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## The impact of source languages on the stressing of loanwords in English

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### Abstract

This study suggests that the parameters accounting for the stressing of loanwords in English should be distinguished from those governing the rest of the English lexicon. This dictionary-based analysis shows that the stress characteristics of source languages are determining factors in the stressing of words of foreign origin in English. Throughout history, the massive influx of words from source languages stressed on the penultimate syllable might have led to a default stress pattern in English being used as a phonological marker to indicate the foreign origin of items. Even though stress preservation is the main parameter accounting for the stress patterns of English loanwords, there is evidence of an ongoing conflict in English between the preservation of the original stress pattern derived from source languages and the application of the default stress pattern instead.

### Résumé

Cette étude démontre que les paramètres permettant de rendre compte de l'accentuation des emprunts en anglais doivent être distingués de ceux qui régissent le reste du lexique. À partir de données extraites d'un dictionnaire anglais de prononciation, l'analyse montre que l'accentuation des langues sources constitue un critère déterminant dans la position de l'accent lexical dans les emprunts correspondants en anglais. L'afflux massif en anglais d'emprunts accentués sur la syllabe pénultième pourrait avoir généré au fil du temps une accentuation par défaut caractéristique des mots d'origine étrangère. Cette accentuation préférentielle sur la syllabe pénultième constituerait même un marqueur phonologique permettant d'identifier l'origine étrangère d'un item en anglais. Ainsi, même si la préservation de l'accentuation de la langue d'origine permet dans la majorité des cas de justifier la position de l'accent dans les emprunts en anglais, il y a un conflit manifeste entre la préservation de l'accentuation de la langue source et l'application par défaut de l'accentuation pénultième dans les mots d'origine étrangère.

**Key words:** English loanwords, lexical stress, source languages, dictionary data

**Mots-clés :** emprunts en anglais, accentuation lexicale, langues sources, dictionnaires de prononciation

### 0. Introduction<sup>1</sup>

Hammond [1999: 284] states that the rules governing the pronunciation of loanwords in English are not different from those applying to the rest of the lexicon:

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<sup>1</sup> I would like to thank Stephan Wilhelm and the two anonymous reviewers for their precious comments on this study.

*In some languages, borrowed words exhibit rather different phonological patterns from those of native words, but this does not appear to be the case in the stress system of English.*

The assumption according to which loanwords exhibit no specific prosodic features (especially in terms of stress assignment) is shared by many researchers. As a consequence, loanwords are often cited in reference works (Burzio [1994], Chomsky & Halle [1968]) to illustrate the regularity of English stress rules. If segmental parameters (among which syllable weight) are often used to account for the stressing of loanwords in English, little has been said about the impact of source languages on the pronunciation of loanwords in English.

Itô & Mester [1999] insist on the need to distinguish the mechanisms applying to the pronunciation of loanwords from those accounting for that of the rest of the lexicon. Although their study deals with Japanese, Dabouis & P. Fournier [2022] show that this hypothesis also stands for English. They posit that English is actually composed of subsystems and that words which belong to one specific subsystem share similar semantic, morphological, phonological, segmental and letter-to-sound characteristics which differ from the words from the other subsystems. Their model highlights the interaction between the different subsystems but also shows that the pronunciation of loanwords might also be influenced by the preservation of linguistic properties from source languages. These assumptions echo the positions developed in major works in Loan Phonology and according to which loanwords are introduced in English by bilingual speakers. This position is not shared by all researchers because some think that the speakers who introduce words from foreign languages are not bilingual. However, the probability that there is some interaction between the phonological parameters of source languages and the rules accounting for the pronunciation of loanwords in English is very high. Although there have been many studies concerning the pronunciation of words of English origin in other languages (Paradis & La Charité [2008] for French, Kubozono, Ito & Mester [2008] for Japanese or Kenstowicz [2007] for Fijian for example), few studies investigating the pronunciation of loanwords in English in relation with the phonological properties of source languages are attested in the literature.

In English, loanwords are usually stressed on the penultimate syllable (except French loanwords which are generally stressed on the final one) and this stress pattern is considered to be the default pattern in loanwords and a phonological indicator of the foreign origin of items (P. Fournier [2018]). However, no quantitative analysis has been carried out to determine if this assumption is true. So, this study first investigates the distribution of stress patterns in English loanwords<sup>2</sup> on a representative corpus compiled from the *Routledge* dictionary (Upton & Kretschmar [2017]). The overall results show that, even if loanwords are usually stressed on the penultimate syllable, the proportion of words stressed on the antepenultimate stress is significant. The results need to be refined as it is necessary to distinguish between the different source languages represented in the dictionary because words from specific source languages show regular stress patterns.

In order to determine the impact of the phonological properties of source languages on the stressing of loanwords in English, the location of the stressed syllable found in

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<sup>2</sup> This study deals with Standard British English, as described in the *Routledge* dictionary.

source languages has systematically been compared (whenever such information was available in the pronouncing dictionary) with the stress patterns attested in English loanwords. Even though the transmission of phonological properties from source languages to English proves out to be a determining factor in the stressing of loanwords (the efficiency of this parameter has yet to be tested among all the other determining parameters, however), the reproduction of the original stress pattern is not systematic and variation is strongly linked to the source languages. The examples below illustrate the different scenarios.

- (1) (a) '*Ostwald* from German ['ɔstvalt], '*Autobahn* from German ['autoba:n].  
 (b) '*semplice* from Italian ['semplitʃe], '*sgraf'fiti* from Italian [zgraf'fiti],  
*'pode'stâ* from Italian [pode'sta].
- (2) (a) '*Borodin* from Russian [bɔra'dʲin], '*Chelya'binsk* from Russian [tʃʲi'liabʲinsk],  
*Che'renkov* from Russian [tʃʲirʲin'kof].  
 (b) '*Guzmán* from Spanish [guθ'man, gus'man], '*Calderón* from Spanish  
 [kalde'ron], '*matador* from Spanish [mata'ðor].

If the original stress patterns of words of German and Italian origin are perfectly reproduced in English in (1a) and (1b) (even when the primary stress is located on the final or antepenultimate syllable), this does not apply, for instance, to words of Russian and Spanish origin, for which stress differences are attested in (2a) and (2b). That is why it is necessary to distinguish between the different source languages so that distinct behaviours can be identified.

Section 1 presents a review of the literature on the stressing of loanwords in English with an emphasis on the works related to Loan Phonology and the transmission of phonological properties from source languages to target languages. In Section 2, the corpus building process is detailed and the results concerning the distribution of stress patterns in British English are presented in Section 3. The results concerning the comparison between the stress patterns of source languages and those found in English are dealt with in Section 4 and are interpreted in Section 5 in the light of the determining theoretical parameters discussed in Section 1. A series of hypotheses are then formulated to account for whether the original stress pattern is preserved in English.

## 1. Theoretical background

### 1.1. The stressing of loanwords in English

Syllable weight has long been considered a major parameter to account for the stressing of the English lexicon, including loanwords, and is still found in reference works (cf. introduction), but its influence has notably been questioned in Church [1985] because it appears not to be adapted to account for the stressing of loanwords in English. Church notices that loanwords exhibit different stress patterns from the rest of the English lexicon in comparable weight conditions. Conceiving of stress as based on syllable weight also generates a circularity problem. Stress is said to be related to the weight of syllables which is mainly calculated thanks to vowel realization. According to this view, the pronunciation of vowels is a key factor in the determination of stress placement, which is highly controversial as the Guierrian School considers that stress assignment is better accounted

for by an interaction between morphological, syntactic and segmental parameters and that subsequently the pronunciation of vowels is determined by stress placement (Dabouis *et al.* [2023]).

Other studies suggest that the English phonological system is a hybrid and dynamic system made up of two conflicting principles. The first is the Romance principle which is inherited mainly from Latin and French through the process of borrowing. According to this principle, stress location is reckoned from the rightmost part of the word. The second one is the Germanic principle and its root-initial stress conception (J.-M. Fournier [2007], Minkova [2006]). According to J.-M. Fournier [2007], the English stress system relies on syntactic, morphological and segmental parameters and syllable weight alone cannot account for the location of primary stress. The views concerning the interaction between these parameters and the necessity to distinguish the pronunciation of loanwords from the rest of the lexicon are developed in Dabouis *et al.* [2023].

Relying on the arguments put forward by Lionel Guierre in response to the hypotheses presented in the *Sound Pattern of English* (Chomsky & Halle [1968]), the researchers from the Guierrian School have identified a regular orthographical and segmental pattern in loanwords which is consistent with penultimate stress patterns. This stress rule is known as the rule of “Italian” words (Guierre [1979: 544-550]), because of the considerable proportion of words of Italian origin whose stress pattern can be accounted for according to these parameters. Words of foreign origin with <-VCV#> patterns and whose segmental structure is as follows: an alveolar obstruent (i.e. /t, d, n, s, z/) with a pronounced final monographic vowel (i.e. <a, e, i, o, u> except <y>), are generally stressed on the penultimate. The examples in (3) illustrate this stress rule:

(3) *ar'mada*, *bi'kini*, *ki'mono*, *mar'tini*, *mo'squito*, *nir'vana*, *po'tato*, *tor'pedo*,  
*vol'cano*.

This stress rule is not based on etymology only and it is actually a combination of etymological factors and segmental characteristics. It is a restrictive pedagogical rule as it cannot account for the stressing of words with /l/ and /r/ consonants which are mainly stressed on the antepenultimate (examples: *'broccoli*, *'buffalo*, *'copula*, *'camera*, *'Figaro*). Furthermore, there are exceptions to this “Italian rule” in English loanwords (examples: *'domino*, *'stamina*, *'retina*, *'wapiti*).

## 1.2. The English subsystems

Dabouis & P. Fournier [2022] assume that the English lexicon is actually composed of several subsystems characterized by distinct graphophonological, semantic, morphological, phonological and segmental parameters: §Core (which is divided into §Core-Native and §Core-Latinate), §French, §Learned and §Foreign (based on Carney's [1994] representation of spelling-to-sound subsystems). It is necessary to distinguish the pronunciation of loanwords which belong to the §Foreign subsystem from that of the words from the other subsystems because they share linguistic properties. First, there are specific letter-to-sound correspondences for vowels and consonants. In Figure 1, the letter-to-sound vocalic correspondences referred to as foreign free vowels are only attested in loanwords.

Free vowel	Spelling	Foreign free vowel	Examples
/eɪ/	<a>	/ɑ:/	<i>armada, banana, tomato</i>
/i:/	<e>	/eɪ/	<i>cliché, peso, sake</i>
/aɪ/	<i>	/i:/	<i>ballerina, bikini, mosquito</i>

Figure 1: The main foreign free vowels (taken from J.-M. Fournier [2010: 113]).

