac and Borucinsky 2022), and would further deepen our understanding of the coexistence of foreign words and various types of their equivalents in the language use of speakers from the population under study.

The loanwords are presented outside the sentence context, in a word-by-word manner. This presentation mode has two purposes. First, it minimizes the bias towards producing native Croatian or English unadapted or adapted forms as equivalents of English loanwords; the choice is already restricted by the task and by the wider context of the study. Second, in the case of polysemous words, borrowed into Croatian in one of their meanings, this will provide an insight into which meaning is dominant for participants.

The data obtained from the participants is further compared with the available corpus-based data to examine whether their choice depends on the availability of single-word native equivalents. Based on previous research (Liermann-Zeljak

2013, Rollason 2004, Munday 2005), we expect to find all variants of English and Croatian forms in the participants' responses, with Croatian equivalents prevailing for loanwords with available single-word equivalents. However, for English loanwords with no such equivalents, data from previous research is not sufficient to predict whether the participants will prefer Croatian multi-word translations or English words in their unadapted or adapted forms.

3. Method

3.1. Participants

In total, 116 students of the Faculty of Maritime Studies, University of Rijeka participated in the study (Nm = 79, Nf = 37): 20 participants studied Technology and Organization of Transport (Nf = 8, Nm = 12), 49 studied Logistic and Management in Maritime Industry and Transport (Nf = 25, Nm = 24) and 47 studied Marine Electronic Engineering and Information Technology (Nf = 4, male Nm = 43). All participants were undergraduate students, aged 19-28, with good or corrected vision. They all attended English courses at the Faculty (three or four classes per week). Through these courses, they were familiarized with various translation tasks. The students' participation in the study was completely voluntary.

3.2. Materials and procedure

A total of 392 most frequent English loanwords used in the present study were obtained from the Database of English words and their Croatian equivalents (Bogunović, Jelčić Čolakovac and Borucinsky 2022). The mean relative frequencies (number of hits per million words) of the selected words equaled 4.4 in hrWaC (SD = 8.52) and 3.55 in ENGRI (SD = 7.86).

The selected English loanwords were randomly divided across six questionnaires: four questionnaires contained 65 English loanwords, while two had 66 English loanwords (available in supplementary material). English loanwords were presented separately, out of context, and in a randomized order. Each questionnaire was assessed by 19 participants on average (M = 19.33, SD = 1.49). The questionnaires were distributed using different FormURL links.

The participants were instructed to translate the meaning of English loanwords into Croatian as accurately as possible, even if it required using a linguistic expression that does not comply with the Croatian standard language. In the latter case, they were instructed to write a word or a phrase they would normally use to express the intended meaning. As the focus of the study is on the actual use of these forms, both standard and non-standard responses were allowed. The time necessary to complete the task was approximately 30 minutes.

The instructions and the examples are shown in Figure 1.



Figure 1. Example of the form used in the study¹

¹ In the instructions the term 'standard language' *standardni jezik* was deliberately replaced with the term 'literary language' *književni jezik* based on the authors' teaching experience with the population under study. Namely, the former term is largely unknown by the student population, whereas the latter term is mostly known and used in the intended meaning.

4. Results

To analyze responses obtained from the participants, Croatian equivalents for the English loanwords included in the study were extracted from the Database of English words and their Croatian equivalents (Bogunović, Jelčić Čolakovac and Borucinsky 2022). Some of the Croatian equivalents found in the Database were adapted forms of English loanwords. Still, due to the fact that these forms were proposed by relevant linguistic sources used in the creation of the Database, they were included in the analysis. For example, adapted form kikboks is listed as an equivalent for 'kickboxing' (Filipović 1986) while kik is also offered as an equivalent for 'kick' (Filipović 1990). The equivalents for words with multiple meanings were selected based on the most frequent meaning from the two corpora. However, in the analysis of students' responses, all translations that correspond to any of the possible meanings were classified as correct. The database provided a single-word Croatian equivalent for 302 English loanwords, while the remaining 90 words had no such equivalent. Instead, a Croatian multi-word expression was available for most of these words (e.g., masovno financiranje 'crowdfunding' or razvojni inženjer 'developer').

