

**PHONEME CHANGES IN ENGLISH LOANWORDS FROM ARABIC
(A Study of Phoneme Change Patterns in Grimm's Language Model)**

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Abstraks

This article is part of a historical linguistic study on word absorption caused by cultural contact between two nations with different languages. Cultural contact causes language contact, language contact causes word absorption from other languages, and the absorption of words from other languages causes phonemic changes. What are the phonemic changes in English loanwords from Arabic? What is the pattern?

This article, which discusses "Phoneme Changes in English Loanwords from Arabic based on the Grimm Model of Phoneme Change Patterns", is an attempt to trace and find the existence of English Loanwords from Arabic along with their phoneme change patterns. The loanword data found were then analyzed using the theoretical framework of Grimm's Law model. From this analysis, the phoneme change patterns in Arabic loanwords in English can be found.

The method used in this study is comparative descriptive, by tracing, identifying, finding, verifying, classifying, and comparing English loanwords with their origins, namely Arabic, then analyzing them using the Grimm's Law model theoretical framework. The results of this analysis include the discovery of 50 phoneme change patterns in English loanwords from Arabic. The 50 patterns were then further classified to obtain 22 groups of phoneme change patterns. In terms of the form of change, these 22 change patterns can be classified into five forms of phoneme change. The forms of these change patterns are: 1). Phoneme replacement, 2). Phoneme deletion/elimination, 3). Phoneme addition, 4). Phoneme shift, and 5). Drastic and extreme changes in loanwords that are almost impossible to recognize as loanwords. There are various forms of phoneme change, namely reduction, erosion, monophthongization, syncope, lenition (phoneme deletion), strengthening or fortition, paragoge, and excrescence (phoneme addition), and phoneme shift such as metathesis, as well as extreme changes called metatypy.

Kata kunci: loanwords, phoneme changes, Grimm's law.

A. INTRODUCTION.

Every nation has its own culture, even in its simplest form. Culture is owned by a nation through continuous learning, resulting in a culture that continues to develop towards a more perfect direction. The dynamic nature of humans as cultured beings has encouraged them to constantly study and develop their culture, either by studying on their own or learning from other people or nations.

The cultures of people in the world differ from one another. However, we often find the same culture between one nation and another. The similarity of cultural elements in a nation with one cultural element in another occurs because of cultural contact, which causes the spread of culture (culture diffusion) from one region to another. This spread can occur in various ways, including through wandering, education, or trade.

One of the universal cultural elements in every society is language. Language as a means of communication often spreads from one place to another as humans spread. Through this process, we often find similarities in the language of a society or nation with the language of another society or nation. For example, we can find the word "cable" in English, which means "wire, rope", which has similarities with the Arabic word "حبل" read as "ḥablun /*ḥablun*/" or "ḥabl /*ḥabl*/" which means "cable" in English and "kabel" in Indonesian. There is also the word "canon /*kænən*/" in English, which is similar to the Arabic word "قانون", which reads as "qānūn /", which means "law" in English and "undang-undang" in Indonesian. There is also the word "earth /*ɜːrθ*/" in English, which is similar to the Arabic word "أرض" read as "arḍun /*ʔrdʕ*/", which means "earth" or "land" in English and "bumi" in Indonesian, and there are many other similar words. Some of these words are examples of the similarity of words in English with words in Arabic. The similarity is seen in the pronunciation and even in their meaning. This can indicate the possibility of the absorption of words in English from Arabic. This kind of thing would never have happened if there had been no cultural contact between the two nations, a process of influence, or a process of cultural spread.

Based on the examples above, the author is very interested and wants to explore and analyze further what loanwords in English come from Arabic. What are the patterns and models of phoneme changes or pronunciation? This will be the focus of the discussion in this paper. The discussion and analysis in this paper will be analyzed using the Grimm's Law approach. Grimm's law, which will be used in this discussion, is merely an analogy for identifying and classifying phoneme change patterns in English loanwords from Arabic, not for the purpose of comparing the history of Arabic-English development with Indo-European. Grimm's law is only used as a mechanical classification pattern to observe shifts in articulation points.

