

**The Adaptation of Arabic Loanwords in English:
A Phonological Analysis**
**L'adaptation des emprunts Arabes en Anglais :
Une analyse phonologique**

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Abstract

Linguistic borrowing is one of the universal on Arabic-English borrowing. The main concern of this research is to determine how and why Arabic loanwords were integrated in the phonology and morphology of English. Based on a repertoire of more than 200 words, we have found that Arabic loanwords were phonologically adapted in English due to the significant differences in the two phonological systems. Also, the diverse climatic conditions between Arabic- and English-speaking areas played a great role in shaping the production of these words.

Keywords: Arabic; English; language change; linguistic borrowing

Résumé

L'emprunt linguistique est l'un des phénomènes universels qui caractérise toutes les langues du monde ce qui a éveillé, depuis plusieurs décennies, la curiosité de plusieurs linguistes appartenant à différentes communautés linguistiques. En effet, l'article suivant a pour but d'explorer les caractéristiques du processus de l'emprunt en focalisant sur l'emprunt arabe-anglais. La principale préoccupation de cette recherche est de déterminer comment et pourquoi les emprunts arabes ont été intégrés dans la

phonologie et la morphologie de la langue anglaise. Sur la base d'un répertoire de plus de 200 mots, nous avons constaté que les emprunts arabes sont adaptés phonologiquement à l'anglais en raison des différences significatives entre les deux systèmes phonologiques. De plus, les différentes conditions climatiques des régions arabophones et anglophones ont joué un grand rôle dans l'élaboration de la production de ces mots.

Mots clés : L'Arabe ; L'Anglais ; changement linguistique ; L'emprunt linguistique*

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1. INTRODUCTION

Linguistic Borrowing is one of the several outcomes of contact between different speech communities. It is the fact that words can be transferred from one language to another language in contact (Haugen, 1950). Winford (2010: 172) defines it as "the transfer of linguistic materials from an SL into an RL via the agency of speakers for whom the latter is the linguistically dominant languages, in other words, via RL agentivity." History always gives evidence that the borrowing of words is in general attracted by languages that are said to be 'prestigious' and 'powerful'. Borrowing can be also caused by linguistic gaps in the RL regardless to the facts of 'prestige' and 'power' (Matras: 2009). In the same vein, Sankoff (2013) points to the fact that linguistic borrowing can be also the consequence of some socio-historical conditions such as: colonization, modernization, and geographical mobility.

This paper is meant first to give a theoretical overview about the borrowing process: characteristics, reasons, and mainly its role in language change. Then, all this literature is taken as a ground upon which we investigate our case of study (Arabic Loanwords in English). This work is based on a corpus of more than 200 English words of Arabic origin exposed under the light of these theoretical findings to see mainly the reasons and the ways that made these words changing to the current shape of pronunciation and, at times, morphology.

It is very useful to start with some terminology, to go easily to the core of the subject. Loanwords are words of a language (the source language) adopted by another speech community (the host language). A loanword is also called a borrowing; the abstract noun

'borrowing' refers to the whole process whereby speakers adopting new words from other languages. However, many things are said about these terms. Crystal (1990:37) claims that: "... quite a large number [of newly created words] are simply taken over from other languages; they are called 'borrowings' or 'loanwords' (slightly misleading expressions...)." This is because, as Aitchison says (2004:141): "It implies that the element in question is taken from the donor language for a limited amount of time and then returned, which is by no means the case. The item is actually copied, rather than borrowed in the strict sense of the term."

2. Characteristics of Borrowing

According to Aitchison (2004:142), there are a number of factors that characterize the borrowing behavior. The first of these is that detachable elements are easily and more frequently borrowed. That is "elements which are easily detached from the donor language and which will not affect the structure of the borrowing language". These detachable elements are mainly vocabulary.

However, it is of paramount importance to go beyond this point to get a clearer idea about the different types of these elements. Many linguists insist on the fact that there is a great difference between cultural borrowing and basic or core borrowing. The former refers to items for objects and concepts which are new to the culture of the recipient language (Myers-Scotton, 1993). Core borrowings, on the other hand, refer to items that are normally unnecessary as they already exist in the host language. Yet, basic vocabulary borrowing is not frequently found, since it is not easy to be replaced by loanwords. This opinion is enforced by some linguists who share the same view about this question. For instance, Hock and Joseph claim (1996:257) that:

"From a purely linguistic perspective, the most important fact is that different spheres of vocabulary are borrowed more easily, others significantly less easily. For instance, the most successful resistance to borrowing is offered by BASIC vocabulary, words referring to the most essential human activities, needs, etc., speech as eat, leap; moon, win; do, have, be..."

Then, one has to move a step deeper and analyses the borrowing process in accordance with parts of speech. First, it is widely acknowledged that content words are more likely to be borrowed than function words. And within content, lexis is the more likely to borrow, and nouns come in the forefront.

van Hout and Muysken give the following explanation (1994:42):

“A very important factor involves one of the primary motivations for lexical borrowing, that is, to extend the referential potential of language. Since reference is established primary through nouns, these are the elements borrowed most easily.”

