The Phonology of Anglicisms in French, German and Czech: A Contrastive Approach

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Abstract

In this article, I analyse the phonological adaptation of Anglicisms in three languages (French, German and Czech) from a contrastive perspective. The classification of standard phonological forms, based on a system of eight adaptation principles, aims at capturing the degree of phonological permeability/resistance for each of the languages. Phonological approximation (the substitution of foreign phonemes with native ones) seems to be the fundamental principle in all three languages analysed. The spelling pronunciation principle is observed predominantly in French; phonological import occurs only in German. Globally, phonological resistance increases in the following order: German – Czech – French.

Keywords

1 Introduction

The way in which borrowings are adopted may be studied from several perspectives, namely semantic, formal (phonological, morphological and syntactic) and extralinguistic (social and ideological). On the phonological level, a specific discipline called "Loanword Phonology" (Calabrese and Wetzels, 2009; Kang, 2011) models this process as a "repair" of an "offending input" with respect to native phonology. This process may be incomplete and result in

the formal markedness of the borrowed phonological form (Vance, 2008). The higher the degree of phonological foreignness, the more the word is likely to be felt as a foreignism or as an instance of code-mixing. Furthermore, loanwords may exhibit greater phonological variability than native words (Retman, 1978), and the way in which they are pronounced may reveal information about the social status of the speaker (e.g., their level of education or knowledge of foreign languages).

From a sociolinguistic point of view, the concept of phonological "repair" is a simplified construct that, in reality, does not correspond to an instantaneous action performed by an ideal language user, but rather to a socially underpinned negotiation between competing principles within the target phonological system (Molęda, 2011; Duběda et al., 2014). Moreover, the phonology of loanwords is affected by extragrammatical factors and two of these factors are of particular relevance here. First, despite the standard view of phonology as a system independent of orthography, it has been demonstrated that loanwords are particularly exposed to the influence of spelling, as they are – more than native words – transmitted and learned in writing (Smith, 2006; Friesner, 2009; Escudero and Wanrooij, 2010; Molęda, 2011). Second, the adaptation of words borrowed from a particular language is at least partly conditioned by the status of this language and the knowledge of this language in the target population (Kang, 2011).

English is presently the most productive source of loanwords in many European languages, and indisputably the most important language of international communication. Being itself strongly hybridised, it became "by far the world's biggest lexical exporter" in the 20th century (Görlach, 2001: 353). Anglicisms thus form a vast lexical stratum in many languages, including the three languages examined in this article. The phonology of Anglicisms can be seen as a peripheral component of native phonology that is associated, through a system of adaptation processes, with English phonology. In the present article, drawing on a previously published typological sketch (Duběda, 2016b), I describe these processes on a contrastive basis, comparing a representative sample of original phonological forms with their adapted counterparts in French, German and Czech. I go beyond a single-language perspective and make a contribution to the phonological typology of loanwords, a domain which to date has received only limited scholarly attention (Filipović, 1982; Görlach, 2001; Molęda, 2011)

After providing a general overview of the adaptation principles (Section 2), I briefly discuss the literature for each of the languages under investigation (Section 3). In Section 4 I advance the working hypotheses and in Section 5

I present the lexical sample that I used for the analysis. In Section 6, I examine the relative weight of the individual adaptation principles, and in Section 7, I describe the rules of phonological approximation. Finally, in Section 8 I give a summary of the results of the study and some general conclusions.

2   Adaptation Principles

The classification of adaptation processes is based on a set of eight language-independent adaptation principles, proposed in Duběda et al. (2014). These principles, described in the literature under various names and with a varying degree of overlap, correspond to the different systemic forces that underlie phonological "repair".

1) **Phonological approximation** (substitution of original phonemes with perceptually related phonemes of the target language, phonotactic normalisation, prosodic normalisation). For example, *fan club* /ˈfænklʌb/ is adapted in French as /fanklœb/ (the phonemes /f, n, k, l, b/ are rendered by perceptually very similar target-language phonemes; the phonemes /æ, ʌ/ are replaced by their closest counterparts /a, œ/; stress is shifted to the final syllable). This principle is considered the most straightforward way of nativisation (Romportl, 1978; Kang, 2011). Metaphorically, it can be described as "looking at the foreign word through the eyes of native phonology".

2) **Spelling pronunciation** (conversion of the written form into the phonological form by virtue of the target-language conventions). For example, *laser* /ˈleɪzə/ is adapted in French as /lazɛʁ/ (and not */lezœʁ/, as it would be the case if phonological approximation were applied). As I pointed out in Section 1, spelling is a possible source of phonological change in the case of loanwords.

3) **Original pronunciation** (more or less successful imitation of the original pronunciation of the word).

4) **Analogy with the source language.** For example, *sweatshirt* /ˈswetʃɜːt/ is often rendered in French as /switʃœʁt/, by analogy with words where the digraph *ea* is realised as /iː/ (*read, meat, deal*).

5) **Analogy with the target language**. For example, *engineering* /endʒɪˈnɪərɪŋ/ is often adapted in Czech as /ɪnʒɛniːrɪŋk/, by analogy with the word *inženýr* /ɪnʒɛniːr/. This French borrowing entered the Czech lexicon well before the English word *engineering*, which is itself a Gallicism. This category also includes cases of folk etymology.

6) **Pronunciation influenced by a third language.** For example, the Polish politician's name *Donald Tusk* is sometimes mistakenly converted in Czech to /task/ instead of /tusk/, by analogy with English grapheme-phoneme conversion rules.

7) **Pronunciation influenced by universals.** For example, the prevailing adaptation of the French word *tartelette* /taʁt(ə)lɛt/ in Czech is *tartaletka* /tartalɛtka/, where the presence of /a/ in the second syllable may be explained as vowel harmony.

8) **Unclearly motivated pronunciation.** For example, the surname *Mulder* /ˈmʌldə/ is rendered, for no obvious reason, as /maːldr/ in the Czech version of the *X-Files*, although the English vowel /ʌ/ is normally adapted as a short /a/.