There are 3 (three) steps taken by the author in the discussion and analysis of phoneme changes in loanwords in English that come from Arabic: First, identifying vocabulary in English that may have similarities with Arabic. This is done by looking at and exploring vocabulary in various English dictionaries and comparing it with vocabulary in Arabic dictionaries. Second, the researcher recorded and classified

English loanwords from Arabic as a table. Then, vocabulary that has similarities with Arabic is identified and classified. Third, analyzing the similarity of sound or pronunciation between loanwords in English that come from Arabic based on Grimm's law, which is usually called "Grimm's Law" (Booefield, 1957: 14). With Grimm's law, a systematic exposition of phonemic correspondence between one nation's language and another's language can be presented. This analysis method is used to support the validity of the similarity of loanwords and their origins between the two languages.

B. LOANWORDS, PHONEME CHANGE, GRIMM'S LAW, AND PHONEME CHANGE PATTERNS

1. LOANWORDS, PHONEME CHANGE, AND GRIMM'S LAW

a. Loanwords or Language Borrowings and Influencing Factors.

The term "loanword" consists of two words, "*loan*" which means "to borrow" and "*word*" which means "a single unit of language which means something and can be spoken or written" (Sally Wehmeier, Colin Mcintosh, Joanna Turnbull, and Michael Ashby (Eds.), 2005: 901, 1.758). The term "loanword" has several similarities in meaning with the terms "borrowing language", "recipient language", "donor language", "transfer language", "adoption", and "copying" (Darquennes, Salmons, and Vandenbussche, 2019: 13), in English, and "iqtirād", "ad-dakhīl", "mu'arrab", in Arabic (Bensola, 2015: 39, Pei, 1998: 156). There are several definitions of loanwords that linguists have put forward. Lyle Campbell states that loanwords are lexical items or words "borrowed" from another language. Words that were initially not part of the vocabulary of the recipient language but were adopted from several other languages and became part of the vocabulary of the borrowing language (Campbell, 1998: 58). Meanwhile, according to Christine Haunz, loanwords are words from one language, called the source (or donor) language, which enters the borrowing (or recipient) language. This often occurs through the intermediary of bilingual speakers. In the process of entering and becoming the borrowing language, the phonetic, phonemic, phonotactic or prosodic characteristics of these words change in most cases (Haunz, 2007: 3). And generally, the "borrowed" items are not returned, nor is there any intention from the borrowing language to return them at the time of borrowing. In addition, the donor language does not feel the loss of the loanwords (Hock & Winter, 2009: 241).

In linguistics, "borrowing" describes the process by which "one language replicates linguistic features from another, either in whole or in part". Borrowing or absorbing words from another language is common in every language. Campbell, Thomason, and Kaufman assume that as far as strict linguistic possibilities go, any linguistic feature can be transferred from any language to any other language. Thus, they assume that borrowing from other languages is something universal. The principle of borrowing like this is a general tendency in every language (Chambers & Schilling, 2013: 514).

Historically, all languages borrow words from each other; no nation has borrowed from other nations, and no words are "pure". Some languages borrow so

many words from other languages that little original word material is left. Languages are used together so that they become similar, and some languages are even direct crosses between one language and another (Whorter, 2004: 1). Therefore, it is said that "A pure language is a poor language" (al-Qinai, 2001: 235).

Since ancient times, one nation has interacted with another nation. Moreover, nations that are close to each other constantly interact. Interaction between nations, both close and far away, has encouraged the borrowing of words by one nation from another nation. For example, the Romans borrowed their language from the Greeks, and the Greeks borrowed from the Phoenicians. So, where did the Phoenicians borrow their language from? The data found that their language and writing were influenced by previous language and writing systems such as those used by the Cretan, Assyrian, and Egyptian civilizations (Ege, 1921: 5-6). Arabic also has many loanwords that come from other languages. This happened because, over time, the Arab tribes – in their social, economic, and political lives – interacted with other nations such as Egypt, Babylon, Persia, Greece, and Rome (Syair, 1988: 3). Therefore, Arabic absorbed vocabulary from Hebrew, Aramaic, Qibti, Greek, Persian, Roman, Sanskrit, Latin, and others (Belasi, 2001: 67-96).