Besides, according to Aitchison (2004:142), “adopted items tend to be changed to fit in with the structure” of the host language. Finally, linguistic borrowing is characterized by another feature named by Aitchison (2004) ‘minimal adjustment’ tendency. The latter claims that the alterations of loanwords happening in the borrowing language are very small, with a series of minute steps.

3. Comparison Between Arabic and English Phonological Systems

It is of paramount importance to have an overview on the phonology of Arabic and English. This will help to compare between the two phonological systems and define the phonological gaps between the two languages.

3.1 English Phonology

English, which is a Germanic language, contains 44 sounds, among which there are 24 consonant sounds. English consonants are classified according to their: (a) place of articulation, (b) manner of articulation, and (c) whether they are voiced or voiceless (Crystal, 1987). Here is a table illustrating this classification:

Table 1. The English Consonant System

	Place of Articulation								
	Bilabial	Labio-dental	Dental	Alveolar	Palato-alveolar	Palatal	Velar	Glottal	

		<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>Voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>
Manner of Articulation	Plosive	p	b					t	d					k	g
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ				h
	Affricate									tʃ	dʒ				
	Lateral								l						
	Nasal		m						n						ŋ
	Approximant		w								r			j	

3.2 Arabic Phonology

Arabic belongs to the Hamito-Semitic language family. It contains 28 consonant sounds. As well as English, consonants in Arabic are classified according to their place of articulation, manner of articulation and voicing. However, there is another phonological aspect included in the description of Arabic consonants which is ‘velarization’ (Al-Naimi, no date). The latter is a secondary articulation in the pronunciation of consonants in which the tongue is drawn back toward the velum. By virtue of the velarization aspect, Arabic has 4 distinguished sounds; they are called ‘velarized’ sounds. These sounds are: /t̤/, /ð̤/, /s̤/ and /d̤/. Consider the following table describing the Arabic consonant system:

Table 2. The Arabic Consonant System

		Place of Articulation
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		Bilabial		Labio-dental		Dental		Alveolar		Palato-alveolar		Palatal		Velar		Pharyngeal		Glottal		
		<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	<i>voiceless</i>	<i>voiced</i>	
Manner of Articulation	Plosive		b					t	d					k					ʔ	
								ṭ	ḍ					q						
	Fricative			f		θ	ð	s	z	ʃ	ʒ			χ	ʁ	ħ	ʕ		h	
							θ̣	ṣ												
	Affricate																			
	Lateral								l											
	Rolled										r									
	Nasal		m						n											
Approximant		w										j								

4. Adaptation of Arabic Loanwords in English

Some etymologists claim that the English language contains about 600 Arabic-origin words, while others say that it borrowed over than a thousand from the same language. In the current study, the researcher implemented a corpus of more than 200 words which are all mentioned in certified English dictionaries (e.g. Oxford; Merriam-Webster). Many words were avoided in this study as they are obscure, speculative and/or less derivative. Also borrowed names of places and famous people were excluded from the analysis. Since early times, literature proved that the Arabic language was a major source of borrowing for English (Taylor, 1933); however, as a measure of data accuracy assurance, the researcher has double-checked each word of the corpus in etymological dictionaries (namely www.etymoline.com) to test its Arabic origin.

Based on this corpus, this part of the study is devoted particularly to describe and analyze Arabic loanwords in English, aiming at investigating mainly the phonological adaptations that were applied on the lexical items in question. The term ‘adaptation’ refers to the process of altering the phonological (and at times the morphological) makeup of the loanwords in order to fit in the phonology (and the morphology) of the

recipient language. However, the speaker of the recipient language has to preserve as much information from the source word as possible while still satisfying the constraints of his own language. This speaker will tend to preserve features whose absence would be most noticeable; and when there is a necessity to make some alterations, he will make his modifications as unobtrusive as possible by substituting a sound that most resemble the original. As opposed to this, 'adoption' refers to introducing the foreign word to the recipient language as it exists in the source language, i.e., with no adaptation.

4.1 Phonological Gaps between Arabic and English

Strictly speaking, the main reason that obliged English speakers to change the pronunciation of Arabic loanwords is the absence of some sounds in their native tongue. After borrowing words from Arabic, English native speakers faced the fact that there are many words which contain segments constituting accidental gaps in the phonology of their language. Our investigation proves that such sounds are often replaced by their nearest homorganic equivalents, or sometimes by sounds that are produced in the same manner of articulation (as a second solution to surmount this problem). Let us consider the following examples to explain this idea:

Table 3. The /h/ Arabic sound adaptation in English

Arabic Sound	/h/	voiceless	pharyngeal	fricative
English Sound	/h/	voiceless	glottal	fricative
	/k/	voiceless	velar	plosive

As shown in table 3, the Arabic voiceless pharyngeal fricative /h/ does not exist in the English phonological map. When Arabic words including this sound were borrowed to English, this sound was replaced automatically by the most analogical counterpart which is /h/. In other exceptional cases, like in the word 'racket', the sound /h/ was replaced by /k/. The explanation of this feature, after tracing the word in etymological dictionaries, is that this word was not borrowed in English directly, but it was first loaned in French where even the sound /h/ does not exist. Therefore, it was replaced by /k/, and this

sound was kept when the word was again borrowed in English. Consider the following examples:

<i>English Word</i>	<i>Arabic Word (IPA)</i>	<i>Arabic Word (meaning)</i>
<i>Alcohol</i>	[al-kuḥūl]	<i>same meaning</i>
<i>Fomalhaut</i>	[fam] [al-ḥūt]	The mouth of the ship
<i>Hadith</i>	[ḥadīθ]	Tradition
<i>Haj</i>	[ḥadʒ]	Pilgrimage
<i>Halal</i>	[ḥalāl]	Lawful
<i>Halvah</i>	[ḥalwa]	Sweet
<i>Harem</i>	[ḥarīm]	Prohibited
<i>Hashish</i>	[ḥaʃiʃ]	dried herbs, hemp
<i>Henna</i>	[ḥinnāʔ]	<i>same meaning</i>
<i>Hookah</i>	[ḥuqqa]	Water bottle
<i>Houri</i>	[ḥūriyya]	Someone with eyes like gazelles
<i>Kohl</i>	[kuḥl]	stain, paint
<i>Racket</i>	[rāḥat] [al-yad]	Palm of the hand
<i>Sahib</i>	[ʃaḥīb]	companion, friend
<i>Tahini</i>	[taḥīna]	<i>From the verb to 'crush'</i>

Table 4. The /ṭ/ Arabic Sound Adaptation in English

Arabic Sound	/ṭ/	voiceless	dental	plosive (velarized)
English	/t/	voiceless	dental	plosive
Sound	/d/	voiced	dental	plosive

Table 4 illustrates that the /ṭ/ sound is a velarized version of the English /t/ sound. Therefore, following the same process, in most Arabic loanwords, /ṭ/ was replaced by /t/. For instance, consider the following table. Also, in fewer examples, the /ṭ/ sound was substituted by /d/ which is also homogenous to it as shown in the same table.

<i>English Word</i>	<i>Arabic Word (IPA)</i>	<i>Arabic Word (meaning)</i>
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<i>Adobe</i>	[aṭūba]	The brick
<i>Attar</i>	[ʕaṭṭara]	Aroma
<i>Calico</i>	[qāliqūt]	Calicut (in India)
<i>Carat</i>	[qīrāt]	Small weight
<i>Copt</i>	[qibt]	<i>same meaning</i>
<i>Cotton</i>	[quṭn]	<i>same meaning</i>
<i>Mattress</i>	[maṭraḥ]	mat, cushion
<i>Natron</i>	[naṭrūn]	<i>same meaning</i>
<i>Talisman</i>	[ṭilasm]	<i>same meaning</i>
<i>Tamarind</i>	[tamr] [hindiyy]	Dates of India
<i>Tarboosh</i>	[ṭarbūʃ]	<i>same meaning</i>
<i>Tare</i>	[ṭaraḥa]	<i>From the verb to 'reject'</i>
<i>Tariff</i>	[taṣriṭ]	Notification
<i>Tarragon</i>	[ṭarḫūn]	<i>same meaning</i>

Table 5. The /ð/ Arabic Sound Adaptation in English

Arabic Sound	/ð/	voiced	dental	fricative (velarized)
English Sound	/z/	voiced	alveolar	fricative

Replacing the Arabic /ð/ sound in English by /z/ in many loanwords can be explained in two hypotheses. The first one is that the two sounds are produced in the same manner of articulation (fricative), so they follow the same process as the previous examples: replacing the gap sound by the nearest to it. The second hypothesis is that the loanword might be influenced by the dialectal pronunciation of these words in some Arabic areas. For instance, words like: *nidh'am* and *muedh'in* are respectively pronounced *nizam* and *muezzin* in Egypt and in the Levant.

<i>English Word</i>	<i>Arabic Word (IPA)</i>	<i>Arabic Word (meaning)</i>
<i>Muezzin</i>	[muʔaððin]	<i>From the verb to 'proclaim'</i>
<i>Nizam</i>	[niðām]	Government

Table 6. The /ʁ/ Arabic Sound Adaptation in English

Arabic Sound	/ʁ/	voiced	velar	fricative
English	/k/	voiceless	velar	plosive
Sound	/g/	voiced	velar	plosive

Table 7. The /χ/ Arabic Sound Adaptation in English

Arabic Sound	/χ/	voiceless	velar	fricative
English	/k/	voiceless	velar	plosive
Sound	/g/	voiced	velar	plosive

Table 6 is devoted to the sound /ʁ/ which is another consonant exclusive to Arabic. It is a voiced velar fricative. As shown in this table, this sound is replaced in English either by /k/ or /g/ which are both velar plosives. Likewise, /k/ and /g/ are also substitutions to the Arabic voiceless velar fricative /χ/. In its turn, table 7 illustrates how the three sounds are analogical in a way or another. These were other cases that reinforce the accuracy of the law that implies that phonological gaps in loanwords are replaced by the nearest counterpart sounds in the phonology of the host language. For more illustrations, consider the following two tables with examples for the sounds /ʁ/ and /χ/ respectively:

<i>English Word</i>	<i>Arabic Word (IPA)</i>	<i>Arabic Word (meaning)</i>
<i>Algol</i>	[al-ʁūl]	The ghoul
<i>Carafa</i>	[ʁarrāfa]	<i>Subject of the verb</i> to 'dip'
<i>Cassock</i>	[kazāʁand]	Padded jacket
<i>Garble</i>	[ʁarbala]	<i>From the verb</i> to 'sift'
<i>Ghoul</i>	[ʁūl]	Demon
<i>Ghoul</i>	[ʁūl]	Demon
<i>Realgar</i>	[rahdʁ] [al-ʁār]	The powder of the cave

<i>English Word</i>	<i>Arabic Word (IPA)</i>	<i>Arabic Word (meaning)</i>
<i>Algorithm</i>	[al-χuwārizmiy]	A man from 'Khiva'
<i>Almanac</i>	[al-manāχ]	The climate
<i>Caliph</i>	[χalifa]	Successor
<i>Carob</i>	[χarrüb]	<i>same meaning</i>
<i>Khamsin</i>	[χamsin]	Fifty (days)
<i>Magazine</i>	[maχazin]	Storehouses
<i>Mask</i>	[masχara]	<i>From the verb to 'ridicule'</i>
<i>Mohair</i>	[muχayyar]	Best choice (goat-hair cloth)
<i>Roc</i>	[ruχ]	Bird
<i>Sheikh</i>	[ʃayχ]	Old (wise) man
<i>Tarragon</i>	[tarχūn]	<i>same meaning</i>

Table 8. The /q/ Arabic Sound Adaptation in English

Arabic Sound	/q/	voiceless	velar	plosive
English	/k/	voiceless	velar	plosive
Sound				

The Arabic sound /q/ and the English /k/ are homogenous to a high extent. Systematically, whenever /q/ figures in one of the Arabic loanwords in English, it is replaced by /k/. To mention few examples, consider the following list:

<i>English Word</i>	<i>Arabic Word (IPA)</i>	<i>Arabic Word (meaning)</i>
<i>Alcove</i>	[al-qubba]	Vault
<i>Alembic</i>	[al-ʔimbiq]	The still
<i>Alkali</i>	[al-qāli]	<i>Subject of the verb 'fry' or 'roast'</i>
<i>Borax</i>	[bawraq]	<i>same meaning</i>
<i>Caliber</i>	[qālab]	mold, last
<i>Candy</i>	[qandi]	Cane sugar
<i>Carmine</i>	[qirmazī]	Crimson
<i>Coffee</i>	[qahwa]	<i>same meaning</i>

<i>Koran</i>	[qurʔān]	Recitation
<i>Macramé</i>	[miqrama]	Striped cloth
<i>Mancala</i>	[minqala]	<i>From the verb to 'move'</i>
<i>Saluki</i>	[salūqiyy]	Name of a dog race
<i>Sequin</i>	[sikka]	Coin-making

Table 9. The /ṣ/ Arabic Sound Adaptation in English

Arabic Sound	/ṣ/	Voiceless	alveolar	fricative (velarized)
English Sound	/s/	Voiceless	alveolar	fricative

As mentioned earlier, velarization is another phonetic feature which characterizes the Arabic phonology in comparison with English. It is an additional articulation in producing some sounds involving the movement of the back of the tongue toward the velum. The analysis of the study corpus revealed that phonemes with such a feature are replaced with their non-velarized equivalents. Table 9 illustrates the case of the sound /ṣ/ which is replaced by /s/. Here are some examples:

<i>English Word</i>	<i>Arabic Word (IPA)</i>	<i>Arabic Word (meaning)</i>
<i>Arsenal</i>	[dār] [aʃinaʔa]	The house of making (factory)
<i>Cipher</i>	[ʃifr]	empty, nothing
<i>Muslin</i>	[mawʃil]	Something from Mosul (in Iraq)
<i>Sahara</i>	[ʃahrāʔ]	Desert
<i>Sofa</i>	[ʃūfa]	Raised dais with cushions (wool)

Table 10. The /ʕ/ Arabic Sound Adaptation in English

Arabic Sound	/ʕ/	voiced	pharyngeal	fricative
English Sound	/æ/	vowel	(initial)	

	/ɑ:/	vowel	(middle)	
	/l/	voiced	lateral	alveolar

Finally, table 10 addresses the pharyngeal fricative /ʕ/ which is another sound existing only in Arabic. As illustrated in this table, the main characteristic of this sound is that it is very similar to the vowels /æ/ and /ɑ/ in terms of place of articulation (pharyngeal). Therefore, in words like 'Arab', 'amber' and 'attar', this sound is replaced by one of these vowels. In few exceptional cases, /ʕ/ is replaced by /l/ when occurring in final positions of loanwords to make speech easier like in 'gerbil'. The latter feature is labeled 'the law of easiness and facilitation' and will be tackled in the following sections. Consider these examples:

<i>English Word</i>	<i>Arabic Word (IPA)</i>	<i>Arabic Word (meaning)</i>
<i>Amber</i>	[ʕanbar]	Ambergris
<i>Gerbil</i>	[dʒarbuʕ]	<i>same meaning</i>
<i>Lute</i>	[al-ʕūd]	<i>same meaning</i>
<i>Mozarabic</i>	[mustaʕrib]	Would-be Arab
<i>Saffron</i>	[zaʕfarān]	<i>same meaning</i>
<i>Tabby</i>	[al-ʕattābiya]	A neighborhood in Baghdad

However, it is not always easily recognized how changes occur in some loanwords. In some cases, words were not borrowed directly from Arabic to English, but after being used in other speech varieties. For instance, the Arabic word '*al-khurshuf*' was borrowed and adapted in Spanish before again being borrowed in Italian then English to become 'artichoke' after many steps of phonological modifications. Words following these indirect routes of borrowing notice phonological changes in each language and each era before arriving to English. This is why these modifications cannot be traced without following the etymological life of each loanword. Here are the main examples of indirect routes of Arabic-English borrowing; each table mentions one English term with all the

languages gone through till arriving to the Arabic original word. Also, dates of borrowing are mentioned according to the estimations of www.etymoline.com.

English Word	Borrowing Route	Original Arabic Pronunciation
Artichoke	1530's	[al-ḫurʃuf]
	from <i>articiocco</i> (Nothern Italian Variant)	
	from <i>articioffo</i> (Italian)	
	from <i>alcarchofa</i> (Old Spanish)	
	from <i>al-khurshuf</i> (Arabic)	

English Word	Borrowing Route	Original Arabic Pronunciation
Crimson	Early 15 th century	[qirmizi]
	from <i>cramoisin</i> (French)	
	from <i>carmesi, cremesi</i> (Old Italian)	
	from <i>qirmizi</i> (Arabic)	

English Word	Borrowing Route	Original Arabic Pronunciation
Popinjay	Late 13 th century/Early 14 th century	[babbaʔaʔ]
	from <i>papejaye</i> (Old English)	
	from <i>papegai</i> (Old French)	
	from <i>papagayo</i> (Spanish)	
	from <i>babagha</i> (Arabic)	

English Word	Borrowing Route	Original Arabic Pronunciation
Ream	Mid-14 th century	[rizma]
	from <i>reyme</i> (Old French); at the same time the word was borrowed in Dutch as <i>riem</i> .	
	from <i>resma</i> (Spanish)	
	from <i>rizmah</i> (Arabic)	

English Word	Borrowing Route	Original Arabic Pronunciation
Sirocco	1610's	[ʃarqiy]
	From <i>sirocco</i> (Italian)	
	From <i>shoruq</i> (Dialectal Arabic, mainly Lybian)	
	From <i>sharqi</i> (Arabic)	
English Word	Borrowing Route	Original Arabic Pronunciation
Spinach	Late 13 th century	[isbānāʃ]
	from <i>espinache</i> (Old French)	
	from <i>espinac</i> (Catalan)	
	from <i>isbanakh</i> (Arabic)	

4.2 Other Reasons of Adaptation

Replacing phonological gaps by their nearest homorganic counterparts in the target language is the primary rationale behind the adaptation and deformation of loanwords. However, studies show that there are other reasons leading to language change (Ross, 1991). During their development, languages always tend to go towards the easiest sounds and forms. Speakers try to replace heavy-to-produce sounds by others that demand fewer efforts to be articulated. This is what al-Bahnasawi (2004: 128) calls 'the law of easiness and facilitation'. Many changes are made by speakers on their languages to make them easier, by means of several measures which also touch loanwords in these languages:

4.2.1 Dropping of Consonants

Consonant dropping, especially at the end of words, is one of the measures exercised by speakers to make their speech varieties less effort-demanding languages. This feature is common to all languages; however, it is restricted by the semantic limits of the word. In other terms, the loss of consonants stops at a level when if another sound will be dropped, the meaning of the word will be changed or make a nuance with another one. In our case study, there are some cases in which Arabic loanwords has lost sound/s (or sometimes even words) when being adapted in English. For instance, the word 'admiral' has lost a whole word at the end, since it was originally in Arabic '*amir al-bah'r*'; The

same process happened to the word *'maskh'ara'* which had lost its final syllable to become *'mask'*.

4.2.2 Sound Cluster

For the sake of achieving the same purpose, speakers try to evade sound clusters as far as possible. They are either replaced by other simple sounds like the word *'musta'rib'*, in which the cluster /s + t + a/ is replaced by one sound /z/ to become *'Mozarabic'*; or omitted directly such as the /s/ in *'al-fasfasi'* which is deleted in two positions to become *'alfalfa'*.

4.2.3 Climatic Conditions

Many linguists claim that there are extra-linguistic aspects leading to language change, not least loanword change and adaptation in the host language. The most important of these aspects is the diverse climates where different speech communities live. For instance, there is a suggestion that consonant production changes from speakers living in low altitudes to others in high altitudes. This geographical variable is said to influence the intensity of exhalation: the higher the residence is, the more stimulated the lungs are. Therefore, *"the connection with geographical or climatic conditions is clear"*, as Aitchison (2004: 145) asserted.