Due to the fact that all English loanwords can be described or paraphrased, it is difficult to disentangle which multi-word expressions can be treated as translation equivalents. Thus, based on the data obtained from the database the selected English loanwords were classified as follows:

- 1. words with the single-word equivalent in Croatian (SW)
- 2. words with no single-word equivalent in Croatian (NSW)

The responses obtained from the participants were categorized according to language, form, and accuracy:

- 1. Unadapted English forms,
- 2. Adapted English forms,
- 3. Correct Croatian translation,
- 4. Incorrect Croatian translation, and
- 5. Zero response.

The collected responses were either single-word equivalents or multi-word units. In the analysis of translation accuracy, the two types of Croatian equivalents were collapsed. Multi-word responses were analyzed separately only for responses to loanwords from the NSW category.

The analysis was conducted in the R environment for statistical analysis (R Core Team 2021) via the RStudio interface (RStudio Team 2021) using the packages rstatix and ggpubbr (Kassambara 2020, 2021) and tidyverse (Wickham et al. 2019).

4.1. Descriptive statistics

A total of 392 English words were translated by the participants. Additional cross-checking revealed that two loanwords had to be excluded from the analyses: 'gut' (used as a German loanword), and 'messenger' (used as an application name). Out of the remaining 390, 76.92% (N = 300) had a single-word Croatian equivalent (Bogunović, Jelčić Čolakovac and Borucinsky 2022), while 23.8% of words (N = 90) did not. A total of 14.36% of words (N = 56) had identical unadapted and adapted forms (e.g., 'laptop', 'blog', 'server').

The overall percentage of zero responses was 6.01%, while 71.03% of responses were correct. Only 5.66% of responses were classified as incorrect. These results suggest that the participants were generally familiar with the words. Descriptive statistics for different response classes is shown in Table 1.

Table 1. Descriptive statistics for different response classes

	M (%)	SD	Mdn (%)	Q1 (%)	Q3 (%)	min (%)	max (%)
Unadapted English form	12.30	15.75	5.26	0	20.00	0	86.36
Adapted English form	5.71	12.26	0	0	5.26	0	94.74
Correct Croatian translation	71.03	28.51	81.82	52.63	95.00	0	100

Incorrect Croatian translation	5.66	8.48	4.55	0	9.09	0	63.16
Zero response	6.01	10.34	0	0	9.09	0	68.42

4.1.1. English loanwords across the responses

Translations of 61.79% of words (N = 241) included at least one unadapted form, while at least one adapted form was provided for 47.95% of words (N = 187). The responses for 42.05% of words (N = 164) included all three translation variants: adapted and unadapted English forms, as well as Croatian translations.

The loanword with the highest percentage of English responses was 'server' (86.36% of responses). The word 'system' (*sustav*) was most frequently translated into its adapted form *sistem* (94.74%). English loanwords with the highest percentage of unadapted and adapted responses are shown in Tables 2 and 3.

Table 2. English loanwords with the highest percentage of unadapted translations

	Croatian	Adapted	English	Adapted	Croatian	Zero
	single-word	form	word	form	translations	responses
	equivalent		(%)	(%)	(%)	(%)
server	poslužitelj	server	86.36	86.36	9.09	4.55
blog	-	blog	84.21	84.21	10.52	5.26
tablet	-	tablet	73.68	73.68	26.32	0
link	poveznica	link	64.71	64.71	35.29	0
hardware	očvrsje, sklopovlje	hardver	63.16	15.79	10.53	10.53
influencer	-	influenser	63.16	15.79	15.79	5.26
punk	-	pank	60	15	15	10
monitor	zaslon	monitor	58.82	58.82	41.17	0
spa	toplice	spa	52.94	52.94	47.05	0
kickboxing	kikboks	kikboksing	52.63	21.05	15.8	0