There are also specific letter-to-sound correspondences for consonants. Some of these are illustrated in (4):

- (4) <c(c)> = /tʃ/ in *ciabatta, cello, concerto*.  
 <sch> = /ʃ/ in *schnaps, schwa*.  
 <z(z)> = /ts/ in *panzer, pizza*.

From the semantic point of view, loanwords often make direct references to foreign notions (examples: food, habits, tradition, leisure, clothing). These words usually exhibit <-VCV#> segmental structures (see examples in Figure 1), tend to be polysyllabic and are generally stressed on the penultimate syllable. It is necessary to distinguish the §Foreign subsystem from the §French one especially concerning stress assignment, as words of French origin generally appear to be stressed on the final syllable, especially in American English (Dabouis & P. Fournier [to appear]). This assumption concerning the existence of a penultimate preferential stress in loanwords echoes what Church said as early as 1985 concerning a “pseudo-foreign accent” typical of loanwords and used by English speakers to signal their foreign origin [1985: 252]:

*It is clear (...) that the stress of Italian loans is not dependent on the weight of the penultimate syllable (...) I believe that speakers of English adopt what I like to call a pseudo-foreign accent. That is, when speakers want to communicate that a word is non-native, they modify certain parameters of the English stress rules in simple ways that produce bizarre “foreign sounding” outputs.*

The English subsystems mentioned in Dabouis & P. Fournier [2022] interact constantly and their boundaries fluctuate, as is suggested by the overlapping representation of their theoretical models in Figure 2.

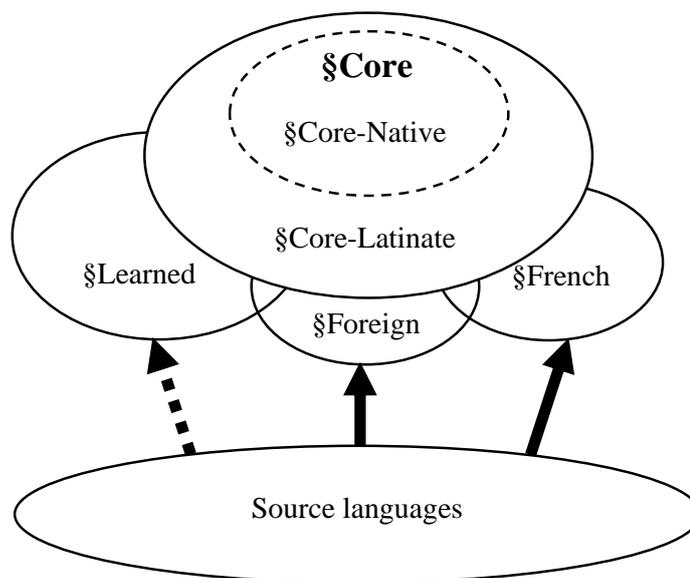


Figure 2: Representation of the English subsystems (Dabouis & P. Fournier [2022: 248]).

Even though they consider that English is an autonomous system, source languages have a direct influence on the three subsystems composed of items or elements of foreign origin. This representation testifies to the existence of a conflict between the principles of the English system which illustrate its autonomy and the influence of source languages on items of foreign origin. Therefore, the preferential penultimate stress pattern found in loanwords might be inherited from the prosodic characteristics of source languages because there is evidence in the literature of the direct influence of source languages on English (Descloux *et al.* [2011], P. Fournier [2021a] and [2021b]).

### 1.3. Loanword adaptation

The investigation of the phonological phenomena observed at the source language / target language interface during the borrowing process has led to the creation of the Loan Phonology theoretical framework. There have been more and more studies investigating the pronunciation of words of foreign origin over the last two decades. There are two scenarios which are put forward to account for the pronunciation of words of foreign origin. They are greatly summarized in the introductory section of Calabrese & Wetzels' book [2009: 1-3]. The 'nativization-through-production process' (or the phonological stance model) (Hyman [1970], Jacobs & Gussenhoven [2005], Paradis & LaCharité [2005]) posits that loanwords are introduced in target languages by bilingual speakers. The loanwords are mainly pronounced using the phonological principles of target languages. However, even if this view is massively shared, other researchers think that loanwords can also be realized with the oral mechanisms ruling the source languages since speakers are bilingual. The second position, called the 'nativization-through-perception process' (or the perceptual stance model) (Silverman [1992], Peperkamp & Dupoux [2008]), states that loanwords are borrowed from source languages by speakers who are not fluent in these languages. The pronunciation of loanwords is based on the

perception speakers have of the source language prosodic characteristics and is then reproduced with a variable degree of accuracy in the target language with a necessary phase of adjustments. Peperkamp [2004] shows that the pronunciation of words of foreign origin does not necessarily respect the phonological principles of target languages by using psycholinguistic evidence concerning the perception of non-native sound structures and the mechanisms which are “beyond the listener’s awareness”.

The literature on the realisation of segments is extensive but the prosodic adaptation of loanwords has received less attention. Studies on prosodic adaptation in loanwords are massively based on the assumption that loanwords infiltrate target languages through bilingual speakers. Bilingualism makes it possible to perceive stress in both languages and therefore to reproduce the original stress features in target languages (Kang [2010: 2308]):

*the closer the contact and the higher the level and rate of bilingualism, the more likely the adapters are to perceive stress contrasts of the input language correctly, in turn leading to the stronger possibility of the preservation of input stress.*

An experiment on English native speakers conducted by P. Fournier [2018] has shown that speakers have intuitions about the way words of Italian origin should be stressed. Whenever faced with words they feel to be of Italian origin, they tend to stress the penultimate syllable whatever the stress pattern of the Italian item may be. The stress match rate between the Italian items and the productions concerning penultimate or antepenultimate stress patterns rises with the proficiency of speakers in Italian. It confirms there is a direct link between the original stress patterns and the way English speakers pronounce words of foreign origin in English. These results echo the conclusions found in Fitt [1996] concerning the pronunciation of trisyllabic foreign city names by English adolescents in which the penultimate stress pattern is used predominantly.

Davis, Tsujimura & Tu [2012] have developed a three-parameter model of prosodic adaptation. The first parameter is the systematic comparison of prosodic features both in source and target languages as it appears that the preservation of the prosodic features from source languages is not systematic in loanwords. Some features may be better reproduced than others. The second parameter is based on the prosodic characteristics some target languages apply to loanwords. Some languages tend to use the same prosodic rules to account for the pronunciation of the whole lexicon while others use parameters which are specific to loanwords. Finally, syllable structure and segmental features are considered as potential determining parameters in the adaptation process.

The model created by Dabouis & P. Fournier [2022] shows that the §Foreign subsystem is a dynamic and hybrid one which relies both on the application of rules which are specific to loanwords in the English system and on the influence of source languages. Loanwords from Italian are a perfect example of stress preservation between source and target languages (P. Fournier [2018]) because there are hundreds of Italian loanwords in English and the study shows that there is an outstanding stress match between loanwords of Italian origin and Italian items (more than 95% concerning final, penultimate and antepenultimate Italian stress patterns). This preservation of the Italian stress pattern is assumed to be facilitated by the fact that both languages share similar prosodic features concerning the representation of stress. P. Fournier [2016] shows that the suprasegmental

features of English (stress-language) and Japanese (pitch-accent language) are so different that Japanese stressed syllables are not reproduced in English either in disyllabic or trisyllabic (and more) items. The stressing of Japanese loanwords in English is better accounted for by the application of the preferential stress pattern for loanwords (i.e. penultimate). Nonetheless, Broselow [2009] states that prosodic adaptation is generally required even though the two languages are stress-timed languages.

Therefore, the assumption that the preferential penultimate stress pattern which is applied whenever the reproduction of the original stress pattern is impossible needs to be investigated and tested on a large corpus of loanwords coming from different source languages. Are loanwords massively stressed on the penultimate syllable in English? If it turns out to be true, is this penultimate stress pattern inherited from source languages and is there a tendency in English to systematically preserve the stress pattern from source languages? Results have shown that stress preservation is attested in loanwords of Italian origin but impossible in loanwords of Japanese origin because of the prosodic differences between English and Japanese. What about other source languages?

## 2. Corpus building

In order to create a representative dataset of loanwords in English and to investigate the impact of source languages on the pronunciation of such items, the corpus used in this paper has been compiled from the *Routledge Dictionary of Pronunciation for Current English* 2<sup>nd</sup> edition (Upton & Kretschmar [2017]). This source is the most updated dictionary for current pronunciation of British and American English and it sometimes mentions the phonetic transcriptions of source languages when the items are loanwords. These transcriptions give access to the standard pronunciation of source languages and it is then possible to determine whether phonological properties of source languages are reproduced in English. When only one source language is mentioned, it can legitimately be concluded that the borrowing transfer is direct, that is to say without intermediate languages which might have influenced the realization of loanwords in English. These loanwords taken from English dictionaries are institutionalized entries, which means that it is necessary to distinguish those institutionalized entries from the foreign words used in code-switching (Myers-Scotton [1993]). Indeed, the code-switching process relies on individuals and has a stylistic dimension.

It is clear that the principles underlying the stress systems of source languages throughout the dictionary differ radically. However, whatever the phonetic materialization of stress across languages may be (i.e. intensity, duration, pitch or a combination of several parameters), the *Routledge* editors indicate the location of primary stress in source languages with the API symbol found in English as well (i.e. /'/). It is therefore possible to compare the location of stressed syllables in English as well as in source languages. French loanwords are not included in the dataset because French is categorized among the ‘languages with dominant final stress’ category (Hyman [1985]). French has a demarcative stress which falls on the last syllable of intonation units (Di Cristo & Hirst [1993]). The stressing of French loanwords has been extensively studied and it has been shown that these constitute a distinct sub-group within the English phonological system (J.-M. Fournier [2010]) with morphological, semantic, segmental but especially phonological characteristics (Dabouis & P. Fournier [2022]) which differ from loanwords from other languages (Dabouis & P. Fournier [to appear]).

Some loanwords have not been integrated into the final dataset. Monosyllabic loanwords have been excluded and loanwords with two languages of origin are not kept either as it is difficult to disentangle the influences from each possible source language. Entries which are doublets with spelling variations are not kept as it is clear that these minor differences do not affect the pronunciation in English (example: *Tadzhik* is not kept because *Tadjik* is already attested<sup>3</sup>), as well as masculine / feminine or singular / plural doublets (example: *sgraffito* is not kept because *sgraffiti* is already attested). Finally, certain entries may have different syllable counts in English and in source languages. The realization of vocalic sequences such as <i+V> is generally disyllabic in English but monosyllabic in source languages and especially in Italian because of synaeresis. Therefore, variability in the syllable count makes it impossible to compare the stress patterns in English and in source languages. That is why such entries as *siciliana* have been left out.

The final dataset is composed of 768 loanwords which come from 19 source languages. Table 1 compiles the different source languages mentioned in the *Routledge* dictionary as well as the number of items for each language.