Likewise, Arabic loanwords adopted in English were changed, some parts, under the influence of the climate conditions. It is axiomatic that the climate in the environment where the Arab natives live (North Africa, the Arabian Peninsula, and even Andalusia) is much hotter than Europe. The question which arises at this level of inquiry is how temperature variance may influence loanwords adoption? The author hypothesizes the following answer: On the one hand, the learner of Arabic can easily infer, after a short observation in a dictionary, that most of the Arabic lexical items finish with a phoneme similar to /æ/, which is called *'fath'a'*. As this vowel sound is characterized by a neutral shape of the lips, it enables speakers to recover some air at the end of *'each'* word. This feature is very helpful in speech, knowing that talking in warm areas (as the ones mentioned above) demands greater amount of oxygen. On the other hand, speech communities in most of Europe do not face such temperature characteristic in their environment. This is why many Arabic words which were *'transported'* to Europe lost

their final 'fath'a', since this vowel sound became of no purpose, and sometimes even identified a source of heaviness in articulation. In addition, dropping this final vowel made the loanwords seem more adapted to the morphology of the recipient language. To cite only few examples, 'alchemy', 'caliph' and 'jar' lost their final 'fath'a' when borrowed in English.

5. CONCLUSION

In a nutshell, linguistic borrowing is the act of 'adopting' from other languages to define new objects and concepts, and sometimes as a part of the modernization of the corpus of the host language. In addition, the borrowing process has many characteristics which are common to all languages: in terms of elements borrowed, their behavior in the recipient language, the status given to them by native speakers, and the factors influencing loanwords.

In this research, the spotlight was made on the modifications (mainly the phonological ones) that loanwords pass through in the host language while trying to find causation to these alterations. However, this process does not develop in an arbitrary way; it is rather governed by a set of rules which are most of the time unheeded by the speech community. In other words, the changes made on loanwords are rather a natural process in which the human brain provides solutions in speech. As a general rule, strange sounds are replaced by their nearest homorganic counterparts; if impossible, they are substituted by others produced in the same manner of articulation.

Likewise, English words of Arabic origin went under the same measures as in all other cases of borrowing. Different factors had a hand in making this change an obligation such as the absence of many sounds in the English phonology, and the difficulty to pronounce some sounds in their original shape. After, these 'Anglicized' words have been morphologically naturalized, and systematically may undergo a process of derivation in the line with English derivational patterns and inflectional affixes.

6. Glossary

English Word	Arabic Word (IPA)	Arabic Word (meaning)
<i>A</i>		
<i>Admiral</i>	[ʔamīr] [al-baħr]	The prince (ruler) of the sea
<i>Adobe</i>	[aʔūba]	The brick
<i>Albacore</i>	[al-bikr]	The young camel

<i>Alchemy</i>	[al-kīmiyāʔ]	=
<i>Alcohol</i>	[al-kuḥūl]	=
<i>Alcove</i>	[al-qubba]	Vault
<i>Alembic</i>	[al-ʔimbiq]	The still
<i>Alfalfa</i>	[al-faʃfaʃa]	Fodder
<i>Algebra</i>	[al-dʒabr]	Reintegration (reunite)
<i>Algol</i>	[al-ʔūl]	The ghoul
<i>Algorithm</i>	[al-χuwārizmiy]	A man from 'Khiva'
<i>Alkali</i>	[al-qāli]	<i>Subject of the verb 'fry' or 'roast'</i>
<i>Almagest</i>	[al-mādʒisti]	=
<i>Almanac</i>	[al-manāχ]	The climate
<i>Amber</i>	[ʃanbar]	Ambergris
<i>Antimony</i>	[al-ʔiθmid]	Antimony trisulphide
<i>Apricot</i>	[al-barquq]	=
<i>Arsenal</i>	[dār] [aʃināʃa]	The house of making (factory)
<i>Artichoke</i>	[al-χurʔūf]	=
<i>Assassin</i>	[ħaʃʃāʃin]	Hashish eaters
<i>Attar</i>	[ʃaṭṭara]	Aroma
<i>Azimuth</i>	[asūmūt]	The paths
<i>Azure</i>	[al-āzuward]	Lapis lazuli
B		
<i>Berdache</i>	[bardadʒ]	Slave
<i>Betelgeuse</i>	[bayt] [al-dʒawzaʔ]	The shoulder of the giant
<i>Bezoar</i>	[bāzahr]	=
<i>Bint (slang UK)</i>	[bint]	Daughter
<i>Borax</i>	[bawraq]	=
<i>Burka</i>	[burquʃ]	=
C		
<i>Caliber</i>	[qālab]	mold, last
<i>Calico</i>	[qāliqūt]	Calicut (in India)
<i>Caliph</i>	[χalifa]	Successor
<i>Camise</i>	[qamiʃ]	Shirt
<i>Camphor</i>	[kāfūr]	=
<i>Candy</i>	[qandi]	Cane sugar