Table 3. English loanwords with the highest percentage of adapted translations

	Croatian single-word equivalent	Adapted form	English word (%)	Adapted form (%)	Croatian translations (%)	Zero responses (%)
system	sustav	sistem	0	94.74	5.26	0
band	grupa	bend	21.05	68.42	10.52	0
goal	cilj	gol	0	60	35	5
blogger	-	bloger	15.79	57.89	10.53	15.79
router	usmjerivač	ruter	0	57.89	26.32	15.79
boom	procvat	bum	15.79	47.37	26.31	10.53
youtuber	-	jut(j)uber	36.84	47.37	15.79	0
leasing	-	lizing	11.76	47.06	17.64	23.53
brand	marka	brend	5.26	42.11	52.62	0
cool	-	kul	31.58	42.11	21.05	5.26

In some cases, the participants responded with more than one adapted form, e.g., blokbuster/blokbaster 'blockbuster', ketering/katering 'catering', kari/kuri 'curry', ekstazi/ekstazij 'ecstasy', etc. These variations typically reflect different phonological realizations of English phonemes, as in the example ketering/katering 'catering'. Some adapted forms (e.g., blokbuster 'blockbuster', razort 'resort', emajl 'email') could be a result of mispronunciation or the lack of knowledge about English pronunciation. Also, the English phoneme /dʒ/ that is normally transcribed into Croatian as dž, was frequently replaced with d, as can be seen in the following examples: dem/džem 'jam', dez/džez 'jazz', doint 'joint', doker/džoker 'joker', etc.

4.1.2. Croatian equivalents in the responses

Responses to all English loanwords included at least one Croatian equivalent, although they varied in percentage and accuracy. The responses to 29.23% of English loanwords (N=114) were exclusively Croatian equivalents, with three loanwords being from the NSW category: 'country' (music genre), 'driver' (software component), and 'house' (music genre). The participants' responses for these three words differed in meaning from the corpus-based equivalents: država (state, country) 'country', vozač (chauffeur) 'driver', and $ku\acute{c}a$ (human habitat, house) 'house'.

The responses for 35 loanwords were either a Croatian equivalent or a zero response. A total of 22.82% (N=89) of English loanwords were translated into Croatian with 100% accuracy (e.g., 'beach' or 'color'). However, only 6.41% of words (N=25) were translated with the same equivalent by all participants (e.g., 'agency', 'body' or 'city').

Multi-word translations were used for 149 English words (5.63% of responses). Usually, this strategy was used when the existing single-word Croatian equivalent was not sufficiently precise (e.g., *račun* vs. *korisnički račun* 'account', *pretraživač* vs. *internet pretraživač* 'browser', *tvrtka* vs. *velika kompanija* 'enterprise', etc.), or when a single-word Croatian equivalent was not available (e.g., *zabava poslije glavne zabave* 'afterparty', *osoba koja stvara blog* 'blogger', *glumačka postava* 'cast', *posluživanje na feštama* 'catering', etc.).

4.2. Inferential statistics

To explore whether the participants translated SW loanwords differently than NSW loanwords, non-parametric tests were used. The availability of singleword equivalents was treated as an independent variable with two levels: words with single-word equivalents, SW (Cro_eq), and words without single-word equivalents, NSW (no_eq). Five dependent variables were measured as a percentage of responses in each category. The normality of distribution and homogeneity of variance were tested for unadapted English forms. The Shapiro-Wilk test showed that the data distribution was not normal: words with single-word equivalents W(299) = .71, p < .001, and without equivalents W(89) = .94, p < .001. The F test demonstrated unequal variances, F = 1.67, p < 0.01. Therefore, the non-parametric Mann-Whitney U test was used in the analysis.