Language	Items	Language	Items
Italian	214	Hungarian	12
Russian	166	Norwegian	10
Spanish	116	Polish	10
Welsh	73	Czech	9
German	44	Afrikaans	7
Danish	28	Portuguese	5
Swedish	21	Turkish	5
Dutch	18	Flemish	4
Irish	13	Albanian	1
Greek	12		

Table 1: Source languages mentioned in the *Routledge* dictionary along with the number of loanwords in the final dataset.

The results show that there are huge differences between donor languages concerning the number of borrowings transmitted to English. Thus, Italian, Russian and Spanish loanwords respectively represent 27.9%, 21.6% and 15.1% of the dataset (i.e. 64.6%). Some donor languages have only transmitted a few items (examples: Albanian, Flemish or Turkish). Determining the influence of source languages on the basis of such scant evidence is far from easy. That is why the analysis and the conclusions are to be dealt with carefully. Surprisingly, languages such as Arabic or Japanese which are good purveyors of loanwords in English are not present in the data. This does not mean that the *Routledge* editors deny the existence of English words coming from Arabic or Japanese, but simply that the foreign phonetic transcriptions are not mentioned for such words as *halal* or *karate*. The list of loanwords from each source language is available in the

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<sup>3</sup> When doublets are attested, the first of the two entries has been kept.

appendix along with the disyllabic and trisyllabic (and more) distinction<sup>4</sup>.

The next section deals with the stressing of loanwords of the dataset in British English.

### 3. The stressing of loanwords in British English

This section investigates the location of primary stress in loanwords in British English. According to the literature, loanwords coming from languages other than French are mainly stressed on the penultimate syllable (i.e. /(-)10/<sup>5</sup>). The distribution of the stress patterns found in British English is dealt with in 3.1 and it is necessary to distinguish the stress features attested in disyllabic loanwords from those attested in loanwords of three syllables or more.

#### 3.1. The stressing of loanwords in British English

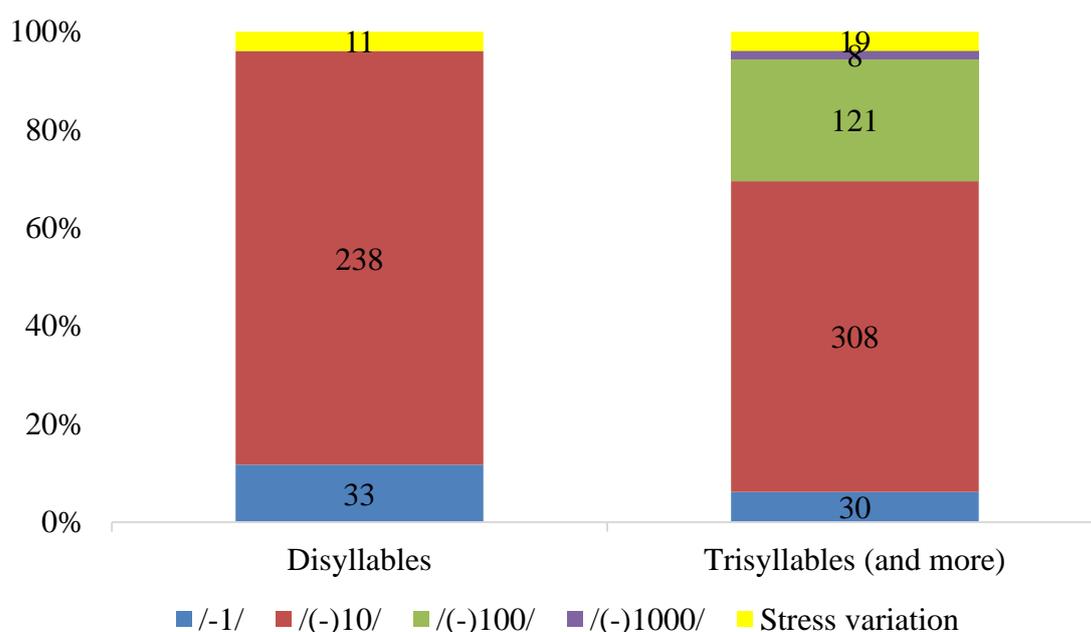


Figure 3: The stressing of loanwords in British English.

The results from Figure 3 show that disyllabic loanwords are generally stressed in /10/ in British English (84.4%) and that only 11.7% of them are stressed in /01/. The

<sup>4</sup> A substantial proportion of words in the dataset consists of proper nouns.

<sup>5</sup> /1/ stands for the syllable which carries primary stress and /0/ for an unstressed syllable. The (-) symbol stands for an undetermined number of syllables and the brackets signify that this is an optional feature. Therefore, this numerical representation brings together disyllabic loanwords and loanwords of three syllables or more as well.

proportion of /01/-/10/ variation is very low with only 3.9%. This is not surprising if we consider that final stress patterns in loanwords are mainly found in words of French origin which are excluded from the dataset. Some examples of final stress patterns (5a) and stress variation<sup>6</sup> (5b) are listed below:

- (5) (a) *Vermeer, Gábor, Sinn Fein, Cavour, Abkhaz, artel, Baikal, kolkhoz, pirog, Bilbao, La Paz, Ortiz.*  
 (b) *Loren, signor, Kazakh, Penrhyn, Baku, Kyrgyz, Sergei = /10/ or /01/.*

Concerning loanwords of three syllables (or more), penultimate stress is also dominant (63.4%) but the proportion of antepenultimate stress is significant (24.9%). Other stress patterns are less represented with only 6.2% of loanwords stressed in /-1/, 1.6% in /(-)1000/. Stress variation is not frequent because only 3.9% of loanwords are subject to it. Therefore, even if the penultimate stress pattern is dominant, almost one in four loanwords of three syllables (or more) is stressed on the antepenultimate syllable in English, and this feature cannot be ignored. The examples in (6) illustrate the final (6a) and the antepenultimate (6b) stress patterns found in English loanwords:

- (6) (a) *Kap Farvel, Budapest, Fianna Fáil, pietà, podesta, Astrakhan, Azerbaijan, Chelyabinsk, Tadjikistan, Turkestan, Aguilar, Tenerife, Nant-y-glo, Penybont.*  
 (b) *Krugerrand, Pietermaritzburg, Jespersen, Kattegat, Hannover, Königsberg, papabile, pianissimo, Amundsen, Aeroflot, Taganrog, tsarevich, Zapotec, Ericsson.*

However, it appears that words from specific source languages have stress characteristics that differ radically from those of loanwords from other source languages and this is particularly attested in words of three syllables (and more). For example, loanwords from Swedish in (7a) are stressed differently from those of Greek origin in (7b):

- (7) (a) *'Ericsson, 'Helsingfors, 'Lagerlöf, 'Norrköping, 'Swedenborg, 'Valdemar, 'Wallenberg, 'Uppsala<sup>7</sup>.*  
 (b) *bou 'zouki, Kó 'rinthos, sou 'vlaki, ta 'verna, tzat 'ziki.*

Loanwords from Swedish are stressed on the antepenultimate while loanwords from Greek are stressed on the penultimate. It means that source languages might have an influence on the stressing of loanwords in English and that the overall results from Figure 3 need to be refined as it seems essential to isolate the different languages of origin.

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<sup>6</sup> In the *Routledge* introduction [2017: x], it is said that: “The ordering of variant pronunciations does not imply that one form is more desirable or ‘correct’ than another”. Therefore, in this study, the ordering of stress variants is not mentioned as it is not meaningful.

<sup>7</sup> This item can also be stressed on the penultimate syllable.

Therefore, the penultimate stress pattern is usually attested in loanwords in English and it seems to confirm the hypothesis according to which this is the preferential stress pattern in loanwords, but words from specific source languages adopt distinct stress features. It is therefore necessary to distinguish between source languages.

### 3.2. The stressing of loanwords from major source languages

In order to determine whether loanwords from some source languages are associated with specific stress patterns which can even be distinct from penultimate stress, it is not necessary to study source languages with only few items as the results of such restricted sub-corpora would not be significant. Only the seven source languages with at least 20 items are analysed here (see Table 1): Italian, Russian, Spanish, Welsh, German, Danish and Swedish. First, the distribution of stress patterns in disyllabic loanwords will be considered in 3.2.1.

#### 3.2.1. The stressing of disyllabic loanwords

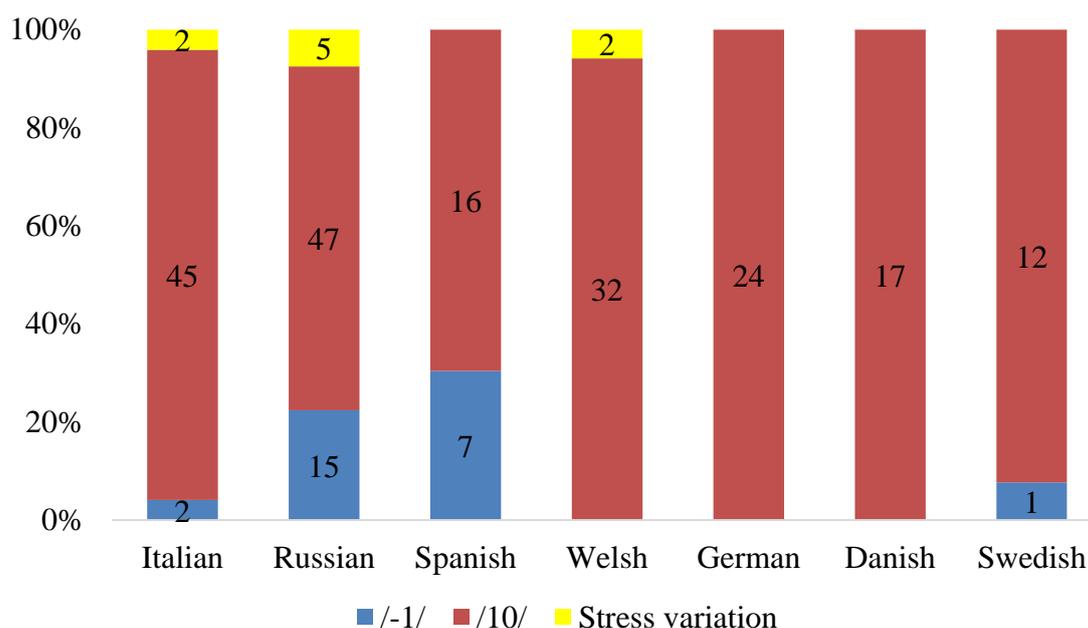


Figure 4: Distribution of stress patterns in disyllabic loanwords from major source languages.