Principles 1–3 can be considered primary because they are characterised by a direct link of the target phonological form to the source phonology or spelling, and each of these principles affects the pronunciation of whole words as opposed to individual phonemes (e.g., the French adaptations /fanklœb/ and /lazɛʁ/ cited above, which are based entirely on phonological approximation and spelling pronunciation, respectively). The same set of primary adaptation principles, though with different labels, is used by Kučera and Zeman (1998). The secondary principles 4–8 have no direct link to the original pronunciation or spelling of the borrowed item. They do not affect the whole word, but only parts of it: in the examples 4–8 above, the impact of the secondary principles is limited to a few phonemes per word, the rest of the word being adapted according to principle 1.

Two or more principles may combine within the same word: for example, in the French version of *boy-scout* /bɔjskut/, the first diphthong is adapted according to principle 1 and the second according to principle 2. Moreover, different principles may account for parallelly attested pronunciations: in French, the word *pipeline* is either /piplin/, or /pajplajn/ (principle 2 or 1). The effect of principle 3 may range from a discreet trace of non-native pronunciation to a genuine imitation of the foreign phonetic form.

The three primary principles may be structured along an axis which expresses the degree of phonological permeability/resistance (Duběda, 2016b):

Permeable   ←——————————→   Resistant

Original pronunciation   Phonological approximation   Spelling pronunciation

FIGURE 1   Permeability/resistance scale

3   The Adaptation of Anglicisms in French, German and Czech

It is likely that all the principles mentioned are attested in each of the studied languages, though to a different degree. The distribution of these principles is symptomatic of the way in which a given language treats foreign phonological input and can therefore be used as a typological criterion. This section contains concise phonological description of the three languages and information on previous studies on the phonological adaptation of Anglicisms (including lexicographic sources). I use IPA-based phonological transcription, leaving out features predictable from the context (e.g., stress in French and Czech, consonant syllabicity in English, German and Czech, and vowel length in French).

3.1   *French*

French is a Gallo-Romance language whose standard European variety has 11 oral vowels (/i y u e ø o ə ɛ œ ɔ a/), 3 nasal vowels (/ɛ̃ õ ɑ̃/), no diphthongs and 19 consonants (/p b t d k ɡ m n ɲ ŋ f v s z ʃ ʒ ʁ j l/; cf. Léon, 2011; Fougeron and Smith, 1999). One phoneme (/ŋ/) is of foreign origin, supplied mainly by English loanwords (e.g., *bowling* /buliŋ/, *shopping* /ʃɔpiŋ/; cf. Walter, 1983). Primary stress is on the last full syllable (final syllables containing an /ə/ are not considered full); secondary stress is word-initial.

The phonology of French Anglicisms has, surprisingly perhaps, not received a great deal of coverage in the scientific literature (cf. the bibliography collected by Görlach, 2002). Most works are devoted to phonology in general, with little reference to Anglicisms (Walter, 1976), to Anglicisms with little reference to phonology (Aitokhuehi, 1996; Seridj, 2013), or to practical issues related to the pronunciation of Anglicisms (Trescases, 1987). Retman (1978) and Dabo-Denegri (1991) are particularly relevant for the present study. Both authors adopt a similar descriptive approach, giving a fairly complete set of attested phonemic counterparts for each English phoneme. Although their analysis does not provide a clear separation of adaptation principles or a sufficiently detailed account of the influence of cross-language analogies, it does indicate that the prevailing principles are phonological approximation and spelling pronunciation. Original pronunciation does not seem to be a probable alternative for current loanwords. Warnant's pronunciation dictionary (1987) states for proper names of foreign origin that a full imitation of original pronunciation is nowadays perceived as snobbish, and it seems reasonable to assume that this applies *a fortiori* to borrowings.

All major dictionaries (e.g., Warnant, 1987; *Le Petit Robert*, 2012; *Le grand Larousse illustré*, 2017) give transcriptions based on French phonemes only (including /ŋ/); standard descriptions of French phonology (Tranel, 1987;

Léon, 1992; Fougeron and Smith, 1999) have a similar approach. For proper names, Warnant (1987) accepts two more foreign phonemes (/θ/ and /x/), of which the former is relevant for English names, e.g., *Thatcher* /θatʃɛʁ, tatʃɛʁ/. Apart from some exceptions (*grill > gril*; *elf > elfe*; *packet-boat > paquebot*), Anglicisms mostly retain their original spelling.

3.2   *German*

German is a West Germanic language with 16 monophthongs (/iː y: u: ɪ ʏ ʊ e: ø: o: ə ɛ ɛ: œ ɔ a a:/), three phonological diphthongs (/aɪ̯ ɔy̯ aʊ̯/), and 21 consonants (/p b t d k g m n ŋ f v s z ʃ ʒ ç x h r j l/; cf. Mangold, 2005). The /r/ phoneme undergoes vocalisation in some contexts (e.g., *besser* /ˈbɛsr/ [ˈbɛsɐ] 'better'), and yields phonetic diphthongs postvocalically (e.g., *Ohr* /ˈoːr/ [ˈo͡ːɐ] 'ear'). For practical purposes, I keep the vocalic symbol in such positions. Literature on German phonology (Kohler, 1999) mostly acknowledges full phonemic status to only one phoneme of foreign origin (/ʒ/ as in *Garage* /gaˈraːʒə/), while lexicographic works adopt a more open stance (see below). Stress in German is free; in native words, it is usually placed on the first syllable of the root.

The phonology of Anglicisms in German has been studied from several perspectives. Fink (1980) presents an empirical investigation of a sample of Anglicisms (pronounced by 184 respondents) mostly from the second half of the 20th century. Apart from phonological approximation and spelling pronunciation, he identifies a strong tendency to imitate the original English phonetic form, especially among young respondents. Muhvić-Dimanovski (1982) puts forward the same three primary principles, with phonological approximation being presented as the strongest. Busse (2005) analyses the transcription of Anglicisms in dictionaries and describes the tendencies underlying the adaptation of individual phonemes. He shows that the import of foreign sounds is accepted as a part of standard pronunciation, as the transcriptions found in the dictionaries include German, English and mixed phonological forms. Lange (2015) focuses on the pronunciation of English proper names.