The Spanish borrowed many words from Arabic during the period when the Moors dominated Spain (901-1492). Many Arabic loans in Spanish include originally Arabic definite articles such as "*al-*" but are monomorphemic in Spanish. Some examples are: "*albanil*", which means "stonemason" comes from the Arabic "bannā", "*albaricoque*" which means "apricot" comes from the Arabic "barqūq", "*albondiga*" which means "meatball" comes from Arabic "bundaqa" English "ball", "*alcalde*" which means "mayor" comes from Arabic "qāḍi", English "judge", "*alcoba*" meaning "bedroom", or "small room" comes from Arabic "qobbah", "*alcohol*" meaning "kohl" comes from Arabic "kuḥl", "kohl" (Campbell, 1998: 66). English also borrows from other languages, such as "*rouge*" (from French), "*macho*" (from Spanish), "*yen craving*" (from Chinese), or "*schwa*" (from Hebrew via German) (Hock & Winter, 2009: 241). English words from Arabic include: "*saffron, mattress, admiral, hazard, cotton, henna, camphor, alembic, alchemy, and café*" (Hendrickson, 2008: 36).

Arabic is an international language that has long been known as the leading supplier of words to Swahili, Romance languages, Persian, Turkish, Indian languages such as Hindi and Urdu, and English. Tabulation of such contact data worldwide has placed Arabic as the leading supplier of words to English, among other languages. The Moors, who ruled the Iberian Peninsula for seven centuries, influenced the Spanish and Portuguese lexicons, comparable to Middle French's influence on English (Cannon & Duinkerken, 2008: 36-37). English loanwords from Arabic are entered through Spanish or French (Anderson, 2012: 213), according to Mary. S. Serjeantson stated that it was from Arabic that English borrowed the most loanwords from the East (Serjeantson, 1936: 213).

Then, what influences and motivates the absorption of words? The motivation to borrow a language can be defined as factors that encourage speakers to use linguistic material from one language in an interaction setting that is generally associated with

another language (Adamou & Matras, 2021: 242-243). Among the things that influence and motivate the absorption of words are: 1). Self-identification due to cultural contact with a culture that is considered higher (as-Sibā'i, 1999: 86-90). 2). Innovation is created by creating new words by borrowing words from other languages and modifying them (Campbell & Mixco, 2007: 105). 3) Power and prestige influence society to follow and use the language of the ruler, who is considered prestigious. 4). The need to designate something new (Grant, 2019: 6-7, Perier, 1708: 1, Guba, 2016: 31).

Borrowing words from other languages is a common phenomenon in almost all languages. Borrowing words occurs because of cultural and language contact between two different cultures and languages, which then influences the occurrence of borrowing words or languages. Borrowed words are sometimes pure without change, but most loanwords experience changes from the original or source language from which they are borrowed.

Humans do have a natural tendency to travel. This has aroused their curiosity and excited them to overcome the most significant difficulties and prepare themselves for all kinds of difficulties and dangers (Perier, 1708: 1), including language difficulties. This natural tendency is part of the various aspects that influence cultural contact between one nation and another. The factors influencing cultural contact between various nations are: 1). Migration, 2). Trade, 3). Imperialism, Colonialism, and War. 4). Preaching and the spread of religion, 5). Education (Musthofa, 2005: 19-25, Chambers & Schilling, 2013: 502-503).

b. Phoneme Changes

The most widely studied topic in historical linguistics is sound change. Over time, the sounds of a language tend to change. The study of sound change has produced significant results and important assumptions underlying the historical linguistic method, especially the comparative method. The study of sound change is significant in the study of historical linguistics in general. This study plays a significant role in the comparative method. Therefore, it is also essential in linguistic reconstruction, especially in detecting loanwords, their origins, and their sources, and determining whether languages are related (Campbell, 1998: 16, Campbell & Mixco, 2007: 109-110). The relationship of similarity between a nation's language and a language in another nation shows the existence of a process of interaction between the two nations, which results in a process of mutual influence between the two nations. In turn, this results in the emergence of borrowing words from another nation that influences it.