The results from Figure 4 show that disyllabic loanwords coming from Italian, Welsh, German, Danish and Swedish are massively stressed in /10/. This is also the dominant stress pattern in loanwords coming from Russian and Spanish, but the proportion of final stress patterns is nonetheless significant with 22.4% and 30.5% respectively. Examples in (8) illustrate the regular behaviour of disyllabic loanwords coming from Italian (8a), Welsh (8b), German (8c), Danish (8d) and Swedish (8e), which are massively if not all

stressed in /10/:

- (8) (a) *pasta, pesto, poco, scena, sempre.*  
 (b) *Arfon, Dyfed, Elan, Ifor, Mynwy.*  
 (c) *Augsburg, Holstein, Leipzig, Ostwald, Steichen.*  
 (d) *Aarhus, Bering, Erlang, Nielsen, Verner.*  
 (e) *Bergman, gyttja, krona, Nilsson, Rehnquist.*

Examples of disyllabic loanwords coming from Russian (9a) and Spanish (9b) which are stressed on the final syllable are listed below:

- (9) (a) *Abkhaz, Baikal, kolkhoz, pirog, Tashkent.*  
 (b) *Bilbao, Falange, Jerez, La Paz, Ortiz.*

These findings show that the overall results from Figure 3 have to be dealt with carefully because final stress patterns are not attested in all disyllabic loanwords in English but rather restricted to words coming from specific source languages. This stress pattern is attested in disyllabic loanwords coming from Russian and Spanish but is rare in loanwords from other languages. The distribution of stress patterns in loanwords of three syllables (or more) will now be considered in 3.2.2.

### 3.2.2. The stressing of loanwords of three syllables (or more)

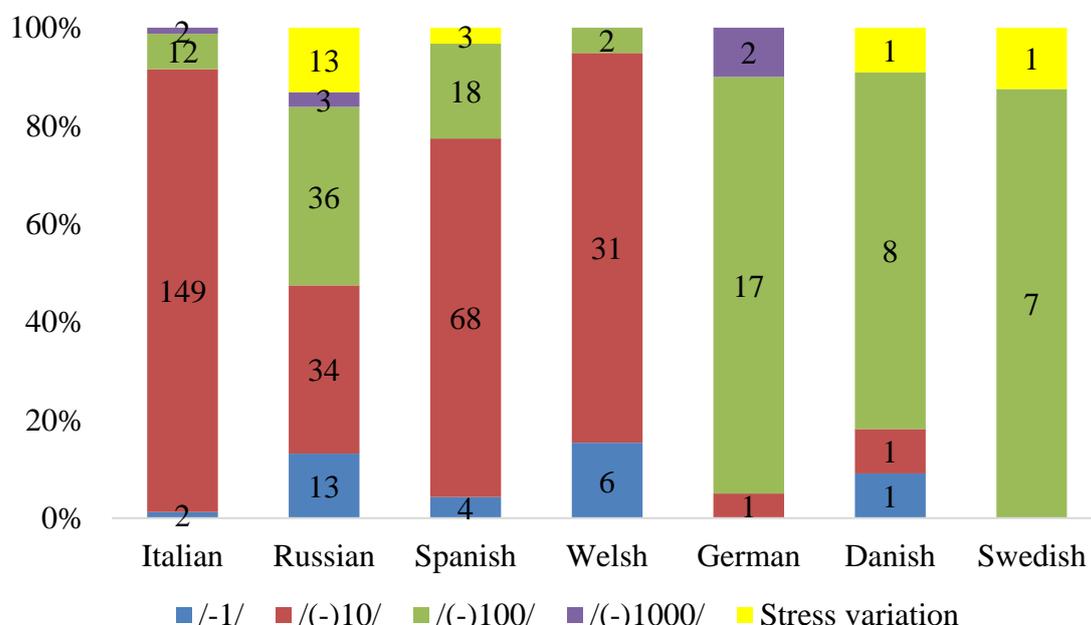


Figure 5: Distribution of stress patterns in trisyllabic (or more) loanwords from major source languages.

The results from Figure 5 show that loanwords of three syllables (or more) coming from Italian and Welsh are generally stressed on the penultimate syllable (90.3% in loanwords from Italian and 79.5% in loanwords from Welsh). This stress pattern is illustrated in (10a) with loanwords from Italian and in (10b) with loanwords from Welsh:

- (10) (a) *Fellini, lasagne, Lugano, maestoso, panettone.*  
 (b) *Abersychan, Aneurin, eisteddfod, Llewelyn, Pontardulais.*

The penultimate stress pattern is less dominant in loanwords coming from Spanish with 73.1% of words exhibiting this pattern. Consequently, the proportion of antepenultimate stress is quite important (19.4%). The results concerning final stress show that this pattern is rare in loanwords of three syllables (or more). There is a small proportion of loanwords from Russian (13.1%) and Welsh (15.4%) which are stressed on the final syllable, as illustrated in (11a) with loanwords from Russian and in (11b) from Welsh:

- (11) (a) *Azerbaijan, Kazakhstan, Novosibirsk, Tadjikistan, Turkmenistan.*  
 (b) *Aberfan, Penybont, Pontypridd, Talybont, Tal-y-llyn.*

The most striking feature from Figure 5 is the distribution of antepenultimate stress in loanwords. Indeed, it appears that loanwords coming from German, Danish and Swedish are massively stressed on the antepenultimate syllable. Examples in (12) illustrate this phenomenon with words from German in (12a), Danish in (12b) and Swedish in (12c):

- (12) (a) *Autobahn, Fassbinder, Hannover, Rosenwald, Saarbrücken.*  
 (b) *Andersen, Jespersen, Kattegat, Odense, Rasmussen.*  
 (c) *Ericsson, Lagerlöf, Swedenborg, Valdemar, Wallenberg.*

The distribution of stress patterns in loanwords from Russian is difficult to interpret as there is no real preferential pattern. Nonetheless, considering the huge proportion of loanwords coming from Russian in the dataset, the proportion of antepenultimate stress is fairly significant (36.3%) as it corresponds to 36 items. The loanwords coming from Russian in (13) are all stressed in /(-)100/:

- (13) *Aeroflot, Bolchevik, Gorbachev, Kaliningrad, Stalingrad.*

Therefore, even if penultimate stress is dominant among loanwords in English, a closer look at the data concerning the major source languages attested in the dictionary shows that the distribution of penultimate stress is not consistent. Loanwords coming from Italian and Welsh (this applies to loanwords from Spanish as well) are usually stressed on the penultimate syllable and the proportion of items from these languages is so important in the dataset that the tendency for loanwords from all languages to be stressed on the penultimate syllable has been in a way ‘overestimated’ in the overall

results. It appears that words from German, Danish, Swedish (and also from Russian to a lesser extent) are more likely to be stressed on the antepenultimate syllable. Besides, a massive proportion of antepenultimate stress is also found in loanwords coming from less attested source languages. Antepenultimate stress is the dominant pattern in loanwords coming from Afrikaans (14a), Dutch (14b) or Turkish (14c):

- (14) (a) *'Krugerrand, Pieter'maritzburg, Ve'reeniging, Wit'watersrand.*  
 (b) *Con'certgebouw, 'Gelderland, 'Groningen, 'Limburger, 'Nijmegen, 'Suriname.*  
 (c) *'Atatürk, 'baklava.*

There is thus a clear disparity in the distribution of stress patterns in English loanwords and this disparity relies on the origin of loanwords. Words borrowed from Italian are not stressed in the same way as those borrowed from Welsh or German. Antepenultimate stress is not that marginal and is actually the preferential pattern in words coming from specific source languages. Therefore, if the language of origin is a significant parameter in the stressing of loanwords in English, it is essential to compare the location of stressed syllables in source languages and in loanwords in English because the distribution of stress patterns in English may result from the reproduction of the stress patterns from source languages. Examples in (15) definitely show that there are correspondences between the location of stressed syllables in English loanwords and the location of stressed syllables in source languages. Final stress matches are attested (15a), as well as penultimate stress matches (15b) or antepenultimate ones (15c) suggesting that this phenomenon is not only restricted to penultimate stress:

- (15) (a) *van Gogh /van'gɒf/* from Dutch /vɑn'xɔx/,  
*Sinn Feinn /ʃɪn'feɪn/* from Irish /sʲɪnʲ'fʲe:nʲ/,  
*Bakhtin /bak'ti:n/* from Russian /bɑx'tʲɪn/,  
*Kap Farvel /,kɑpfa:'vɛl/* from Danish /,kɑbfɑ'vɛl/,  
*Nant-y-glo /,nantə'gləʊ/* from Welsh /,nantʌ'glɒ/.  
 (b) *Botha /'bɒʊtə(r)/* from Afrikaans /'bʊəta/,  
*Hašek /'hɑʃɛk/* from Czech /'hʌʃɛk/,  
*bodega /bə(ʊ)'di:gə(r)/* from Spanish /bo'deyɑ/,  
*Stavanger /stə'vɑŋə(r)/* from Norwegian /stav'aŋɛr/,  
*zucchini /zʊ'ki:ni/* from Italian /tsuk'kini/.  
 (c) *Löwenbräu /'ləʊənbrəʊ/* from German /'lœ:vŋbrɔy/,  
*Ericsson /'ɛrɪksn/* from Swedish /'e:rɪksɔn/,  
*Málaga /'maləgə(r)/* from Spanish /'malajɑ/,  
*Rachmaninov /rɑk'mɑnɒv/* from Russian /rɑx'mɑnʲɪnɒv/,  
*piccolo /'pɪkələʊ/* from Italian /'pikkolo/.

The influential role of the preservation of the stress patterns observed in source

languages on the stressing of loanwords in English might explain why loanwords coming from the same source languages share the same stress properties. The next section investigates this assumption with a stress match analysis.

#### 4. Stress match analysis between source languages and English

Before giving the results of the stress match investigation, the terminology used in the figures below needs to be described. The stress match is ‘total’ when the correspondence between the location of the stressed syllable in the source language and in English is identical. The ‘total match’ category brings together stress correspondences attested on last syllables (16a), penultimate syllables (16b), antepenultimate syllables (16c) or even pre-antepenultimate ones (16d):

- (16) (a) *Nuevo León* /,nweɪvəʊli:ˈɒn/ from Spanish /,nweβoleˈon/.  
 (b) *Mato Grosso* /,matəʊˈgrɒsəʊ/ from Portuguese /,matuˈgrɒsu/.  
 (c) *Swedenborg* /ˈswi:dnɒ:g/ from Swedish /ˈsve:denbɔ:ʝ/.  
 (d) *Peenemunde* /ˈpi:nəˌmʊndə(r)/ from German /ˈpe:nəmʏndə/.

There is ‘no match’ when the location of the stressed syllable in the source language and in English is different as in (17):

- (17) *Bratislava* /,bratɪˈslɑ:və(r)/ from Czech /ˈbrʌtʃslʌvlʌ/,  
*Osnabrück* /ˈɒznəbrʊk/ from German /ɔsnəˈbrʏk/,  
*matador* /ˈmatədɔ:(r)/ from Spanish /mataˈðor/.