A significant difference was found in the percentage of unadapted English forms between SW and NSW, U = 20586, p < .001, with moderate effect size, r = .39, and in the percentage of adapted English forms between the two categories, U = 12929, p < .001, r = .35. NSW loanwords were more frequently translated as unadapted English words (Mdn = 21.05%, IQR = 24.1) and as adapted English words (Mdn = 5.26%, IQR = 15.8) compared to SW loanwords (Mdn = 4.55%, IQR = 13.6 for unadapted and Mdn = 0%, IQR = 4.55 for adapted English words).

The percentage of correct Croatian translations differed, U = 4773.5, p < .001, r = .47, i.e., it was higher for SW loanwords (Mdn = 90%, IQR = 36.4) than for NSW (Mdn = 38.42%, IQR = 43.6).

The percentage of incorrect Croatian translations (Mdn = 0%, IQR = 5.42) and zero responses (Mdn = 0%, IQR = 5.26) was lower for SW loanwords compared to NSW (incorrect responses Mdn = 5.26%, IQR = 13.2; zero responses Mdn = 9.55%, IQR = 19.5), with U = 17485, p < .01, r = .23 and U = 19456, p < .01, r = .36. Complete distributions of the five response classes are shown in Figure 2.

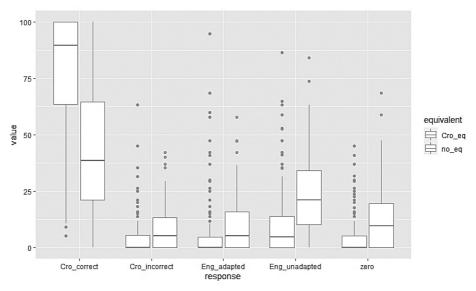


Figure 2. SW (Cro eq) and NSW (no eq) loanwords across the response classes

The Kruskal-Wallis test was used to examine the responses for NSW loanwords. The independent variable was categorical with three levels: Unadapted English words, Adapted English words, and Multi-word translations. The dependent variable was measured as the percentage of each response type. Only the responses for NSW English loanwords were included in the analysis. The Kruskal-Wallis test showed a statistically significant difference between the percentage of Unadapted English words, Adapted English words, and Multi-word translations: H(1) = 402.66, p < .01, with a moderate effect (eta² = .103). Dunn with Bonferroni correction for multiple comparisons *post-hoc* revealed a significant difference between Multi-word translations and Unadapted English words (p < .01), and between Unadapted and Adapted words (p < .01). No significant difference

was found between the Adapted English words and Multi-word translations. The percentage of Unadapted English words (Mdn = 21.05%, IQR = 24.1) in responses to NSW loanwords was significantly higher than the percentage of Adapted English words (Mdn = 5.26%, IQR = 15.8) and Multi-word translations (Mdn = 5.88%, IQR = 21). Distributions of the type of response are shown in Figure 3.

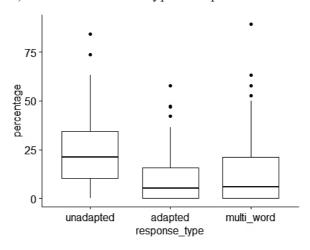


Figure 3. Responses to NSW loanwords across the response classes

5. Discussion

The results show that when presented with a translation task, the students used all the available strategies for communicating the meaning of a borrowed word: single-word native equivalents, multi-word translations as well as adapted and unadapted English word forms.