<i>Carat</i>	[qīrāt]	Small weight
<i>Caraway</i>	[karāwyā]	=
<i>Carafe</i>	[ʔarrafa]	<i>Subject of the verb to 'dip'</i>
<i>Carmine</i>	[qirmazi]	Crimson
<i>Carob</i>	[χarrüb]	=
<i>Cassock</i>	[kazāʔand]	Padded jacket
<i>Check</i>	[ʔäh]	King
<i>Checkmate</i>	[ʔäh] [māt]	The king is dead
<i>Chemistry</i>	See alchemy	
<i>Chess</i>	Plural of check	
<i>Cipher</i>	[šifr]	empty, nothing
<i>Civet</i>	[zabād]	=
<i>Coffee</i>	[qahwa]	=
<i>Copt</i>	[qibt]	=
<i>Cork</i>	[qurq]	=
<i>Cotton</i>	[quṭn]	=
<i>Couscous</i>	[kuskus]	<i>From the verb to 'pound', 'bruise'</i>
<i>Crimson</i>	[qirmazi]	The insect providing the dye
D		
<i>Deneb</i>	[ðanab]	The tail of the hen
<i>Dhow</i>	[ðāw]	Light
<i>Dinar</i>	[dīnār]	=
<i>Dirham</i>	[dirham]	=
<i>Dragoman</i>	[turduʔumān]	Interpreter
<i>Drub</i>	[ðarb]	<i>From the verb to 'beat'</i>
<i>Dura mater</i>	[al-ʔumm] [al-ʔalīðā]	The hard mother
E		
<i>Efreet (Afreet)</i>	[ʔifrit]	Monster
<i>El Cid</i>	[asayyid]	The lord
<i>Elixir</i>	[al-ʔiksīr]	Philosopher's stone
<i>Emir</i>	[ʔamīr]	prince, commander
F		
<i>Fakir</i>	[faqīr]	Poor
<i>Fardel (archaic)</i>	[farda]	load
<i>Fatwa</i>	[fatwā]	Legal decision

<i>Fedayeen</i>	[fidāʔijīn]	Commandos
<i>Falafel</i>	[falāfil]	=
<i>Fellah</i>	[fallāḥ]	husbandman, farmer
<i>Felucca</i>	[falūka]	Ship
<i>Fomalhaut</i>	[fam] [al-ḥūt]	The mouth of the ship
G		
<i>Garble</i>	[ʔarbala]	<i>From the verb to 'sift'</i>
<i>Gazelle</i>	[ʔazāl]	=
<i>Genie</i>	[dʒīnniyy]	Spirit
<i>Gerbil</i>	[dʒārbūʔ]	=
<i>Ghoul</i>	[ʔūl]	Demon
<i>Giraffe</i>	[zarāfa]	=
H		
<i>Hadith</i>	[ḥadiḥ]	Tradition
<i>Haj</i>	[ḥadʒ]	Pilgrimage
<i>Halal</i>	[ḥalāl]	Lawful
<i>Halvah</i>	[ḥalwa]	Sweet
<i>Harem</i>	[ḥarim]	Prohibited
<i>Hashish</i>	[ḥaʃiʃ]	dried herbs, hemp
<i>Hazard</i>	[az-zahr]	To play at dice
<i>Hegira</i>	[hidʒra]	Departure
<i>Henna</i>	[ḥinnāʔ]	=
<i>Hookah</i>	[huqqa]	Water bottle
<i>Houri</i>	[ḥūriyya]	Someone with eyes like gazelles
I		
<i>Imam</i>	[ʔimām]	leader, preacher
<i>Islam</i>	[ʔislām]	Submission
J		
<i>Jar</i>	[dʒarra]	Large earthen vase
<i>Jasmine</i>	[jāsamin]	=
<i>Jinn</i>	See genie	
<i>Julep</i>	[dʒulab]	Rose water
K		
<i>Kaaba</i>	[kaʔba]	Square house

<i>Kabob</i>	[kabāb]	=
<i>Kaffir</i>	[kāfir]	infidel, unbeliever
<i>Keffiyeh</i>	[küfiyya]	From Kufa (in Iraq)
<i>Khamsin</i>	[χamsīn]	Fifty (days)
<i>Kismet</i>	[qīsmat]	portion, destiny
<i>Kohl</i>	[kuḥl]	stain, paint
<i>Koran</i>	[qurʔān]	Recitation
L		
<i>Lilac</i>	[līlak]	=
<i>Lemon</i>	[laymūn]	=
<i>Lime</i>	[līma]	Citrus fruit
<i>Loofah</i>	[lūfa]	A plant name
<i>Lute</i>	[al-ʔūd]	=
M		
<i>Macramé</i>	[miqrama]	Striped cloth
<i>Magazine</i>	[maχazin]	Storehouses
<i>Mahdi</i>	[mahdī]	Arigh guided
<i>Majlis</i>	[madʒlis]	Council
<i>Mancala</i>	[minqala]	<i>From the verb to 'move'</i>
<i>Marzipan</i>	[mawθabān]	A coin featuring a seated figure
<i>Mask</i>	[masχara]	<i>From the verb to 'ridicule'</i>
<i>Mattress</i>	[maṭraḥ]	mat, cushion
<i>Minaret</i>	[manāra]	<i>From the verb to 'enlighten', 'fire'</i>
<i>Mohair</i>	[muχayyar]	Best choice (goat-hair cloth)
<i>Monsoon</i>	[mawsim]	Season
<i>Mosque</i>	[masdʒīd]	<i>From the verb to 'worship'</i>
<i>Mozarabic</i>	[mustaʔrib]	Would-be Arab
<i>Muezzin</i>	[muʔaḏḏīn]	<i>From the verb to 'proclaim'</i>
<i>Mufti</i>	[mufti]	The one who gives Fatwa
<i>Mujahedeen</i>	[mudʒahidīn]	Fighters
<i>Mullah</i>	[mawlā]	Master
<i>Mummy</i>	[mūmiyāʔ]	Embalmed body
<i>Muslim</i>	[muslim]	Submitter
<i>Muslin</i>	[mawʃil]	Something from Mosul (in Iraq)
N		