Finally, the match is ‘partial’ when there are stress variants but with at least one stress pattern shared by the source languages and English like in (18):

- (18) *Kasparov* /ˈkɑspərɒv/ or /kaˈspɑ:rɒv/ from Russian /kaˈspərəf/.

When there are two primary stresses in the transcriptions of the source languages as sometimes appears in Italian compounds (example: *sotto voce* /,sɒtəʊˈvəʊtʃi/ from Italian /ˈsottoˈvotʃe/), only the rightmost Italian stress has been taken into account and compared with the primary stress in English<sup>8</sup>. Therefore, in *sotto voce*, the stress match is total. The global results of the stress match investigation are presented in 4.1.

#### 4.1. Overall results of the stress match investigation

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<sup>8</sup> When there are two stresses in lexical units in English, the rightmost one is necessarily the primary stress. There are very few exceptions to this principle. That is why the only Italian stress which is taken into account in *sotto voce* is the rightmost one.

The stress match investigation is carried out on 278 disyllabic loanwords and 477 trisyllabic (or more) loanwords. The overall results are presented in Figure 6.

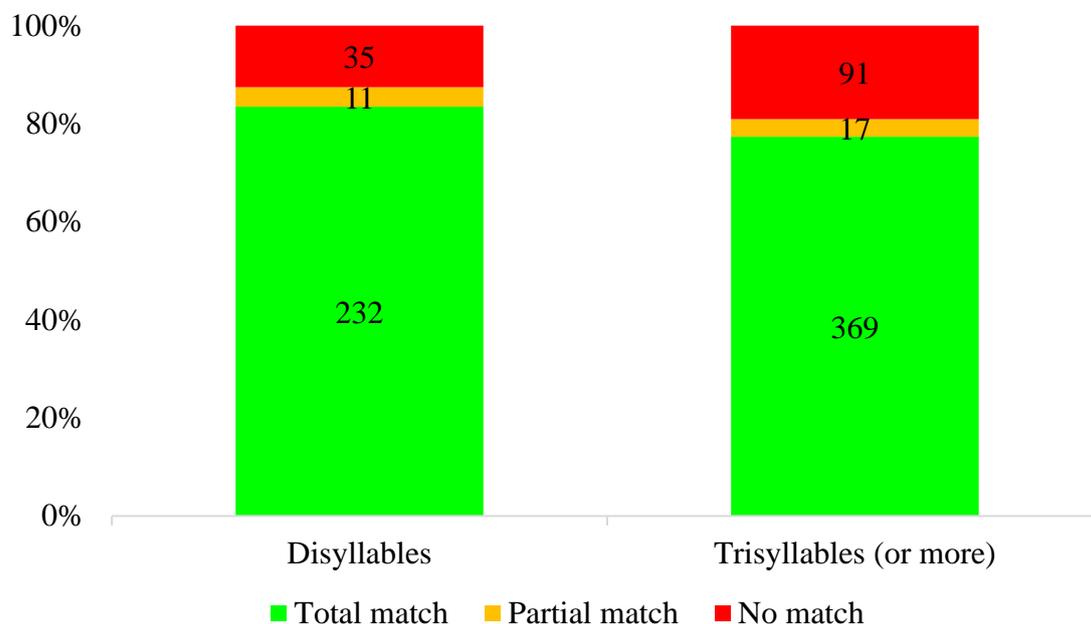


Figure 6: Stress match rates between the source languages and English loanwords.

The results show that 83.5% (232 out of 278) of disyllabic loanwords in English are stressed in the same way as the items in the source languages. Only 12.6% (35 out of 278) of them have distinct stress patterns from those of the source languages. This tendency is confirmed by the results found in loanwords of three syllables (or more). Indeed, the location of primary stress is identical in the source language and in English in 369 out of 477 loanwords (77.4%). Almost 4 loanwords out of 5 reproduce the original stress pattern during the borrowing process. Therefore, one cannot deny that there is a direct phonological influence of items from the source languages on to the primary stress location in corresponding English loanwords. However, the previous section has shown that the global results needed to be refined because of the distinct stress characteristics found in the source languages. One may wonder if the preservation of the original stress pattern is effective whatever the source language may be. In order to test this, these preliminary results are refined by separating the stress match rate results calculated for each source language, dealing first with disyllabic items in 4.2.1 and then with trisyllabic (and more) words in 4.2.2.

## 4.2. Stress match rate results for each source language

### 4.2.1. Disyllabic words

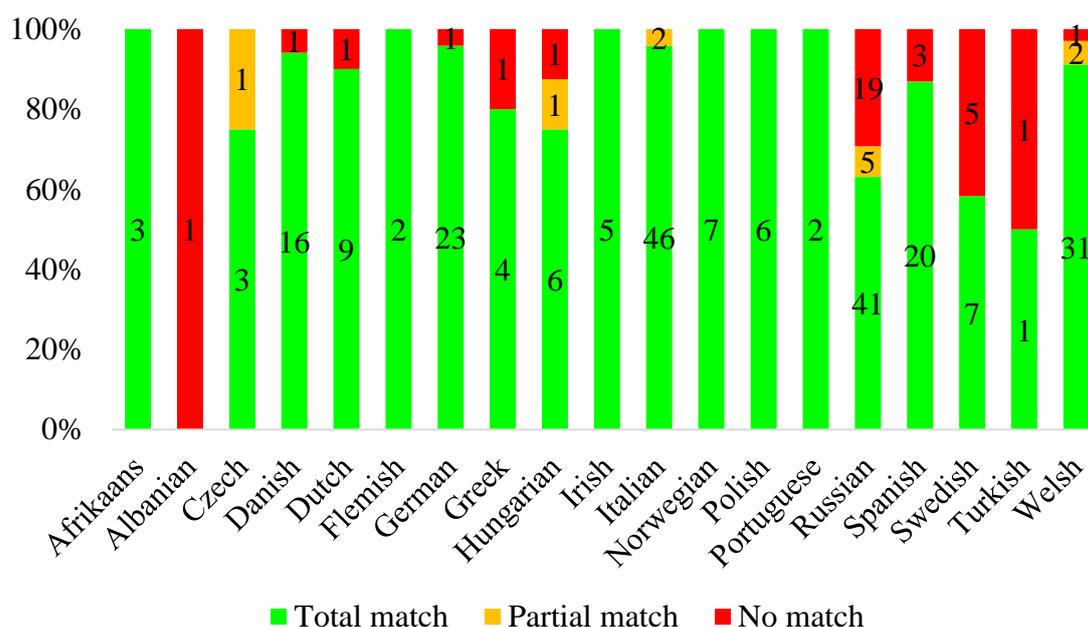


Figure 7: Stress match rate results in disyllabic items for each source language.

Concerning disyllabic words, the results from Figure 7 show that the match between the stress patterns of the source languages and the stress patterns attested in English is perfect or close-to-perfect for words coming from Afrikaans, Czech, Danish, Dutch, Flemish, German, Greek, Hungarian, Irish, Italian, Norwegian, Polish, Portuguese, Spanish and Welsh. The results from Albanian, Russian, Swedish and Turkish are less convincing as it appears that there is no systematic correspondence between the location of the stressed syllable in the source language and in English. However, there are very few items from Albanian (*Tomor* = /10/ in English and /01/ in Albanian) and Turkish (*Iznik* = /10/ in English and /01/ in Turkish), so these preliminary findings have to be dealt with carefully. The results from Swedish show that the English loanwords can sometimes (19a), but not always (19b) be stressed in the same way as in Swedish:

- (19) (a) *gyttja, krona, Malmö, Nilsson, Öland, öre, Vättern* = /10/ in Swedish and in English.  
 (b) *Alfvén, Bergman, Bofors, Rehnquist, Strindberg* = /01/ in Swedish and /10/ in English.

The most interesting results are found in words from Russian because there are 41 items with total stress matches (examples in 20a) but also 19 items with no matches (examples in 20b):

- (20) (a) *Baikal, Bakhtin, kolkhoz, Kurgan, pirog* = /01/ in English and Russian;  
*dacha, droshky, Duma, Gamow, glasnost* = /10/ in English and Russian.  
 (b) *pogrom, shashlik, Soyuz, taiga, Tiflis, Tuva* = /10/ in English and /01/ in

Russian; *Vitebsk* = /01/ in English and /10/ in Russian.

The results found in words of three syllables (or more) will be described in 4.2.2.

#### 4.2.2. Words of three syllables (or more)

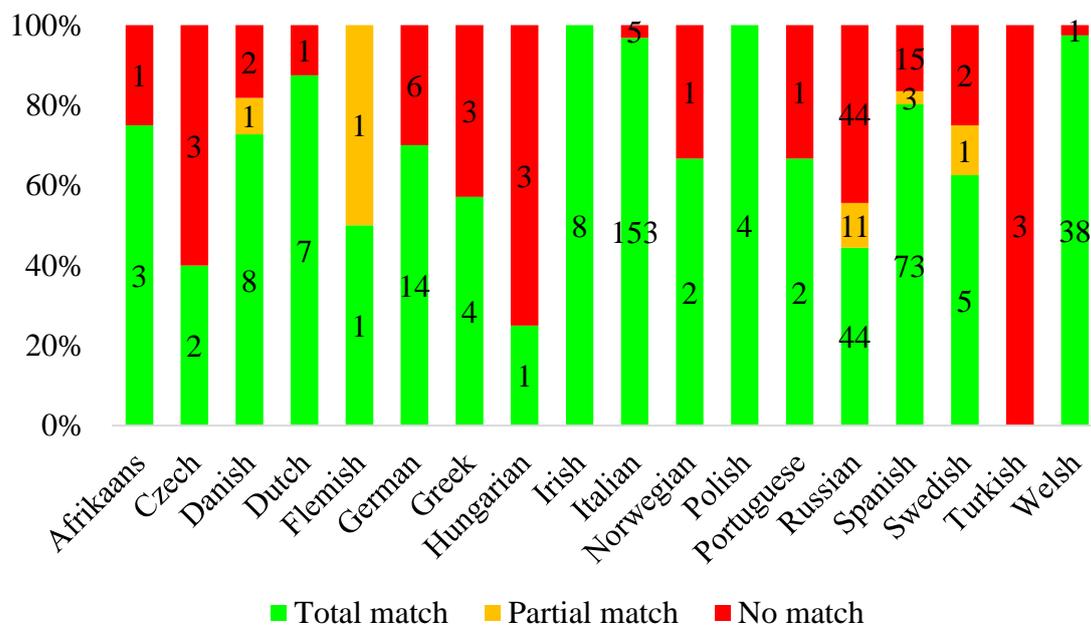


Figure 8: Stress match rate results in trisyllabic (or more) items for each source language.