Despite the fact that English loanwords are present in almost all functional styles and domains (Bogunović and Ćoso 2013; Matić 2017; Mihaljević Djigunović, Cergol and Qingmin 2006), Croatian speakers are generally willing to invest the effort into finding a suitable Croatian expression (Patekar 2019). This is supported by 77% of Croatian translations (correct or incorrect), and a relatively high percentage (30%) of English loanwords translated exclusively as Croatian words (§ 4.1.2). This seems relevant, especially because 24% of English loanwords used in this study do not have single-word Croatian equivalents (e.g.,

'afterparty', 'blockchain', 'firmware', 'outsourcing', 'screenshot'). On the other hand, the results have confirmed that some of the proposed native equivalents have not been widely accepted, as shown by the high percentages of English words in responses to several SW loanwords, e.g., 'server' and 'hardware' (Table 2). These findings confirm that some of the proposed solutions were not very successful (e.g., Halonja and Mihaljević 2009), and were consequently not accepted by the speakers. Moreover, the results are in line with previous research suggesting that native speakers intuitively recognize what is acceptable to language (Muhvić-Dimanovski and Skelin Horvat 2008). The results also revealed parallel usage of loanwords and their native equivalents, demonstrating that the process of introducing new words to replace already existing ones is indeed very slow, and often met with resistance (e.g. Drljača 2006; Muhvić-Dimanovski and Skelin Horvat 2008). Another evidence for that comes from a relatively high percentage of loanwords translated both as English and Croatian words (§ 4.1.1). The variety of forms used by the students is particularly reflected by the fact that all three variants of single-word answers - adapted English form, unadapted English form, and a Croatian equivalent - were found in responses for more than 40% of English loanwords (§ 4.1.1), which is in line with previous findings (e.g., Liermann-Zeljak 2013)

Unadapted English forms have become especially common in specific domains, such as information technology. Corpus-based data (Bogunović, Jelčić Čolakovac and Borucinsky 2022) shows that many of the most frequent English loanwords are from the IT domain. Consequently, many loanwords included in this study were also related to information technology. One explanation could be that some professions require constant exposure to English. Language exposure has been proven to facilitate incidental vocabulary acquisition (Godwin-Jones 2015; Peters 2018), and the words acquired in such an environment are likely to retain their original form. Additionally, it seems that the student population generally has positive attitudes towards English loanwords in domains like information technology (Drljača Margić 2012; Matić 2017), which corresponds to their use of these words (Drljača Margić 2014).

The percentage of correct Croatian translations was higher for SW loanwords, while the percentage of incorrect Croatian translations, unadapted and adapted English words, as well as zero responses, was higher for NSW loanwords. In oth-

er words, the participants translated English loanwords with single-word equivalents more accurately than loanwords with no single-word equivalents, which corroborates the importance of the availability of single-word native equivalents in the translation task. The prediction on the importance of single-word equivalents was therefore borne out by the results.

5.1. Unadapted vs. adapted English responses

A relatively low percentage of adapted compared to unadapted forms in the participants' responses represents an interesting finding, with several possible explanations. Firstly, even though many loanwords have already entered the Croatian standard language in their adapted forms (e.g., *džez* 'jazz', *strategija* 'strategy'), Croatian linguists generally recommend the use of native words whenever possible (e.g., Hudeček and Mihaljević 2005). Also, creating novel Croatian words should be preferred over orthographically adapted forms (Barić et al. 1999). Some adapted forms that used to be part of the standard language were subsequently replaced by native equivalents; e.g., *sistem* 'system' was replaced with *sustav*. Although the results of this study show that the participants opted for the adapted form *sistem* more frequently than its native equivalent *sustav*, a general attitude of speakers towards the adapted forms might be unfavorable.

Secondly, the examples of adapted words found in the participants' responses demonstrate that the transcription of English words into Croatian is neither simple nor straightforward. The lack of knowledge on the pronunciation of English words, along with the phonemic differences between the two languages, can make transcription very challenging. A multitude of adapted forms available for the same word reflects the lack of agreement among the speakers on which form to use, which is not favorable to efficient communication. An interesting example is the English phoneme d_3 , consistently transcribed as d_2 in the Croatian standard language. Still, the participants often transcribed it as d_3 . If this fairly simple transcription rule represents a problem for the participants, it is not surprising that the transcription of other English phonemes yields so many different results.