The *Duden-Aussprachewörterbuch* (Mangold, 2005) includes in the list of German sounds several elements of French origin ([ã, ã:, ɛ̃, ɛ̃:, õ, õ:, œ̃, œ̃:, y̆, ʒ]) and one of English origin ([ʤ]). A separate list of sounds to be used in "foreign pronunciation" includes all symbols used in British English except for those which also occur in German. The *Duden – Deutsches Universalwörterbuch* (2007) has a comparable approach, but contains a shorter list of English sounds to be used in foreign pronunciation ([ɑ:, æ, ʌ, ð, θ, w]). While the *Duden-Aussprachewörterbuch* gives mostly "germanised" (*eingedeutscht*, i.e., applying the principle of phonological approximation) pronunciation for borrowings, the original pronunciation is listed for most proper names. The *Duden – Deutsches*

Universalwörterbuch, despite its wider target group, goes even further, and acknowledges original English pronunciation in a significant number of borrowings, either as the only variant (*Franchising* /ˈfrɛntʃaɪzɪŋ/, *Playback* /ˈpleɪbæk/), or as an alternative to nativised pronunciation (*Slogan* /ˈsloːgn, ˈsloʊɡən/). An informal observation of German-speaking media provides further evidence of the tolerance of German to phonological import. Orthographic adaptation of Anglicisms is not frequent (*dog* > *Dogge*; *mop* > *Mopp*).

3.3 *Czech*

Czech is a Western Slavonic language with approximately 11 million speakers. It is closely related to Slovak and is the only official language of the Czech Republic as well as one of the official languages of the European Union. It has highly inflected morphology and relatively free word order. Most of its lexicon is of Slavonic origin, with peripheral layers of words of German, Latin, Greek, and, more recently, French and English origin. The Czech phonemic system comprises five short vowels (/ɪ ɛ a o u/), five long vowels (/iː ɛː aː oː uː/), three diphthongs (/ɛ͡u a͡u o͡u/) and 25 consonants (/p t c k b d ɟ g f s ʃ x v z ʒ ɦ ts tʃ m n ɲ l j r r̝/; cf. Dankovičová, 1999). Several of these phonemes are of foreign origin, but are nowadays well integrated: /f/ as in *film* 'film', /g/ as in *garáž* 'garage', /dʒ/ as in *jazz* 'jazz', /oː/ as in *kód* 'code', /a͡u/ as in *auto* 'car', /ɛ͡u/ as in *euro* 'Euro'. Phonetically speaking, none of these elements is entirely foreign, as they exist either as contextual variants of native phonemes (*krev* [ˈkrɛf] 'blood', *kdo* [ˈgdo] 'who', *léčba* [ˈlɛːdʒba] 'treatment'), or can be easily derived from them ([oː] < [o], [a͡u] < [a + u], [ɛ͡u] < [ɛ + u]). Stress is placed on word-initial syllables.

As far as the adaptation of Anglicisms is concerned, although several works are based on the observation of actual language use, the literature is predominantly prescriptive (Romportl, 1978; Hůrková, 1995). Descriptive approaches include Kučera and Zeman's analysis of proper names of English origin (Kučera and Zeman, 1998) and a recent empirical investigation into the pronunciation of loanwords (Duběda, 2016a), in which 300 native speakers of Czech participated. A phonological analysis of Anglicisms in Czech, based on dictionary data, is proposed in Bičan et al. (2020). All sources indicate that Czech is a language which favours phonological approximation and, to a lesser extent, spelling pronunciation. Original pronunciation is considered unusual in everyday communication (Hůrková, 1995), but does occur in proper names and citations used in intellectual contexts (ibid.), and, perhaps, in informal communication on topics such as pop culture or modern life.

Major dictionaries (*Slovník spisovného jazyka českého*; *Slovník současné češtiny*; *Nový akademický slovník cizích slov*) are unanimous in transcribing

borrowings with Czech phonemes only. Czech spelling is strongly phonological, and language users normally expect a regular mapping between the spoken and the written form. This expectation is mostly not satisfied with loanwords that have retained their original spelling. As a consequence, many loanwords, including Anglicisms, have been orthographically adapted (*sweater > svetr, tramway > tramvaj*) or have alternative spelling (*jazz > jazz/džez, handicap > handicap/hendikep*). Well integrated words are more likely to undergo adaptation than newer and less frequent words (Romportl, 1978).

4   Aim and Hypotheses

The goal of my investigation is to compare the degree of phonological permeability/resistance with respect to Anglicisms in French (FR), German (DE) and Czech (CS). Each of these languages represents one of the three major branches of Indo-European languages spoken in Europe (Romance, Germanic and Slavonic). Following the discussion presented in the previous section, I intend to quantitatively verify the following hypotheses:

1) Phonological approximation is more straightforward in German than in the other two languages, given the typological proximity between German and English. It is likely that the replacement of foreign phonological forms by domestic forms requires less phonetic, phonological and phonotactic manipulation when the languages are phonologically similar;

2) The principle of phonological approximation prevails in all three languages and can be considered the default principle of loanword adaptation in each of them. Irrespective of the degree of manipulation required for phonological approximation, this principle is considered dominant in the specialist literature;

3) French favours spelling pronunciation more than the other two languages. Although the spelling principle is observed in all three target languages, it appears – from an informal inspection of adapted forms – that spelling-based adaptation is more common in French than in the other studied languages;

4) German is more tolerant towards original pronunciation than the other two languages. From informal observation of language use and from the analysis of lexicographic sources it seems that German is more permeable to phonological import than French or Czech.

The study does not target conscious attitudes of individual speakers or groups of speakers; its focus is on the phonological systems relevant for loanwords. More specifically, it reflects one specific pronunciation register: standard speech.

5   Data

The analysed sample is based on the wordlist published in the *Dictionary of European Anglicisms* (Görlach, 2001), which contains approximately 3,500 entries. Roughly a quarter of these entries are provided with more detailed information on the word's history, as well as a diagram of the languages where it is attested. I used these 852 entries, all of them corresponding to frequent and widely attested Anglicisms, as the starting point of the analysis.