The stress match rate is high and therefore significant between English and words coming from Afrikaans (21a), Danish (21b), Dutch (21c), Flemish (21d), Irish (21e), Italian (21f), Polish (21g), Swedish (21h) and Welsh (21i).

- (21) (a) *'Krugerrand, Wit'watersrand, Ve'reeniging.*  
 (b) *'Kap Far'vel, 'Andersen, 'Jespersen, 'Kattegat, 'Odense.*  
 (c) *'van de 'Velde, 'Groningen, 'Rijksmuseum.*  
 (d) *'Passchendaele.*  
 (e) *'Fine 'Gael, Cú'chulainn, 'Dáil 'Eireann, Dun 'Laoghaire, 'feiseanna.*  
 (f) *im'pasto, Lo'renzo, pa'pabile.*  
 (g) *'Kato'wice, 'Pade'rewski, 'Pende'recki, 'Zako'pane.*  
 (h) *'Ericsson, 'Lagerlöf, 'Swedenborg, 'Valdemar.*  
 (i) *'Taly'bont, 'Tal-y-'llyn, 'Aber'aeron, 'Aber'sychan.*

There are only 12 loanwords coming from those source languages whose stress patterns differ radically from the original ones (variation is not taken into account). The 12 cases are listed in (22):

- (22) *ˈPieter maritzburg* (English) vs *ˈPieterma ritzburg* (Afrikaans),  
*ˈErte bōlle* (English) vs *ˈErte, bōlle* (Danish),  
*ˈHelsingōr* (English) vs *ˈHelsin ˈgōr* (Danish),  
*ˈSuriname* (English) vs *ˈSuri ˈname* (Dutch),  
*ˈauto ˌstrada* (English) vs *auto ˈstrada* (Italian),  
*ˈauto ˌstrade* (English) vs *auto ˈstrade* (Italian),  
*ˌmode ˈrato* (English) vs *modera ˈto* (Italian),  
*ˌQuasi ˈmodo* (English) vs *Qua ˈsimodo* (Italian),  
*ˈRomeo* (English) vs *Ro ˈmeo* (Italian),  
*ˈHelsingfors* (English) vs *ˈHelsing ˈfors* (Swedish),  
*ˈNorrköping* (English) vs *Norr ˈköping* (Swedish),  
*ˌeistedd ˈfodau* (English) vs *ei ˈsteddfodau* (Welsh).

Loanwords from Spanish tend to retain their original stress patterns (there are 73 stress matches out of 91 loanwords, i.e. 80%). The results are more difficult to interpret in loanwords from German, Greek, Norwegian and Portuguese, as there are just a few more cases for which stress matches are attested but the results are not clear-cut. Finally, there are very few stress matches in words coming from Czech, Hungarian, Russian and Turkish.

The results from Figures 7 and 8 make it possible to rank the source languages from those for which the reproduction of the location of stressed syllables is clearly attested in English to those for which the original stress patterns are scarcely preserved in English, which means there is no correlation between the stressing of loanwords in English and the conservation of the original stress pattern. Moreover, there are source languages which are difficult to categorize because the results are not conclusive.

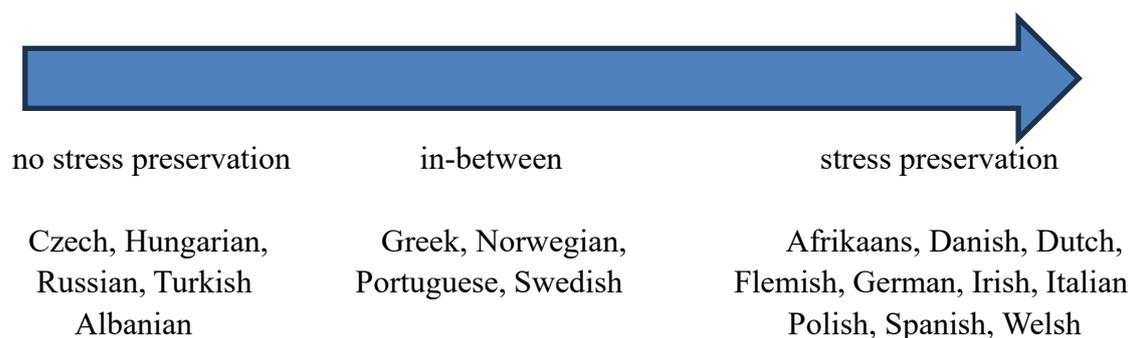


Figure 9: Classification of the source languages according to the stress preservation principle with English loanwords.

It is impossible to determine from the results presented in Figures 7 and 8 if the stress match is effective whatever the stress patterns of the source languages may be, because

there are no details as to whether the distinct stress patterns attested in the source languages are reproduced. One might object that the massive proportion of penultimate stress found in English loanwords is not the consequence of the preservation of the stress pattern of the source languages but rather the application of the default stress pattern found in loanwords in English, i.e. the penultimate one. The hypothesis according to which there could be direct links between the stressing of loanwords in English and the stress patterns of source languages can only be retained if there are reproductions of final or antepenultimate stress patterns as well. In Section 4.3, the results from the preliminary stress match investigation are refined in order to observe the stress match rates among the different stress patterns attested in the source languages.

#### 4.3. Stress match investigation along with stress patterns from major source languages

This detailed stress match investigation only focuses on the source languages with at least 7 disyllabic items and stress variation is not included in order to obtain representative results. The corpus is thus composed of 232 disyllables and the results of the stress match analysis along with the distinct stress patterns found in the source languages are presented in Figure 10.

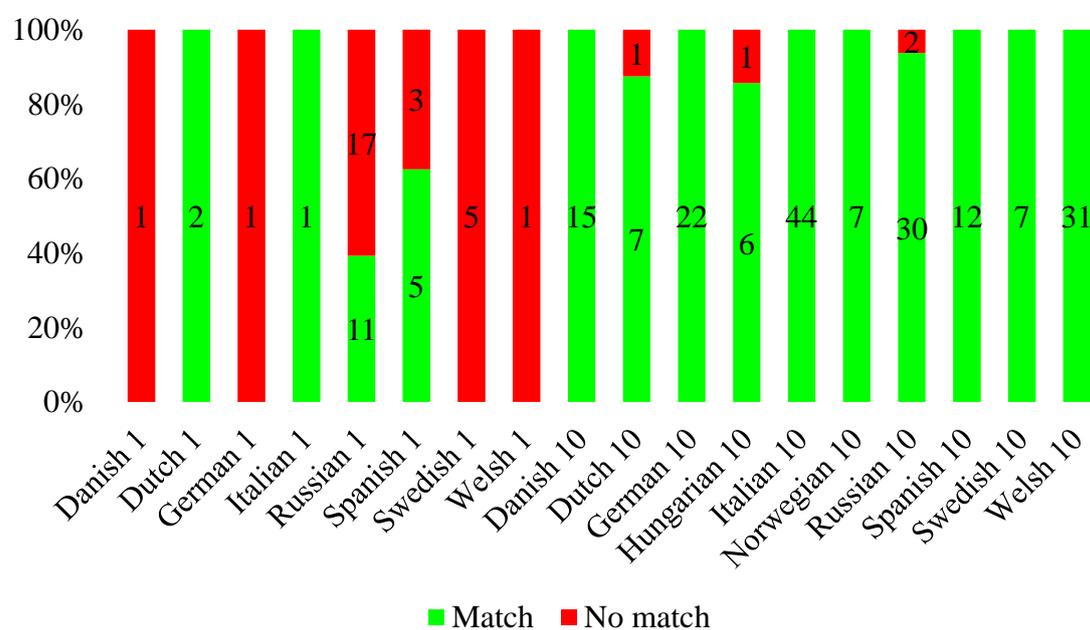


Figure 10: Stress match results in disyllabic items along with the stress patterns attested in the source languages.

The stress patterns attested in the corresponding source languages are indicated on the horizontal bar and positive matches mean that the original stress patterns are

reproduced in English as well. If there are no matches, it means that English stress patterns differ from the ones found in the source languages and which are mentioned on the horizontal bar.

In disyllabic words, the results show that there is usually a match concerning penultimate stress, which seems to confirm that the original penultimate stress pattern is almost systematically reproduced in English. There are only 4 items presented in (23) which contradict this phenomenon:

- (23) *Schie'dam* from Dutch ['sxi:dam],  
*Gá'bor* from Hungarian ['gɑ:bɒr],  
*Mur'mansk* from Russian ['murmənsk],  
*Vi'tebsk* from Russian ['vʲitʲipsk].

The stress match rate on the penultimate syllable in disyllabic words is therefore very high (98%, i.e. 181/185 cases), but on the contrary the match rate concerning final stress is very low (40%, i.e. 19/47 cases). Final stress patterns attested in disyllabic items in the source languages tend not to be reproduced in loanwords in English, which are massively stressed in /10/. There is a preferential /10/ stress pattern in English disyllabic loanwords and it seems to be inherited from the stress patterns of the source languages which are massively stressed in /10/. Indeed, there is a perfect or close-to-perfect /10/ stress match in disyllables coming from Danish, Dutch, German, Hungarian, Italian, Norwegian, Russian, Spanish, Swedish and Welsh.

As far as words of three syllables or more are concerned, only the source languages with at least 7 items in English are conserved and stress variation as well as pre-antepenultimate stress patterns are excluded. The results are presented in Figure 11.

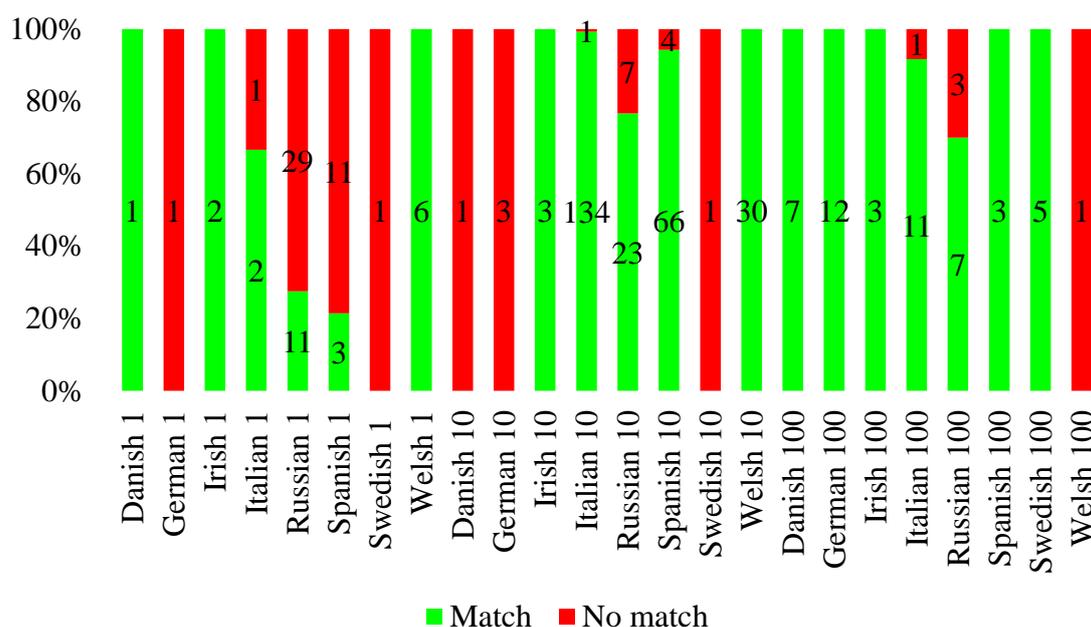


Figure 11: Stress match results in items of three syllables or more along with the stress patterns attested in the source languages.