In linguistic studies, the term "borrow" describes the process in which one language replicates linguistic features from another, either in whole or in part. In other words, perhaps it is more appropriate to say that this is the idea of the influence of one nation on another nation in the form of language borrowing. However, the term "borrowing" a language from another nation's language like this has been deeply rooted in linguistics as a common term to describe this process since the nineteenth century (Durkin, 2014: 3). In general, a language borrowed by a nation from another nation's language will experience modifications and changes in phonemes that are adjusted to

the sound patterns of the borrowing nation. This change occurs generally and uniformly when the borrowed language's phonetic state changes. This kind of sound change is more of a concern to linguists in historical linguistic studies. Indeed, they consider this very important as a method and theory in studying language change. Historical linguistics's most important basic assumption is that sound change is regular. If a sound can change arbitrarily and unpredictably, then the change will not be regular. However, in many cases, sound change is regular (Campbell, 1998: 17).

Sound change is a change in the way speakers produce phonemes. Therefore, this will affect the pronunciation of the phoneme at each occurrence, regardless of the nature of the particular linguistic form in which the phoneme is pronounced. From here, an assumption can be drawn that phonemes can change (Labov, 2010: 260). Bloomfield stated that the sound change is in the phoneme, not in the word (Labov, 2010: 367-368). Sound changes in loanwords can be influenced by cognitive factors as well as cultural factors. Cognitive factors are related to the action or ability of a person to know, including sensation, perception, conception, and others. In contrast, cultural factors are related to phoneme changes in broader social patterns and systems, independent of face-to-face interaction (Labov, 2010: 2-4).

c. Grimm's Law

This article examines loanwords, especially Arabic loanwords in English, which are part of the study of historical linguistics. The most widely studied field of historical linguistics is sound change. An understanding of sound change is essential for historical linguistics in general. An important assumption underlying the study of historical linguistics is that language sounds tend to change over time. (Campbell, 1998: 16). One form of language sound change can occur in absorbing words from other languages. One theory that can be used to study sound change is Grimm's law.

Grimm's law is one of the theories that can be used to study the changes in sounds or phonemes from borrowed languages. Grimm's law is a set of laws about sound changes in loanwords between languages of various nations with cultural contact. This is a fundamental law in the study of historical linguistics. This law is closely involved in history as a comparative method and hypothesis of the regularity of phoneme changes in loanwords. Grimm's law includes three interrelated changes in the series of stops from Proto-Indo-European to Proto-Germanic as follows:

1. Phonemes pronounced by voiceless stops, namely p, t, k, each change into phonemes pronounced by fricative or sighing (fricative), namely f, ø, h.
2. Phonemes pronounced by voiced stops, namely b, d, g, each change into phonemes pronounced by voiceless stops, namely p, t, k.
3. Phonemes that are pronounced by stopping voiced aspirated stops, namely: bh, dh, gh, each change into phonemes that are pronounced by stopping plain voiced stops, namely: b, d, g (Campbell, 1998: 46).

Jacob Grimm's thoughts on the pattern of phoneme or sound changes in loanwords, later known as Grimm's law, were not the first thoughts. Previously, there was a linguist who tried to formulate and describe the sound shift in loanwords, namely Dane Rasmus Rask, in his essay in 1818 (Luraghi & Bubenik, 2010: 2). However, the

famous thought related to phoneme changes in loanwords is Jacob Grimm's thought. This is because Grimm could explain a more comprehensive pattern of phoneme changes compared to what was put forward by Dane Rasmus Rask. An overview of Grimm's law (Campbell, 1998: 47) can be seen in the following table:

Table 1. Phonemic Changes According to Grimm's Law

Phoneme Changes	Spain	France	English
p > f	<u>p</u> ie	<u>p</u> ied (Old French pie)	<u>f</u> oot
	<u>p</u> adre	<u>p</u> ere	<u>f</u> ather
	<u>p</u> or	<u>p</u> er	<u>f</u> or
t > θ	<u>t</u> res	<u>t</u> rois	<u>t</u> hree
	<u>t</u> u	<u>t</u> u	thou
k > h*)	<u>c</u> an	<u>c</u> hien (<kani-)	<u>h</u> ound (< hūnd)
	<u>c</u> iento	<u>c</u> ien (<kent-)	<u>h</u> undred
	<u>c</u> orazon	<u>c</u> reur	<u>h</u> ear
b > p	[Note: *b was rare in Proto-Indo-European; some say it was missing]		
d > t	<u>d</u> iente	<u>d</u> ent	<u>t</u> ooth (tanø)
	<u>d</u> os	<u>d</u> eux	<u>t</u> wo
g > k*)	-	<u>g</u> enou	<u>k</u> nee
	<u>g</u> rano	<u>g</u> rain	<u>c</u> orn
Phoneme Changes	Sanskrit	Latin	English
bh > b	<u>b</u> hrātar	<u>f</u> rater	<u>b</u> rother
	<u>b</u> hara-	<u>f</u> er- (f<*bh)	<u>b</u> ear
dh > d	<u>d</u> ha-	<u>F</u> acere (f < dh)	<u>d</u> o, <u>d</u> id, <u>d</u> eed
gh > g	<u>h</u> amsa (<*gh)	(<u>h</u>)anser	<u>g</u> oose

The table above illustrates Grimm's Law phoneme changes in English, Spanish, and French. From the table above, it is clear how phoneme changes occur in loanwords. However, the sound changes in the table above are not a pattern of phoneme sound changes that describe sound changes in loanwords in English that come from Arabic. However, this model will be applied to sound changes in English loanwords that come from Arabic.

In linguistic studies, sound or phoneme changes in loanwords can be in the form of merging, separating, and shifting phoneme chains (Labov, 2010: 367). Sound changes can be grouped into several categories, including assimilation, vowel modification, neutralization, zeroization, metathesis, diphthongization, monophthongization, and others (Lacy, 2007: 19). According to Campbell, these phoneme changes can be: 1). Phoneme replacement, 2). Phoneme deletion, 3). Addition of phonemes, and 4). Phoneme shift (Campbell, 1998: 16-56). The discussion of sound or phoneme changes in Arabic loanwords into English in this article will be discussed in the following section.

2. ARABIC LOANWORDS IN ENGLISH

No language is not in contact with other languages. Every language is related to other languages. Moreover, every language absorbs vocabulary from other languages. Arabic absorbs vocabulary from Hebrew, Aramaic, Qibti, Greek, Persian, Romance, Sanskrit, Latin, and others (Belasi, 2001: 67-96). English absorbs vocabulary from Latin, Greek, Spanish, and Arabic. English loanwords from Arabic enter through Spanish or French (Anderson, 2012: 213).

Experts have many opinions regarding how much Arabic loanword vocabulary is in English. In the dictionary of English words and phrases written by C. A. M. Fennell (1892) entitled *The Stanford Dictionary of Anglicised Words and Phrases*, it is stated in its tabulation that Arabic is the seventh supplier of loanwords to English, with 225 words that can be proven. The highest suppliers of loanwords are Latin with 3,797 items, French with 2,617 words, Italian with 1,199 words, Spanish with 716 words, Greek with 495 words, and Hindu with 336 words (Fennel, 1892: xi, Cannon & Duinkerken, 2008: 37). Meanwhile, according to Garland H. Cannon and Alan S. Kaye, the total number of Arabic loanwords in English is 2,356 words, consisting of 35.2% in the field of Science, 16% in the field of Social Sciences, and 4.7% in the field of Arts. In some fields of Science that appear in the most significant categories: Botany 11.4%, Islam 9.9%, Clothing 5.8%, Chemistry 5.1%, Astronomy, 4.5%, Linguistics, 4.2%, Geography 4%, politics 3.9%, and military 3.6% (Cannon & Kaye, 1994: 91).

After the author searches for the existence of Arabic loanwords in English in various dictionaries, books, articles, and related data on the internet, the author can find various sources among the loanwords in the following table, along with their respective numbers.