The target phonological forms were retrieved from the following authoritative dictionaries:

– FR: *Dictionnaire de la prononciation française dans sa norme actuelle* (Warnant, 1987) [A Normative Dictionary of Contemporary French Pronunciation].
– DE: *Duden. Das Aussprachewörterbuch* (Mangold, 2005) [Duden. The Pronunciation Dictionary].
– CS: *Nový akademický slovník cizích slov* (2014) [New Academic Dictionary of Loanwords].

The 1987 edition of Warnant's dictionary is the most up-to-date French pronunciation dictionary. I checked its appropriateness by comparing the retrieved phonological forms informally with a recent edition of the *Petit Robert* (2012) and found out that the transcriptions given in Warnant are not dated and are sufficiently reliable. In the preface, the author states that the data reflect both "scientific knowledge in the domain of phonetics and linguistics" and a "long and careful observation of facts" (Warnant, 1987: xiii). The dictionary, though published in Belgium, is based on the standard pronunciation of the Paris region (Ibid.: xx) and, more specifically, on the pronunciation of "educated people" (Ibid.: xxi).

For German, the *Duden Aussprachewörterbuch* is a modern and widely acknowledged work, containing "standard pronunciation[s]" and "reflecting the development of the language" (Mangold, 2005: 5). The authors explicitly state that they focus specifically on the "germanised" way of pronunciation, while acknowledging that "foreign-language" pronunciation is an option, especially for proper names (Ibid.: 5). However, as I pointed out above, this position is not

shared by the editors of all German dictionaries. For this reason, I also consulted the *Duden – Universalwörterbuch* (2007), which shows a much more open attitude in this respect than the *Ausprachewörterbuch*. I did not record the exact phonetic treatment of the entries in the *Universalwörterbuch*, but marked only those words for which the dictionary suggests non-adapted English pronunciation. This approach provides a more realistic view of the phenomena studied.

For Czech, the only available pronunciation dictionary (Romportl, 1978) did not meet my needs, as it is dated and does not reflect many recent Anglicisms that entered the language after the fall of the Iron Curtain in 1989 (Štěpánová, 2013). Therefore, I decided to use the *Nový akademický slovník cizích slov*, a modern comprehensive dictionary of loanwords. With regard to the choice of pronunciation forms, the authors rely on the rules and principles defined in Romportl (1978), complemented by "systematic research into trends of standard pronunciation" (NASCS, 2014: 8). The suggested transcriptions are based on the "usage of speakers of standard Czech […] provided that the word is part of their active lexicon" (Ibid.: 8).

The search returned 382 entries for French, 690 for German, and 518 for Czech. Out of the 852 initial entries, 245 were attested in all three dictionaries, 319 in two of them, and 217 in one of them. 71 entries were not attested in any of the three dictionaries. These numbers reflect each language's propensity for Anglicisms, as well as the size and the age of the dictionary used.

Next, each entry attested in at least one target language was provided with English pronunciation obtained from the *Cambridge English Pronouncing Dictionary* (Jones et al., 2011). Only British pronunciation forms were recorded, but differences in American pronunciation were considered in the analysis (see below). The transcriptions collected for English, French and German were IPA-based. The *Nový akademický slovník cizích slov* gives pronunciation in simplified Czech phonetic transcription, and only in cases where it cannot be easily derived from spelling. I therefore converted the transcriptions to IPA, and added missing transcriptions. In French, I replaced the symbols [ɔ̃ ʀ] by the symbols [õ ʁ], which are nowadays considered more standard (Fougeron and Smith, 1999). In German and Czech, I provided diphthongs with a ligature ([a͡u, o͡u, ͡ɔy, œ͡ːɐ] etc.) to distinguish them from two-syllable vowel sequences. Details that have no phonological relevance were left out (see Section 3).

The phonological forms were then classified according to the primary principle that underlies their adaptation. The labels used are summarised in Table 1.

TABLE 1   Labels used for the classification of entries according to primary adaptation
principles

APPROX	phonological approximation	FR *feed-back* /fidbak/
SPELL	spelling pronunciation	FR *label* /labɛl/
ORIG	original pronunciation	DE *Challenger* /ˈʧælɪnʤə/
APPROX=SPELL	phonological form that can be explained simultaneously by phonological approximation and spelling pronunciation	CS *drift* /drɪft/
APPROX+SPELL	combination of two principles	FR *boy-scout* /bɔjskut/
APPROX+ORIG	within the same entry	DE *Big Brother* /ˈbɪkˈbraðɐ/
APPROX/SPELL	two competing variants	FR *pipeline* /piplin, pajplajn/
APPROX/ORIG		DE *Display* /dɪsˈpleː, dɪsˈpleɪ/

Each entry received one label describing the primary adaptation principle(s). Where applicable, I also marked secondary adaptation principles, using the labels ANAL for various kinds of analogies (DE: *Cherrybrandy* /ˈʧɛriˈbrɛndi, ˈʃɛriˈbrɛndi/, where the latter pronunciation form is probably the result of contamination by the word *Sherry*), and the label ANOM for cases that deviate from normal adaptation processes (FR: *dispatcher* /dispaʧœʁ, dispaʃɛʁ/, where the latter variant exhibits an unusual adaptation /ʧ/ > /ʃ/, not explainable by spelling). The examples in Table 2 illustrate the structure and the annotation of the sample.

TABLE 2   Annotation examples

Source form	Target forms	Adaptation principles
feed-back /ˈfiːdbæk/	FR *feedback* /fidbak/	APPR
	DE *Feedback* /ˈfiːtbɛk/	APPR
	CS *feedback* /fiːdbɛk/	APPR
champion /ˈʧæmpiən/	FR *champion* /ʃãpjõ/	SPELL
	DE *Champion* /ˈʧɛmpiən/	APPR
	CS *šampion* /ʃampɪjon/	APPR+SPELL, ANAL (possibly influence of French)

TABLE 2   Annotation examples (*cont.*)

Source form	Target forms	Adaptation principles
star /ˈstɑː/	FR *star* /staʁ/	APPR=SPELL
	DE *Star* /ˈstɑ̃ːɐ, ˈʃtɑ̃ːɐ/	APPR/SPELL
	CS *star* /staːr/	APPR

It is obvious that the phonological forms listed in dictionaries reflect only part of the phonological reality, as borrowings tend to be phonologically more variable than native words (Retman, 1978; Duběda, 2016a). However, we can reasonably argue that the forms captured by dictionaries are not virtual but correspond to at least one representative pronunciation style – the style used by educated people in formal situations – and reflect typical processes of loanword adaptation. For this reason, they are a sufficiently reliable source for the purposes of a cross-linguistic study whose primary goal is not to describe sociolinguistic variability, but to compare phonological systems. Indeed, the use of standard pronunciation is a common approach in phonological typology (Maddieson, 1984) and often the only possible approach for practical reasons.