<i>Nadir</i>	[naðīr]	<i>Opposite of the zenith'</i>
<i>Natron</i>	[naṭrūn]	=
<i>Nizam</i>	[niðām]	Government
O		
<i>Orange</i>	[nārandʒ]	=
<i>Ottoman</i>	[ʔuθmān]	Proper name (Osman)
P		
<i>Pia mater</i>	[al-ʔumm] [ar-raqīqa]	Tender mother
<i>Popinjay</i>	[babbaʔāʔ]	parrot
<i>Primum mobile</i>	[al-muḥarrik] [al-ʔawwal]	The first mover
R		
<i>Racket</i>	[rāḥat] [al-yad]	Palm of the hand
<i>Ramadan</i>	[ramaḍān]	The hot month
<i>Realgar</i>	[rahdʒ] [al-ʔār]	The powder of the cave
<i>Ream</i>	[rizma]	Bundle
<i>Rebec</i>	[rabāb]	=
<i>Rigel</i>	[ridʒ]	Foot (of Orion)
<i>Roc</i>	[ruʒ]	Bird
<i>Rook</i>	See roc	
<i>Rubaiyat</i>	[rubāʔiyyat]	Quatrain
S		
<i>Safari</i>	[safar]	Journey
<i>Saffron</i>	[zaʔfarān]	=
<i>Sahara</i>	[šaḥrāʔ]	Desert
<i>Sahib</i>	[šaḥīb]	companion, friend
<i>Salaam</i>	[salām]	Peace (be upon you)
<i>Saluki</i>	[salūqiyy]	Name of a dog race
<i>Saracen</i>	[ʔarqiyyin]	Easterners
<i>Sash</i>	[ʔāʃ]	Muslin
<i>Satin</i>	[zājtūniyy]	From Zaytun (A city in China)
<i>Scarlet</i>	[siqilāt]	A cloth adorned with images
<i>Sequin</i>	[sikka]	Coin-making
<i>Sharia</i>	[ʔarīʔa]	Law
<i>Sheikh</i>	[ʔayʒ]	Old (wise) man

<i>Sherbet</i>	[ʃariba]	To drink
<i>Shrub</i>	[ʃurb]	Drinking
<i>Sine</i>	[dʒayb]	Chord of an arc
<i>Sirocco</i>	[ʃarqiyy]	East wind
<i>Sofa</i>	[ʃüfa]	Raised dais with cushions (wool)
<i>Souk</i>	[süq]	Marketplace
<i>Spinach</i>	[isfänäχ]	=
<i>Sugar</i>	[sukkar]	=
<i>Sultan</i>	[sulṭān]	Sovereign
<i>Sumac</i>	[sumāq]	=
<i>Syrup</i>	[ʃarāb]	Beverage
T		
<i>Tabbouleh</i>	[tabbūla]	=
<i>Tabby</i>	[al-ṣattabiya]	A neighborhood in Baghdad
<i>Tahini</i>	[ṭaḥīna]	<i>From the verb to 'crush'</i>
<i>Talisman</i>	[ṭilasm]	=
<i>Tamarind</i>	[tamr] [hindiyy]	Dates of India
<i>Tarboosh</i>	[ṭarbūʃ]	=
<i>Tare</i>	[ṭaraḥa]	<i>From the verb to 'reject'</i>
<i>Tariff</i>	[taṣrif]	Notification
<i>Tarragon</i>	[ṭarχün]	=
<i>Tell</i>	[tell]	Hillock
U		
<i>Ulema</i>		The learned ones
V		
<i>Vega</i>	[an-naṣr] [al-wāqi]	The falling vulture
<i>Vizier</i>	[wazīr]	porter, public servant
W		
<i>Wadi</i>	[wādi]	=
<i>Waqf</i>	[waqf]	Religious foundation
<i>Wisdom tooth</i>	[adrus] [al-ḥikma]	=
Z		
<i>Zenith</i>	[samt]	Path
<i>zero</i>	[ṣifr]	Empty

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