Another reason for the observed asymmetry between unadapted and adapted forms could be that only English loanwords with the highest corpus frequencies (Bogunović, Jelčić Čolakovac and Borucinsky 2022) were selected for this study. In other words, it is possible that the speakers from the population under study have become used to these unadapted forms in written texts, which could have influenced their own choice between adapted and unadapted forms. Corpus of Croatian News Portals ENGRI (2014-2018) (Bogunović et al. 2021), a primary source for extracting the most frequent unadapted English loanwords for the Database of English words and their Croatian equivalents (Bogunović, Jelčić Čolakovac and Borucinsky 2022), consists predominantly of texts from Croatian news portals. Since digital media has almost completely replaced print media (Twenge, Martin and Spitzberg 2019), its influence on introducing new words and the general shaping of a language cannot be disregarded (Drljača Margić 2009). Finally, many loanwords used in this study represent relatively recent inputs into Croatian, which can be inferred from the recency of the concepts they denote. It takes a considerable amount of time for a foreign word to become familiar to such an extent that the speakers start using its adapted form (e.g., Muhvić-Dimanovski and Skelin Horvat 2008). While precisely determining the factors that entailed the higher percentage of unadapted compared to adapted forms might be beyond the reach of this study, the asymmetry itself represents an interesting finding in the context of the ongoing process of accommodating a considerable number of English loanwords.

5.2. Multi-word translations

In many cases, the use of loanwords can be ascribed to insufficient precision of the available Croatian equivalents (e.g., Drljača 2006). For example, the singleword Croatian equivalent for 'band' is $grupa^2$ (Bogunović, Jelčić Čolakovac and Borucinsky 2022). However, grupa (any kind of group of people or even objects) covers a much wider range of meanings than band, while the alternative, semantically more precise equivalent $glazbeni\ sastav$ is a multi-word unit. Multi-word expressions and descriptions have proven to be more complex to use compared to English loanwords (e.g., Škifić and Mustapić 2012), which could be the main

² Grupa is an adapted loanword as well, but a less recent one than bend.

reason they have not been accepted by the speakers. This has resulted in the widespread use of the adapted form *bend*, as illustrated by the high percentage of this form in responses (Table 3).

A significantly higher number of correct Croatian translations for loanwords with single-word equivalents than those without equivalents was observed, while the percentage of multi-word responses was relatively low. Taken together, these results indicate that the students prefer single-word equivalents over multi-word expressions. Moreover, if no single-word equivalent was available, the participants responded with an unadapted English word more frequently than with a Croatian multi-word translation (§ 4.2). There are several possible explanations, such as the speakers' communication needs or the status of English as a prestigious language. Also, the nature of the task may have played a role. Since the participants were instructed to translate the loanwords into Croatian, they might have been more inclined to provide a single-word equivalent of any kind than a multi-word expression. Perhaps some of the participants were hasty with their responses, and English words seemed as the quickest and easiest solution. Given that this study's focus was on the analysis of the responses, the motives behind them remain open for future work.

6. Conclusions

Even though the results of this study do not faithfully represent spontaneous, everyday communication, they still provide valuable data-based insight into the use of English loanwords and their Croatian equivalents among the student population under study. The results show that the participants used English loanwords even when single-word Croatian equivalents were available. They were especially inclined to do so in cases when such equivalents were not available. Multi-word expressions and adapted forms were the least preferred options. The described pattern of the participants' preferences suggests that the efforts invested in the creation of Croatian equivalents should be directed towards single-word equivalents whenever possible. However, the unavoidable exposure to English, especially in some domains, will remain to be an opposing force in the process. Perhaps this could be avoided by accepting the adapted forms, if they

comply with the rules of the Croatian language when other options do not exist. Moreover, we suggest that corpus-derived data and usage-based findings should be given more attention in future deliberation of the phenomenon.