6   The Relative Weight of the Adaptation Principles

The data confirm the prominence of phonological approximation (APPROX). As we see in the charts, phonological approximation is clearly the most common principle in all three languages, accounting for more than a third of the entries in French and for almost two thirds in German and Czech (40%, 65% and 59%, respectively). Hypothesis 2 is therefore confirmed. Figure 2 shows

FIGURE 2   Relative weight of the adaptation principles in the sample. Total numbers of lexical units analysed: FR: N = 382; DE: N = 690; CS: N = 518

the relative weight of all three primary adaptation principles, as found in the sample. For the labels, cf. Table 1.

Spelling pronunciation in its pure form (SPELL) is active in 20% of the French entries, 14% of the Czech entries, and 4% of the German entries. The remaining part of the sample corresponds almost exclusively to items in which both aforementioned principles are observed in combination with each other. Three cases are attested: APPROX=SPELL ("phonologically robust" items in which phonological approximation yields the same results as spelling pronunciation; FR: 18%, DE: 12%, CS: 14%), APPROX+SPELL (phonologically hybrid loanwords; FR: 8%, DE: 3%, CS: 8%) and APPROX/SPELL (parallel adaptation; FR: 14%, DE: 13%, CS: 4%). Finally, a negligible number of German entries received the labels APPROX+ORIG (3), APPROX/ORIG (1) and ORIG (7). For examples, see Table 1.

As can be seen from the three charts above, the system of loanword adaptation in French, German and Czech can be reduced to two primary principles, which act either alone, or in synergy. The comparative importance of these principles is summarised in Table 3.

German tends to favour phonological approximation more than the other two languages, while spelling pronunciation is observed especially in French. Czech has an intermediate position. Hypothesis 3 is thus not refuted, but the difference seems to be gradual. The quantitative contrast between spelling pronunciation alone and all remaining principles taken together is statistically significant for any of the three language pairs (χ^2, p<0.001). This also holds when we contrast spelling pronunciation alone or in combination against all remaining principles.

In Section 5, I pointed out that German dictionaries reflect tolerance towards foreign phonological forms to a variable degree. The *Duden-Aussprachewörterbuch*, used as the primary source, mostly recommends nativised forms (cf. the tiny number of items with a label containing "ORIG"), while the *Duden – Deutsches Universalwörterbuch* gives original pronunciation for a

TABLE 3   Comparative importance of adaptation principles

Adaptation principle(s)	Relative weight
phonological approximation alone	DE > CS > FR
phonological approximation alone or in combination	DE > CS > FR
spelling pronunciation alone	FR > CS > DE
spelling pronunciation alone or in combination	FR > CS > DE

substantial number of entries. After looking up the 690 German entries from the sample in this dictionary, I found out that 15% of them are not included, 51% are given with nativised pronunciation, 27% with original pronunciation, and 7% with both nativised and original pronunciation. These figures would change the chart in Figure 2 dramatically, increasing the segments ORIG and APPROX/ORIG, and reducing especially the segment APPROX (the proportion of entries affected by original pronunciation in German would be significantly higher than in the other two languages: χ^2, p<0.001). The acceptance of original pronunciation in standard German dictionaries is variable and depends on the strategy of the authors. This situation contrasts sharply with the other two languages, for which standard dictionaries do not reflect original pronunciation. This observation, taken together with the data from Figure 2, allows us to confirm Hypothesis 4.

As for the secondary principles, I identified a limited number of entries in which the adaptation is influenced by analogy (FR: 16; DE: 22; CS: 42). In French and Czech, most of these cases are analogies with other words existing in the target language, which favour spelling pronunciation (FR: *non-sense* /nõsãs/; CS: *reality show* /rɛalɪtɪ ʃoʊ̯/). In German, this category mostly includes analogies with French pronunciation rules (*Lunch* /ˈlanʃ, ˈlantʃ/). Finally, a certain number of anomalous adaptations were identified (FR: 12; DE: 5; CS: 12). For examples, see Section 5.

7   Phonological Approximation

Phonological approximation was defined above as a conventional projection of the source phonological system onto the target system. In this section, I resume and comment on the rules of phonological approximation identified in the sample. Although a detailed analysis of the second major adaptation principle – spelling pronunciation – is also possible, it would be of little interest, because the rules that govern this type of phonological conversion are identical to those that apply to native words and can be found in most pronunciation guides and phonetics textbooks. The same holds for the remaining primary principle – original pronunciation – which does not involve adaptation.

7.1   *Monophthongs*
The system of monophthongs (Table 4) is reshaped according to the phonological contrasts available in each target language, with several mergers of perceptually adjacent phonemes and a few context-sensitive mappings. Unlike German and Czech, French has no vowel length contrast, which results in a particularly high number of phonemic fusions (12 English phonemes are

TABLE 4   Approximation of monophthongs in the sample.

EN			FR			DE			CS		
iː		uː	i		u	iː		uː	iː		uː
ɪ		ʊ				ɪ		ʊ	ɪ		u
e	ə 3ː	ɔː	e/ɛ	œ	o/ɔ	ɐ/ə/S	øː	oː	ɛ/S	ɛː oː	
	ʌ	ɒ			ɔ	ɛ	a	ɔ	ɛ	a	o
æ		ɑː		a				aː			aː

/S/ stands for a syllabic sonorant

mapped to eight French phonemes). Vowel lengthening in this language is contextual: all vowels are lengthened before word-final lengthening consonants (*dealer* [diˈlœːʁ]), and some vowels are lengthened in word-final closed syllables (*hall* [oːl]).