The results concerning the reproduction of the final stress patterns from the source languages in English show that the stress match rate is actually very low, which echoes the conclusions drawn from the results concerning disyllabic items. There is a perfect match for words coming from Danish, Irish and Welsh and this is also the tendency attested in words coming from Italian, but the number of items is very low. There is a very small proportion of Russian and Spanish words whose final stress patterns are reproduced in English loanwords. The proportion of loanwords which are stressed differently from their original final stress patterns is actually more important. Stress matches for a final primary stress in the source language are only found in 37% of cases (25 matches out of 68).

Once again, the penultimate stress patterns attested in the source languages are generally reproduced in English loanwords. The match rate is perfect or close-to-perfect in words coming from Irish, Italian, Russian, Spanish and Welsh. Surprisingly, this tendency is not attested in the few words coming from Danish, German and Swedish which are all stressed on the antepenultimate in English (examples: *Hannover*, *Helsingor*, *Kristallnacht*, *Norköpping*, *Saarbrücken*). The proportion of penultimate stress preservation is substantial (94%, i.e. 256 matches out of 273). Therefore, the penultimate stress patterns attested in English loanwords are generally inherited from the source languages.

As far as antepenultimate stress patterns in English loanwords are concerned, it appears that they are also massively inherited from the source languages because there is a 91% match (i.e. 48 matches out of 53). This striking result was not anticipated and definitely proves that source languages have an impact on the stressing of loanwords in

English. The stress match is perfect or quasi-perfect in words from Danish, German, Irish, Italian, Spanish and Swedish. Once again, the stress preservation principle is not effective in words of Russian origin and the only Welsh item with an antepenultimate stress is stressed on the penultimate syllable in English (*eisteddfodau*).

## 5. Discussion and conclusions

The results of this study clearly demonstrate that loanwords are massively stressed on the penultimate syllable in English. This stress pattern is attested in disyllabic loanwords but also in loanwords of three syllables or more. This confirms that the penultimate stress pattern is the preferential one found in loanwords in English and echoes the assumption found in Dabouis & P. Fournier [2022] about the existence of a preferential penultimate stress which is massively shared by loanwords within the §Foreign subsystem.

However, the study reveals distinct stress features among loanwords in English, which are directly linked to source languages. Final stress is marginal in English loanwords and mainly attested in disyllabic and trisyllabic (and more) loanwords coming from Russian and Spanish. This echoes the argument (Dabouis & P. Fournier [to appear]) according to which final stress is mainly found in words of French origin. By contrast, the proportion of antepenultimate stress in English loanwords is fairly important (around 20%) and this stress pattern is extensively found in loanwords coming from German, Swedish, Danish and Russian. Therefore, the origin of loanwords might be an indicator of the way such words should be stressed in English. Indeed, if antepenultimate stress is mainly found in specific source languages, this is also the case for penultimate stress. Loanwords from Italian, Welsh and Spanish are massively stressed on the penultimate syllable. The distribution of stress patterns in English loanwords seems to be directly linked to the stress characteristics of source languages.

The results of the comparison between the location of stressed syllables in the source languages and in English are striking. The preservation of the prosodic characteristics of source languages is definitely a determining parameter accounting for the stressing of loanwords in English. However, the results need to be refined because there are huge disparities among the source languages. There is a perfect or close-to-perfect stress match concerning words coming from Afrikaans, Danish, Dutch, Flemish, German, Irish, Italian, Polish, Spanish and Welsh. On the contrary, the assumption that the location of the stressed syllable in English loanwords is derived from the original stress patterns does not apply to words coming from Czech, Hungarian, Turkish, Albanian and Russian. The stress match rate is so low that the preservation principle cannot account for the stressing of such loanwords. The results are not convincing either concerning loanwords coming from Greek, Norwegian, Portuguese and Swedish.

Considering that the reproduction principle is particularly attested in words coming from source languages which are great purveyors of words of foreign origin in English, like Italian or Spanish, this explains why the overall results of the stress match rate are so

high. Such a substantial stress match rate makes it undeniable that source languages are influential on the stressing of loanwords in English. The proportion of stress match would even be higher if words of Russian origin were excluded from the dataset. Indeed, many loanwords of Russian origin in English are stressed differently from the original stress patterns found in Russian. As many loanwords of Russian origin are present in the dataset, this greatly influences the overall results by overrepresenting the “no match” category, when this is obviously mostly restricted to words of Russian origin.

The results show that final stress patterns found in source languages are generally not preserved in English in favour of penultimate stress patterns which are generally attested in disyllabic and trisyllabic (or more) loanwords. Unsurprisingly, penultimate stress from source languages is massively reproduced in English, but this feature was highly anticipated as penultimate stress is the preferential one in English loanwords. On the contrary, such a massive correspondence concerning antepenultimate stress was not expected. If the massive reproduction of stress patterns inherited from source languages was only attested for penultimate stress, one might object that this could actually be the result of the application of the preferential stress pattern on the penultimate and absolutely not linked to the reproduction of the stress properties of source languages. But these findings concerning the high proportion of antepenultimate stress directly inherited from source languages are valuable as we can now legitimately conclude that source languages have a determining impact on the stressing of loanwords in English.

The results might also explain why penultimate stress is the preferential one in loanwords in English and why English speakers, when facing words of foreign origin tend to stress the penultimate as the experiment conducted on Italian words has shown (P. Fournier [2018]). This preferential pattern might have been derived from the massive proportion of words of foreign origin stressed on the penultimate which has integrated the English lexicon through time. This penultimate stress has been massively preserved in English loanwords because, as this study shows, there is a strong tendency to reproduce the original stress patterns in English, and in turn, penultimate stress has been used to stress words of foreign origin in English. It is now used as a phonological marker to signal the foreign origin of lexical items. It might also explain why words of Russian origin are massively stressed on the penultimate syllable in English and do not reproduce the original stress patterns in Russian.

The impact of source languages on the stressing of loanwords in English is undeniable but when this preservation principle is not respected, the preferential penultimate stress is used by default in English loanwords. There is actually an ongoing conflict in English between the preservation of the stress patterns inherited from source languages and the application of the preferential penultimate stress. The application of this preferential stress sometimes generates stress differences between source languages and English.

However, it is hard to explain why there is a perfect or close-to-perfect reproduction of the original stress patterns from some source languages but not from others. In the introduction, it is suggested that loanwords are introduced in English by bilingual

speakers who can use either the mechanisms ruling the source language or the target language to pronounce them. This position definitely echoes the two scenarios highlighted in this analysis: the preservation of the stress pattern from source languages or the application of the preferential penultimate stress characteristic of the English system. The usual preservation of original stress patterns attested in this study suggests that loanwords infiltrate English through bilingual speakers who can therefore reproduce the stress patterns of source languages. This is highly probable considering the principle of stress deafness which is generally shared by non-bilingual speakers (Broselow [2009]). Therefore, if loanwords were introduced in English by non-bilingual speakers, such stress match rates would not exist. Could this mean that loanwords of Russian origin are introduced in English by non-bilingual speakers considering the low stress match rate attested? Probably not, as recent research (Kang [2010], Davis, Tsujimura & Tu [2012]) suggests that if prosodic systems are too different, then the probability of preserving stress from the source language into the borrowing language is lower. In other words, the prosodic characteristics of the English and Russian systems would be so different that it might be impossible for speakers to reproduce the Russian stress pattern in English. This argument echoes the results found in P. Fournier [2016] which show that the application of the penultimate preferential stress pattern in loanwords of Japanese origin is the consequence of the incompatibilities between the English and the Japanese stress systems. Their fundamental characteristics are so different that stress preservation turns out to be impossible. A study of the prosodic characteristics of source languages would therefore be valuable in order to determine if the preservation of the original stress patterns in English can be accounted for with this parameter.

To conclude, this study shows that the phonological properties of source languages and more precisely their stress characteristics have a fundamental impact on the stressing of loanwords in English. The results confirm that the stress patterns of source languages are generally reproduced in English, which accounts for the significant proportion of antepenultimate stress in the dataset. However, stress variation shows that there is a conflict between stress preservation and the application of the preferential stress pattern in English. English loanwords are generally stressed on the penultimate and this is a phonological indicator which may be used in English alongside other features to illustrate the foreign origin of items. These preliminary results are based on British English only, and American English should be investigated as well. It is also necessary to work on a larger dataset because quite surprisingly, the phonetic transcriptions of major source languages are absent in the *Routledge* dictionary (examples: Arabic, Chinese, Japanese). Finally, it is essential in future studies to test the influence of the preservation stress hypothesis along with other determining parameters of the English system (examples: segmental structure, grammatical category, syllable weight, morphological structure) in order to determine its efficiency.

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Appendix: Final dataset (768 loanwords) extracted from *Routledge* 2<sup>nd</sup> edition

**Afrikaans** (7 items): disyllables = *Botha, duiker, Kruger*; trisyllables and more = *Krugerrand, Pietermaritzburg, Vereeniging, Witwatersrand*.

**Albanian** (1 item): disyllable = *Tomor*.

**Czech** (9 items): disyllables = *Brno, háleř, Hašek, Praha*; trisyllables and more = *Bratislava, Janáček, koruna, Navrátilova, Novotný*.

**Danish** (28 items): disyllables = *Aalborg, Aarhus, Ålborg, Århus, Bering, Blixen, Bornholm, Brahe, Dagmar, Erlang, Esbjerg, Falster, Herning, Nielsen, Roskilde, Tórshavn, Verner*; trisyllables and more = *Andersen, Buxtehude, Ertebølle, Helsingør, Jespersen, Kap Farvel, Kattégat, Kierkegaard, Odense, Petersen, Rasmussen*.

**Dutch** (18 items): disyllables = *Gouda, gulden, Huygens, Limburg, Rembrandt, Schiedam, van Gogh, Vermeer, Zeeland, Zwolle*; trisyllables and more = *Concertgebouw, Gelderland, Groningen, Limburger, Nijmegen, Rijksmuseum, Suriname, van de Velde*.