Table 2. Data Sources for English Loanwords from Arabic.

No	Book/Dictionary/Article	Author	Total
[1]	Syamsul 'Arab Taṣṭī' 'ala al-Garb: Aṣaru al-Ḥaḍārah al-Islāmiyyah fī Aurūbah (Hunke, 1993: 552-559)	Zigrid Hunke (Fārūq Baiḍūn dan Kamāl Dasuqi (Translators)	255
[2]	Kalimatun Injlīziyyah Ma'khūzatun min al-'Arabiyyah wa al-Mu'arrabah (al-Ḥārīsiy, 2012: 7-61)	Fahd bin 'Auḍ al-Ḥārīsiy	595
[3]	The Facts on File Encyclopedia of Word and Phrase Origins (Hendrickson, 2008: 36)	Robert Hendrickson	54
[4]	List of English Words of Arabic Origin (Wikipedia, 2022, <i>List of English Words of Arabic Origin</i>)	Tim Wikipedia Free Encyclopedia	142
[5]	Oriental Gems in the English Crown: English Borrowings from Arabic (Al-Johani, 1990: 53-90)	Maneh Al-Johani	452
[6]	Dorlands Illustrated Medical Dictionary (Anderson, 2012: 240,	Douglas M. Anderson	9

No	Book/Dictionary/Article	Author	Total
	382, 441, 605, 605, 1096, 1229, 1231, 1858)		
[7]	Avicenna's Medicine (Ahsab, Amri & Micozzi, 2013: 435-466)	Mones Abu-Ahsab, Hakima Amri, and Marc S. Micozzi	25
[8]	Arabic Loanwords in English: A Lexicographical Approach (Fournier & Latrache, 2022: 343-349)	Pierre Fournier and Rim Latrache	409
[9]	English Words from Arabic (Tim Zompist, 2022, <i>English Words from Arabic</i>)	Tim Zompist	204
Total			2.145

From the table above, it is clear that the existence of English loanwords from Arabic varies in number. Based on the author's search for English loanwords from Arabic in various dictionaries, encyclopedias, articles, and books above, more than 2,145 loanwords were obtained, as shown in the table above. This number is still in the form of identification results. It has not been classified based on the similarities or dissimilarities between the words in the various data sources used as references. After verification and classification, around 250 English loanwords from Arabic were found. Then, after the author compared and assessed the loanwords, 50 patterns of phoneme changes in English loanwords from Arabic were found. This can be seen in the following section.

3. PATTERNS OF CHANGE IN ARABIC LOANWORDS IN ENGLISH

Loanwords generally experience changes from the source language or original language. Language changes like this occur in all languages. This then affects various forms of language use, both pronunciation and perhaps also its meaning (Hock & Winter, 2009: 4). Two different languages must have different pronunciation patterns. This has become a natural law, or *sunnatullah*, as also mentioned in the Qur'an وَمِنْ آيَاتِهِ خَلْقُ السَّمَوَاتِ وَالْأَرْضِ وَاخْتِلَافُ أَلْسِنَتِكُمْ وَأَلْوَانِكُمْ إِنَّ فِي ذَلِكَ لَآيَاتٍ لِّلْعَالَمِينَ (الروم، 22)

Language differences are signs of God's power in the universe. Therefore, when a nation absorbs a language from another nation, it will always result in phoneme changes in the borrowed language from its original language. For this reason, changes in the phonemes of borrowed words are always interesting for linguists to research and study.

Rask and Grimm once conducted this kind of language change study. Both of them attempted to research and compare the differences in pronunciation between German and Indo-European languages. The purpose of Rask and Grimm's work was to explain further the relationship between Germanic languages and classical Indo-European languages and to show and prove that German is part of the Indo-European language family. The results of their research show that German is part of the Indo-European language (Hock & Winter, 2009: 114). If Rask and Grimm attempted to

research and compare phoneme changes or differences in pronunciation between German and Indo-European languages, then in this paper, the author wants to try to research and compare phoneme changes or differences in pronunciation of Arabic loanwords in English. The analysis in this paper follows the Grimm model of phoneme change patterns. The author did this in order to discover patterns of changes in Arabic loanwords in English.