The adaptation of /i: u: ɪ ʊ ɜ: ʌ ɒ/ is straightforward in all three languages. Moreover, English /e/ is rendered in French either as /ɛ/ (in all closed syllables and in many open syllables, e.g., *week-end* /wikɛnd/, *pressing* /pʁɛsiŋ/) or as /e/ (in some open syllables, e.g., *penalty* /penalti/). However, since the contrast /e–ɛ/ in unstressed syllables is more or less neutralised in native words (Léon, 1992), it is reasonable to classify the choice /e–ɛ/ in Anglicisms as a case of free variation, with /ɛ/ clearly prevailing (out of the 34 relevant entries, 29 contain /ɛ/, three /e/ and two either /ɛ/ or /e/). In stressed open syllables, French /e–ɛ/ do contrast, but this contrast is not relevant for Anglicisms, as no English /e/s occur in final open syllables.

English /æ/ merges with /a/ in French (this fusion is conditioned by a rather front articulation of French /a/), and with /ɛ/ in German and Czech (*gag*: FR /gag/, DE /ˈgɛk/, CS /gɛk/). English /ɔː/ is mapped to French /ɔ/ (20 cases out of 23) or, marginally, /o/ (3 cases). About a half of the occurrences are in closed syllables before a restituted rhotic (13 cases), where the only phonotactically acceptable option is /ɔʁ/ (*score* /skɔʁ/, *forcing* /fɔʁsiŋ/). Outside the rhotic context, both /ɔ/ and /o/ are attested (*walkman* /wɔkman/, *basketball* /baskɛtbol/). In German and Czech, /ɔː/ yields the corresponding long vowel (DE: *Walkman* /ˈvoːkmɛn/, *Score* /ˈskôʁ/; CS: *talkshow* /toːkʃôu̯/, *snowboard* /snôu̯boːrt/).

In German and Czech, the long vowels /ɜː ɔ ɑː/ in rhotic contexts tend to be shortened in some words (DE: 26 cases out of 49, e.g., *girl* /ˈgôːʁl, ˈgœrl/, *Popcorn* /ˈpɔpkɔrn/, *cartoon* /karˈtuːn/; CS: 26 cases out of 41, e.g., *return* /rɪtɛrn/, *popcorn* /popkorn/, *bodyguard* /bodɪgaːrt, bodɪgart/). Such vowel shortenings

were labelled as spelling pronunciation, although the alternative solution –
accepting short vowels as regular counterparts of /ɜː ɔː ɑː/ within the limits of
phonological approximation – would have also been viable.

The treatment of /ə/ is context-sensitive and fairly complex. In French,
there is a /ə/ phoneme, but its distribution is limited to unstressed syllables. In
most words in the sample (78 cases out of 79, excluding entries with spelling
pronunciation), /ə/ occurs in a word-final syllable (*fashion, leader, poster*),
which receives stress when the word is adapted to French. Therefore, /ə/ is not
an acceptable candidate. Instead, French uses /œ/, which is acoustically close
to /ə/ (all the more so because French /ə/ is slightly rounded). In potentially
rhotic contexts, which prevail in the sample (61 cases), the rhotic consonant is
systematically restituted. This combination of phonotactic constraints then
leads to the projection /ə^r/ > /œʁ/ (*leader* /lidœʁ/, *thriller* /tʁilœʁ/). A potential
/ə/ before a sonorant (17 cases) is adapted to [œ], or, more rarely, omitted or
swapped with the sonorant (*Scrabble* /skʁabœl, skʁabl, skʁablə/).

In English, /ə/ elision triggers the sonorant's syllabicity; this is never the case
in French, which does not tolerate syllabic consonants. Only in one word is
unstressed /ə/ rendered as /ə/ (*barbecue* /baʁbəkju, baʁbəky/). German has an
/ə/ phoneme, but substitutes English /ə/ in rhotic contexts (137 cases out of
195, excluding entries with spelling pronunciation or original pronunciation)
with a slightly more open vowel /ɐ/ (*Dealer* /ˈdiːlɐ/, *Paperback* /ˈpeːpɐbɛk/), as
it is the rule in native words. A potential /ə/ before a sonorant (39 cases) is
omitted, and the sonorant becomes syllabic (*Scrabble* /ˈskrɛbl/, *Slogan*
/ˈsloːgn/). Only in two entries with the sequence /m(ə)n/ (*Backgammon* and
Common Sense) does the dictionary keep an /ə/. In other contexts (19 cases),
/ə/ is maintained (e.g., *Catering* /ˈkeːtərɪŋ/). In Czech, there is no /ə/ phoneme.
A potentially rhotic /ə^r/ (83 cases out of 123, excluding entries with spelling
pronunciation) is adapted either as a syllabic /r/ (*svetr* /svɛtr/), or as /ɛr/
(*dispečer* /dɪspɛtʃɛr/). For some entries, both variants are given (*cracker* > *krekr*/
kreker /krɛkr, krɛkɛr/). The choice of the variant seems to be fortuitous, with
the former being more frequent than the latter (/r/: 55 entries; /ɛr/: 23 entries;
/r/ or /ɛr/: 5 entries). A potential /ə/ before a sonorant (28 cases) is omitted
(*fashion* /fɛʃn/, *scrabble* /skrɛbl/), except for the sequence /m(ə)n/, where it is
adapted to /ɛ/ (*gentleman* /dʒɛntlmɛn/). In all other contexts (12 cases), /ə/ is
replaced by /ɛ/ (*science fiction* /sajɛns fɪkʃn/, *catering/ketering* /kɛtɛrɪŋk/).

7.2   *Diphthongs*
The phonological approximation of diphthongs is displayed in Table 5. The
treatment of closing (i.e., non-rhotic) diphthongs can be generalised by means
of a set of three rules of preference:

1. diphthong if available, else
2. sequence of vowel and semi-vowel if phonotactically acceptable, else
3. monophthong.