**Flemish** (4 items): disyllables = *Leuven, Oostende*; trisyllables and more = *Passchendaele, Zeebrugge*.

**German** (44 items): disyllables = *Aachen, Adler, Augsburg, Blücher, Diekirch, Duisburg, Gasthof, Hänsel, Heilbronn, Holstein, Karlsbad, Kirchhoff, Kroeber, Leichhardt, Leipzig, Müller, München, Münster, Ostwald, Rügen, Seifert, Steichen, Steuben, Würzburg*; trisyllables and more = *Ansbacher, Autobahn, Baden(-)Württemberg, Baedeker, Erzgebirge, Fassbinder, Gasthöfe, Götterdämmerung, Hannover, Heldentenor, Königsberg, Kristallnacht, Löwenbräu, Niemöller, Osnabrück, Peenemunde, Rosenwald, Saarbrücken, Seligman, Württemberg*.

**Greek** (12 items): disyllables = *boule, dromoi, Khíos, Pátmos, Vólos*; trisyllables and more = *Áyios Nikólaos, bouzouki, Kórinthos, Seféris, souvlaki, taverna, tztziki*.

**Hungarian** (12 items): disyllables = *Bartók, csárdás, forint, Gábor, Káddár, Kodály, Korda, Lehár*; trisyllables and more = *Balaton, Budapest, Fertő Tó, Ilona*.

**Irish** (13 items): disyllables = *Éire, Gaeltacht, Samhain, Sinn Fein, slàinte*; trisyllables and more = *Cúchulainn, Dáil Eireann, Dun Laoghaire, feiseanna, Fianna Fáil, Fine Gael, Oireachtas, Tánaiste*.

**Italian** (214 items): disyllables = *Arno, Cavour, Croce, Fara, Gigli, Gobbi, Guardi, Lana, lento, lira, Loren, maestro, molto, Parma, pasta, penne, pesto, Pisa, Pitti, pizza, poco, presto, primo, putti, putto, Quattro, Rocco, Roma, Rossi, scampi, scena, scherzo, secco, sempre, signor, solo, squacco, stretto, stucco, tempi, tempo, tondi, tondo, Trieste, troppo, uno, Vespa, Vico, Zante*; trisyllables and more = *Abruzzi, Alberti, Albinoni, Amalfi, Amati, Annigoni, Antonioni, Armani, arrivederci, Ascona, autostrada, autostrade, Avogadro, Bugatti, ciabatta, condottiere, Coppola, Così Fan Tutte, da Vinci, Donizetti, Farnese, Fellini, figurante, Firenze, Galvani, Griselda, impasto, Lambretta, Lambrusco, larghetto, lasagne, legato, libretto, Livorno, Locarno, Lorenzo, Lugano, ma non troppo, Machiavelli, maestoso, Maggiore, manicotti, Manzoni, minestrone, moderato, obbligato, Pacino, Paganini, Pagliacci, Palermo, panettone, panforte, Panini, Pantelleria, papabile, paparazzi, Parmigianino, partita, Pavarotti, pecorino, pentimenti, peperino, peperoni, Pestalozzi, pianissimo, piano nobile, pianoforte, piccolo, pietà, Pirandello, Piranesi, Pisano, pizzeria, pizzicato, podestà, polacca, polenta, Pontormo, portamenti, portolano, pozzolana, predella, prestissimo, prima ballerina, prima donna, primavera, Puccini, Quasimodo, quattrocento, Radice, rallentando, Ravenna, ravioli, Respighi, ricotta,*

*Rimini, ripieno, Risorgimento, risotto, ritardando, ritenuti, ritornelli, Riviera, Romeo, Rossellini, Rossini, rubato, saltarelli, scaloppine, scherzando, Schiaparelli, scirocco, secondi, seicento, semplice, serenata, sforzando, sforzato, sfumati, sgraffiti, signora, signorina, simpatico, smorzando, solfatara, solfeggio, sonata, sonatina, soprano, soprano, sordini, sostenuto, sotto voce, spaghetti, spiccato, spumante, spumoni, staccato, stellini, stringendo, tagliatelle, tempera, tenuto, terramara, terrazzo, terza rima, terzetti, tessitura, Tetrizzini, toccata, tortellini, tramontana, trattoria, trecento, tutti-frutti, Uffizi, vaporetta, verismo, vermicelli, villeggiatura, Vivaldi, Zeffirelli, zingari, zucchetto, zucchini.*

**Norwegian** (10 items): disyllables = *Bokmål, Hansen, Ibsen, Narvik, Nordkinn, Oslo, Trondheim*; trisyllables and more = *Amundsen, Lofoten, Stavanger*.

**Polish** (10 items): disyllables = *Gdańsk, Kielce, Kraków, Poznań, Wrocław, złoty*; trisyllables and more = *Katowice, Paderewski, Penderecki, Zakopane*.

**Portuguese** (5 items): disyllables = *Douro, Faro*; trisyllables and more = *Benguela, Carajás, Mato Grosso*.

**Russian** (166 items): disyllables = *Abkhaz, Altai, artel, Baikal, Bakhtin, Baku, Balkhash, Bokhara, Cheka, dacha, droshky, Duma, Gamow, glasnost, Gogol, gulag, Kalmuck, Karpov, Kaunas, Kazakh, Kharkov, Khrushchev, Kirov, kolkhoz, koumis, kulak, Kurgan, Kyrgyz, Lada, Laptev, Lena (forename), Lena (river), Lenin, Mikhail, Moskva, Murmansk, muzhik, Neva, Nevsky, Pavlov, Penza, pirog, podsol, pogrom, Pravda, Pushkin, Riga, Rurik, Sergei, shashlik, souslik, Soyuz, sputnik, suslik, Tadjik, taiga, Tashkent, Tiflis, troika, Tula, Tuva, ukase, Ukraine, Verny, Vitebsk, vodka, Yakut, zemstvo*; trisyllables and more = *Aeroflot, Aleksandrovsk, Alma-Ata, apparatchik, Ashkenazy, Ashkhabad, Astrakhan, Azerbaijan, babushka, balalaika, Birobidzhan, Bolshevik, Borodin, Borodino, Bukhara, Chelyabinsk, Cherenkov, Comintern, Ekaterinburg, Eugene Onegin, Gagarin, Godunov, Gorbachev, Gromyko, Horowitz, Kalinin, Kaliningrad, Kaluga, Kamenskoye, Kandinsky, Kasparov, Kazakhstan, Kerensky, Khabarovsk, Koluma, Komsomol, Korsakoff, Kostroma, Kosygin, Leninakan, Leningrad, Leonid, Lysenko, Maksutov, Mandelstam, Menshevik, Minkowski, Mussorgsky, Nabokov, nomenklatura, Novgorod, Novokuznetsk, Novosibirsk, Nureyev, Odessa, Orenburg, Pasternak, Pavlova, Petersburg, Petrograd, pierogi, Politburo, Potemkin, Przewalski, Rachmaninov, Raisa, Rasputin, Rimsky-Korsakov, Romanov, Rostropovich, Sakhalin, Samarkand, samizdat, samovar, samoyed, sastrugi, Sevastopol, Shevardnadze, Sholokhov, Stalingrad, Tadjikistan, Taganrog, tarantass, Tbilisi, tovarich, Trubetskoy, tsarevich, tsarevna, Turkestan, Turkmenistan, Ulanova, Ustinov, Vladimir, Vladivostok, Volgograd, Yekaterinburg, Yerevan, Yevtushenko*.

**Spanish** (116 items): disyllables = *Bilbao, Chavez, El Cid, Falange, Gaudí, Guzmán, Ifni, Jerez, Juárez, junta, La Paz, León (town in Spain), llano, López, Lorca, Méndez, mesa, Mixtec, Muñoz, Ortiz, Pérez, Ruiz, Vásquez*; trisyllables and more = *Acapulco, Aconcagua, Aguilar, Albacete, Alfonso, Algeciras, Alhambra, Alicante, Allende, Almería, alpargata, Altiplano, Alvarez, Ambato, anchoveta, Andorra, Antofagasta, Arequipa, Argentina, arroyo, Ávila, Ayacucho, Aymara, Ballesteros, Barcelona, Benidorm, bodega, Calderón,*

*Cervantes, chaparajos, Chimborazo, Cochabamba, copaiba, coquina, cordillera, corozo, Cozumel, cuadrilla, Ecuador, García, González, guacharo, guanaco, guerrilla, Ibiza, jalapeño, Jiménez, jipijapa, jojoba, Juanita, La Coruña, La Jolla, Ladino, Lanzarote, Laredo, Las Palmas, llanero, Machu Picchu, Málaga, malaguena, Malvinas, mantilla, matador, Mendoza, Mercedes, Mexicali, Mudéjar, Mudéjares, Murillo, Nuevo León, Orinoco, Ortega, parador, Paraguay, Pinochet, Ramírez, Sajama, San Jacinto, San Salvador, Soledad, Tenerife, Tijuana, Torquemada, Uruguay, Valparaiso, Velásquez, Veracruz, vizcacha, Ximenes, Zacatecas, Zapata, Zapotec, Zaragoza.*

**Swedish** (21 items): disyllables = *Alfvén, Bergman, Bjorn, Bofors, gyttja, krona, Malmö, Nilsson, Öland, öre, Rehnquist, Strindberg, Vättern*; trisyllables and more = *Ericsson, Helsingfors, Lagerlöf, Norrköping, Swedenborg, Uppsala, Valdemar, Wallenberg.*

**Turkish** (5 items): disyllables = *Izmir, Iznik*; trisyllables and more = *Atatürk, baklava, vilayet.*

**Welsh** (73 items): disyllables = *afon, Amlwch, Arfon, Ceinwen, Cleddau, Clydach, Dewi, Dyfed, Dyffryn, Dylan, Elan, Eynon, Gwendraeth, Hywel, Iestyn, Ieuan, Ifor, Iolo, Iorwerth, Morfa, Mynwy, Ogwen, Penrhos, Penrhyn, Powys (surname), Powys (Welsh county), Rhodri, Rhondda, Rhuddlan, Rhydderch, Rhymney, torgoch, Tryfan, Vyrnwy*; trisyllables and more = *Aberaeron, Aberfan, Abersychan, Aberystwyth, Aneurin, Angharad, Caernarfon, cynghanedd, Dinorwic, Dolgellau, eisteddfod, eisteddfodau, Eluned, Felindre, Hirwaun, Islwyn, Llanwrtyd, Llewelyn, Meredydd, Merthyr Tydfil, Myfanwy, Nantgaredig, Nant-y-glo, Penybont, Plaid Cymru, Pontardawe, Pontardulais, Pontypridd, Preseli, Prestatyn, Pwllheli, Rhiannon, Rhossili, Ruabon, Talybont, Tal-y-llyn, teledu, Tonyrefail, Ystalyfera.*