As mentioned above, based on the identification, verification, classification, and analysis of Arabic loanword data in English, the author found various forms of phoneme changes in Arabic loanwords in English. Phoneme changes can be: 1). Phoneme replacement, 2). Phoneme deletion, 3). Phoneme addition, and 4). Phoneme shift (Campbell, 1998: 16-56). An overview of these changes is as follows:

a. Phoneme Replacement.

Grimm stated that the phoneme changes he studied about the differences between Germanic and classical languages showed very systematic sound change patterns. Grimm's research then produced a pattern of change in classical Indo-European languages, later known as "Grimm's Law" (Hock & Winter, 2009: 114).

If we refer to the Grimm model of phoneme change patterns above, the phoneme changes in Arabic loanwords in English were found to be 50 phoneme change patterns (replacements) in loanwords. From the 50 change patterns above, the author examined them again and classified them alphabetically. The results can be grouped into 22 change patterns (replacements) groups. One phoneme can change or be replaced into several different phonemes. The 22 phoneme change patterns of Arabic loanwords in English with meaning in Indonesian, along with examples, are as follows:

Table 3. Phonemic Change Patterns for English Loanwords from Arabic.

Pattern	Change		Example of Phoneme Change			Indonesian
	from	to	Arabic	AO/PT*	EO/PT**	
1	b /b/ (ب)	p /p/	شراب	syarā b /fara: b /	syru p /sirə p / ^[1, 2, 3, 4, 5, 6, 9]	sirup, minuman
	b /b/ (ب)	v /v/	القبة	al-qu bb ah /ʔlqu bb a/	alco v e /ælkəʊ v / ^[3, 4, 5, 9]	kubah
2	d /dʳ/ (ض)	d /d/	قاضي	qā d iy /qa: d ʲij/	ca d i /ka: d i/ ^[1, 5, 8]	Hakim
	d /dʳ/ (ض)	th /θ/	أرض	ar d /ʔr d ʲ/	ear th /ɜ:r θ / ^[2]	bumi
3	d /d/ (د)	s /s/	فاسد	fāsi d /fa: si d/	vicious s /viʃə s / ^[5]	rusak, jahat

Pattern	Change		Example of Phoneme Change			Indonesian
	from	to	Arabic	AO/PT*	EO/PT**	
4	f /f/ (ف)	b /b/	الفطرس (طائر بحري)	al- f atros /ʔl f atʕras (tʕa:ʔir baħrij)/	al b atross /ælb ə trɒs/[1, 3, 4, 5]	elang laut
	f /f/ (ف)	h /h/	فَرَس	f aras / f aras/	h orse / h o:s/[5]	kuda
	f /f/ (ف)	p /p/	طوفان	tū f ān /tʕu: f a:n/	ty p hoon /tai'f u :n/[4, 5]	topan
	f /f/ (ف)	ph /ph/, f /f/	صفر	ṣ i fr /sʕ i fr/	ci ph er /sai'f ə /[2, 3, 4, 5, 9]	nol, kosong
			نفط	na f t /na f tʕ/	na ph tha /næ'f θ ə/[5]	minyak
			طوفان	tū f ān /tʕu: f a:n/	ty ph oon /tai'f u :n/[4, 5]	topan
	f /f/ (ف)	v /v/	فاسد	f āsīd / f a:sīd/	v icious / v iʕəs/	rusak, jahat
5	g /ɣ/ (غ)	c /c/, k /k/	الغول	al- g aul /ʔl ɣ awl/	al c ohol /ælk ə hɒl/[1, 3, 4, 5, 9]	alkohol, perusak, memabukkan
			الغرافة	al- g arāfah /ʔl ɣ ira:f/	c arafe /k ə 'ræf/[2, 4, 5, 9]	teko
	g /ɣ/ (غ)	g /g/	غربل	g arbal /ɣ ə rbal/	g arble /g a :bəl/[2, 4, 5, 9]	menyaring
			غزال	g azāl /ɣ ə za:l/	g azelle /g ə 'zɛl/[1, 2, 3, 4, 5, 9]	kijang
6	h /ħ/ (ح)	c /c/, k /k/	حبل	h abl / h abl/	c able / k ɛɪbəl/[1, 2, 5]	Tali
	h /ħ/ (ح)	ch /ch/, ch /tʃ/	بحر	ba h r /ba h r/	bea ch /bi: tʃ /[1]	Laut
	h /ħ/ (ح)	g /g/, g /dʒ/	مسح / مسح	mass/mas h /mass (masaħa)/	massa g e /mæsa: dʒ /[2, 4, 5]	sentuh / hapus