TABLE 5   Approximation of diphthongs in the sample.

EN	FR	DE	CS
eɪ ɔɪ aɪ	ɛ (ɔj) aj	eː ɔ͜y a͜i	ɛj ɔj aj
əʊ aʊ	o aw	oː a͜u	o͡u a͡u
ɪə eə ʊə	(iʁ) (ɛʁ) –	(iːr/i͡ːɐ) (ɛːr/ɛ͡ːɐ) –	(ir/iːr) (ɛr/ɛːr) –

Correspondences based on a small number of observations are in brackets. The /ʊə/ diphthong
is not attested in the sample

In French, which is a language without diphthongs, constraint (1) is skipped.
All diphthongs but two are thus rendered as V + /j/ or /w/ sequences (*boy-scout*
/bɔjskut/, *copyright* /kɔpiʁajt/, *black-out* /blakawt/). The diphthongs /eɪ əʊ/ are
monophthongised into /ɛ o/ (*fair play* /fɛʁplɛ/, *cashflow* /kaʃflo/). In the latter
of the two, this change is inevitable since the hypothetical counterparts */əw,
ow, ɔw/ are phonotactically impossible. The sequence /ɛj/ occurs in native
words (*sommeil, je payerai*), but is avoided as a counterpart of /eɪ/, possibly for
the sake of symmetry, since /eɪ/ and /əʊ/ are the two English diphthongs with
the smallest articulatory trajectory, which also undergo monophthongisation
in some accents of English, including American (Ladefoged, 1999). In German,
constraint (2) is skipped because V + semivowel sequences are not tolerated.
All diphthongs but two are mapped to similar German diphthongs (*boiler*
/ˈbɔ͜ylɐ/, *Halftime* /ˈhaːfta͜im/, *Scout* /ˈska͜ut/). The diphthongs /eɪ əʊ/ – the
same as in French – are monophthongised and additionally lengthened (*fair
play* /ˈfɛ͡ːɐˈpleː/, *cashflow* /ˈkɛʃfloː/). In Czech, constraint (3) is skipped. The
ʊ-diphthongs are mapped to available equivalents (*landrover* /lɛndro͡uvr/,
soundtrack /sa͡unttrɛk/), and the ɪ-diphthongs are replaced with V + /j/ se-
quences (*paperback* /pɛjprbɛk/, *spoiler* /spojlɛr/, *ragtime* /rɛktajm/).

    The centering (i.e., potentially rhotic) diphthongs /ɪə eə ʊə/ have a very lim-
ited frequency in the sample, and one of them (/ʊə/) is missing altogether.
Despite these fragmentary data, we can generally describe the approxima-
tion of these diphthongs as a monophthongisation with r-restitution (FR:
engineering /ɛndʒiniʁiŋ, indʒiniʁiŋ/, DE: *Engineering* /ɛndʒiˈniːrɪŋ/, CS: *en-
gineering* /ɛndʒɪniːrɪŋk/). In German, the rhotic takes the vocalised form /ɐ/
syllable-finally (*Pier* /ˈpi͡ːɐ/). Vowels are always lengthened in German and
sometimes in Czech (7 cases out of 10).

7.3   *Consonants*

Table 6 shows the rules of phonological approximation for English consonants. The r-restitution in French and Czech could be interpreted as a case of spelling pronunciation. However, I decided to classify it as phonological approximation for two reasons: first, the /r/ is pronounced in rhotic accents of English, and second, an underlying /r/ may appear in surface even in non-rhotic accents (*star – starring, for – for instance*). In Czech, [ŋ] is an allophone of /n/ occurring only before /k, g/. This constraint is active also in Anglicisms, where a velar plosive is always restituted if it is not present in the source phonological form. Its voicing is determined by spelling and the rule of word-final devoicing (*drink* /drɪŋk/, *bowling* /bōulɪŋk/, singl/single /sɪŋgl/).

TABLE 6   Approximation of consonants in the sample.

EN	FR	DE	CS
p b t d k g ʧ ʤ m n f v z ʃ r j l	no change except for cases below		
Word-final obstruents	no change	devoicing *gag* /ˈgɛk/	devoicing *gag* /gɛk/
Syllable-final obstruents	no change	devoicing *Badminton* /ˈbɛtmɪntn/	no change
Potential syllable-final /r/	restitution *shaker* /ʃɛkœʁ/	no restitution	restitution *šejkr* /ʃejkr/
θ ð	(t) –	(θ) (ð)	(t) (z)
s	no change	word-initial voicing before vowel *Single* /ˈzɪŋl/	no change
h	elision *hold-up* /ɔldœp/	no change	ɦ *hit* /ɦɪt/
ŋ	no change	no change	ŋk, ŋg *holding* /ɦōuldɪŋk/
w	no change	v *Sandwich* /ˈzɛntvɪʧ/	v *sendvič* /sɛndvɪʧ/

The /ʒ/ phoneme is not attested, and the phonemes /ð θ/ are represented by a very small number of entries. Different realisations of /r/ are not taken into consideration

7.4   *Prosody*

As far as word stress is concerned, French and Czech – fixed-stress languages – normalise its position (FR: *pull-over* /pylɔˈvɛʁ, pulɔˈvœʁ/, CS: *pulovr* /ˈpulovr/), while German – a free-stress language – maintains its original position (DE: *Pullover* /pʊ(l)ˈloːvɐ/). There are some exceptions to this rule (7 cases, e.g., *discount* /ˈdɪskaʊnt/ > DE: *Discount* /dɪsˈkaʊnt/).

7.5   *British vs. American English*

All the processes of phonological approximation that have been described above are considered from the perspective of standard British pronunciation. Additionally, I checked whether some of them would be better described with American English pronunciation forms, given the undeniable cultural role of this variety in today's world. I considered the following six systematic variations (Wells, 1982):

1.   Rhoticity: As has been said above, the r-restitution in French and Czech can be explained as a joint influence of spelling and the awareness of rhotic accents of English.

2.   /ɑː/ vs. /æ/ as in *casting* /ˈkɑːstɪŋ/ vs. /ˈkæstɪŋ/: No case of American-English-based adaptation was recorded in German or Czech. In French, this variation is irrelevant, as both phonemes lead to /a/.