Given that this study was conducted on a specific sample, i.e., undergraduate university students from the Faculty of Maritime Studies at the University of Rijeka, it would be interesting to see whether similar results would be obtained on a broader sample. Moreover, valuable findings could be obtained by comparing different age groups. As English loanwords are more frequent in informal, everyday communication, it may be assumed they are more frequently used in spoken language. Thus, an investigation into the use of English loanwords and their Croatian equivalents when presented auditorily could also give interesting results. The results of this study also showed that some English loanwords are almost exclusively used in one meaning, but when presented out of context the participants interpreted them differently (e.g., country, driver). Although a vast body of research has been dedicated to English loanwords, some aspects of this specific group of words are still understudied. For example, very little or no work has been done in the field of cognitive processing of these words. Moreover, the data on their affective and lexico-semantic content is available. The out-of-context approach taken in this study will contribute to future efforts in those lines of research.

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Supplementary material

Complete list of words is also available on doi.org/10.6084/m9.figshare.20137583.v1.

Strategije studenata za prevođenje najfrekventnijih engleskih posuđenica u hrvatskome

Sažetak

Status stranog jezika kao prestižnog, izloženost stranomu jeziku te neusklađenost postojećih istovrijednica s komunikacijskim potrebama govornika među najvažnijim su razlozima leksičkog posuđivanja. Zbog prestižnog statusa engleskog jezika prihvaćanje engleskih posuđenica u obliku tuđih riječi izglednije je nego njihova prilagodba jeziku primatelju. Hrvatski govornici, unatoč načelnoj otvorenosti prema uporabi hrvatskih istovrijednica, nerijetko ih smatraju neprikladnom zamjenom za posuđenice iz engleskog, te radije rabe potonje. Razvoj računalnih lingvističkih alata tijekom posljednjih godina učinio je podatke o uporabi engleskih posuđenica u hrvatskome dostupnima i omogućio uvid u stvarno *stanje na terenu*.

Cilj ovog rada bio je ispitati pristup studenata Pomorskog fakulteta Sveučilišta u Rijeci zadatku prevođenja engleskih posuđenica s obzirom na postojanje ili nepostojanje hrvatske jednorječne istovrijednice za riječi. Zadatak ispitanika bio je prevesti 392 engleske riječi izabrane prema kriteriju čestotnosti pojavljivanja u neprilagođenom obliku u mrežnom korpusu suvremenoga hrvatskog jezika. U istraživanju je sudjelovalo 116 studenata Sveučilišta u Rijeci. Odgovori ispitanika sadržavali su hrvatske jednorječne istovrijednice, hrvatske višerječne istoznačne izraze te prilagođene ili neprilagođene engleske posuđenice. Rezultati istraživanja pokazali su da su hrvatski govornici pri prevođenju engleskih riječi najskloniji uporabi jednorječnih istovrijednica. Engleske riječi za koje takve istovrijednice ne postoje ispitanici su preveli neprilagođenim oblikom posuđenice znatno češće no prilagođenim oblikom ili višerječnim hrvatskim izrazom. Izbjegavanje uporabe višerječnih prijevoda najvjerojatnije je posljedica niže komunikacijske ekonomičnosti takvih izraza u odnosu na jednorječne izraze ili pak prirode samog zadatka, dok je nesklonost prilagođenim oblicima posuđenica odraz složenosti fonetskog zapisa riječi iz engleskog jezika, visoke čestotnosti izabranih engleskih riječi u hrvatskome kao i prestižnog statusa engleskog jezika. Rezultati ovog istraživanja, kao i mnogih prethodnih, upućuju na nužnost osmišljavanja jednorječnih istovrijednica, ali i na otpor kojim ih govornici dočekuju.

Keywords: English loanwords, Croatian, borrowing, translation task

Ključne riječi: engleske posuđenice, hrvatski jezik, posuđivanje, zadatak prevođenja