3.   /ɒ/ vs. /ɑː/ as in *boxer* /ˈbɒksə/ vs. /ˈbɑːksɚ/: No case of US-English-based adaptation was recorded in any of the three languages.

4.   [əʊ] vs. [oʊ] as in *bowling* [ˈbəʊlɪŋ] vs. [ˈboʊlɪŋ]: All three corresponding forms (FR: /o/, DE: /oː/, CS: /ou̯/) are closer to the American variant.

5.   /j/ deletion as in *steward* /ˈstjuːəd/ vs. /ˈstuːɚd/: This variation is only documented by two items in German. The British model prevails.

6.   /t/ flapping and voicing as in *duty* [ˈdjuːti] vs. [ˈduːt̬i]: No case of American-English-based adaptation was recorded in any of the three languages.

In two of six cases (rhoticity and [əʊ] vs. [oʊ]) American English seems to be a better candidate for the source phonological form. However, rhoticity and the o-colouring of /əʊ/ are also present in spelling, correspond to historically older stages of language evolution (Minkova, 2014), and are shared by other accents of English. For these reasons, it would probably be an oversimplification to ascribe these preferences to the sole influence of American English.

7.6   *Permeability/Resistance in Phonological Approximation*

In Figure 1, I proposed a scale that demonstrates the degree of phonological permeability/resistance for each of the three primary adaptation principles. Phonological approximation, positioned in the centre of this scale, can itself be seen as a continuum between more or less permeable/resistant, according to the resemblance between the source system and its projection in the target language. When comparing the number of differences in each of the four domains under examination (monophthongs, diphthongs, consonants, stress), we arrive at the following simplified diagram (Figure 3). With regard to the amount of manipulation needed in phonological approximation, German seems to be slightly more permeable than Czech and significantly more permeable than French. Hypothesis 1 therefore holds only with respect to the relationship between German and French.
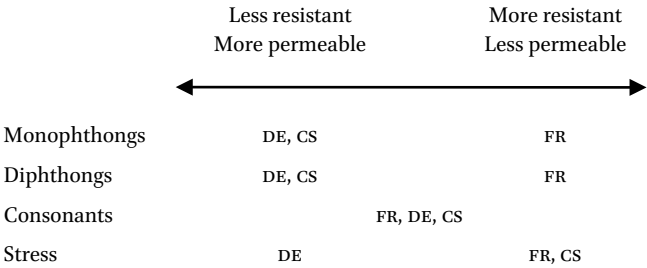
	Less resistant More permeable	More resistant Less permeable
Monophthongs	DE, CS	FR
Diphthongs	DE, CS	FR
Consonants	FR, DE, CS	
Stress	DE	FR, CS

FIGURE 3   Permeability/resistance in phonological approximation

8   Conclusion

The question of phonological permeability/resistance was decomposed into four hypotheses of which three were confirmed (Hypotheses 2, 3 and 4) and one was not (Hypothesis 1):

1.   With respect to the straightforwardness of phonological approximation, German, though closely related to English, does not differ from Czech significantly. The observed degree of phonological manipulation in German is higher than in French but roughly comparable to the degree of phonological manipulation in Czech (see Figure 3).

2.   The principle of phonological approximation prevails in all three languages and can be considered the default principle of loanword adaptation in each of them (see Figure 2).

3.   Spelling pronunciation is especially prevalent in French, but the difference is more gradual than categorial (DE < CS < FR; see Figure 2).

4. German is more tolerant towards original pronunciation than the other two languages (see Figure 2 and following text).

The partial conclusions made above are summarised in Figure 4.

The degree of permeability/resistance in phonological approximation is determined by the disposition of each language to accommodate foreign phonological input. Unsurprisingly, this disposition is particularly high in German, a language closely related to English. Some typological properties of Czech (namely vowel length contrast and syllabic consonants) allow for a rather smooth phonological projection as well. The projection onto the French phonemic system, on the other hand, is accompanied by a number of phonemic fusions and constraint-based modifications. Consequently, the phonological structure of many borrowings moves away from both their original English form and their spelling. It is perhaps for this reason that French favours spelling pronunciation, which is a way to ensure better recognisability.

The other conclusions can only be explained by system-external factors. The overall openness of a language towards Anglicisms (both diachronic and synchronic) increases the size of this lexical stratum, which may help stabilise the system of phonological approximation. Regular phonological approximation is also stimulated by the knowledge of English in the population. Finally, language institutions and dictionaries, whose position may be reflected by the media and the school system, also impact on pronunciation practice. Unlike Czech or French, German is particularly permeable to direct phonological transfer from English: this phenomenon has a social basis, but is probably enhanced by the proximity of both phonological systems.

The ranking of global phonological permeability with respect to Anglicisms can thus be defined as DE > CS >> FR, with Czech being closer to German than to French.
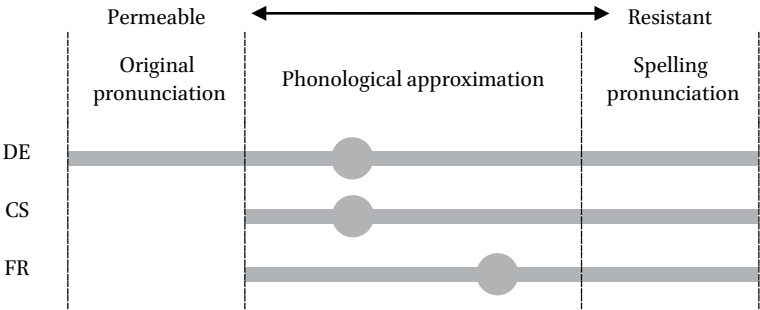

FIGURE 4   Overall typological scheme of adaptation processes.
The thick grey line delimits the part of the adaptation scale that is used by the language in question. Grey dots denote the dominant area within phonological approximation

Finally, it should be noted once again that the validity of the analysis is limited by the methodology used: the phonological forms are dictionary-based and do not therefore reflect the full phonological variability of the studied loanwords.

Acknowledgement

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