Pattern	Change		Example of Phoneme Change			Indonesian
	from	to	Arabic	AO/PT*	EO/PT**	
	ḥ /ħ/ (ح)	h /h/, h /ø/	فلاح	fallāḥ /fala:ḥ/	fellaḥ /felə/[^{1, 5, 8, 9}]	petani
			حريم	ḥarīm /ḥari:m/	ḥarem /ḥeərəm/[^{3, 4, 5, 9}]	Perempuan piaraan
			حشيش	ḥasyīsy /ḥaʃi:ʃ/	ḥashish /ḥæʃi:ʃ/[^{1, 3, 4, 5, 8, 9}]	ganja
			حناء	ḥinna' /ḥina:ʔ/	ḥenna /ḥenə/[^{1, 3, 4, 5, 8, 9}]	inai, pacar (kuku)
			حورية	ḥūriyyah /ḥu:rija/	ḥouri /ḥouri/[^{3, 5, 9}]	Bidadari/peri
7	h /h/ (هـ)	f /f/	قهوة	qahwah /qahwa/	coffee /kɒfi/[^{1, 2, 3, 4, 5, 6, 8, 9}]	kopi
8	j /dʒ/ (ج)	c /c/, k /k/	جمال	īamal /dʒamal/	camel /kæməl/[^{1, 2, 5}]	unta
	j /dʒ/ (ج)	ck /ck/, k /k/	برج	burī /burdʒ/	brick /brɪk/[⁵]	benteng, bata
	j /dʒ/ (ج)	g /g/, g /dʒ/	أجل	ajl /ʔdʒl/	age /eɪdʒ/[²]	usia, umur, ajal
			الجبر	al-īabar /ʔldʒabar/	algebra /ælˈdʒæbrə/[^{1, 2, 3, 4, 5, 9}]	aljabar
			الترجمان	at-turīumān /ʔlturˈdʒuma:n/	dragoman /dræˈɡʊmən/[^{2, 5, 9}]	Penerjemah
			جبس	īibs /dʒibs/	gypsum /ˈdʒɪpsəm/[^{2, 5}]	gips
9	k /k/ (ك)	c /c/, k /k/	الباكورة	al-bākūrah /ʔlba:kū.ra/	albacore /albaˈcore/[^{5, 9}]	pertama, pagi, lahir, unta muda
			كافور	kāfūr /ka:fu:r/	camphor /kæmfə/[^{1, 2, 3, 4, 5, 9}]	kamper

Pattern	Change		Example of Phoneme Change			Indonesian
	from	to	Arabic	AO/PT*	EO/PT**	
			كراويا	<u>k</u> urawiyyā /kura:wiyya:/	<u>c</u> araway /kærəwei/[2, 4, 5, 9]	Jintan
			كمون	<u>k</u> amūn /kamu:n/	<u>c</u> umin /kamin/[2, 4, 5]	jinten
			فلك	ful <u>k</u> /ful <u>k</u> /	felucc <u>a</u> /fə 'lu:kə/[1, 5, 9]	bahtera, kapal, perahu
	k /k/ (ك)	ch /ch/, ch /tʃ/, ch /k/	الكيمياء	al- <u>k</u> īmiyā' /ʔlki:mi:a:ʔ/	al <u>ch</u> emy /ælkimi/[1, 3, 4, 5, 9]	kimia
			كرسي	<u>k</u> ursiy / <u>k</u> ursij/	<u>ch</u> air /tʃeə/[5]	kursi
			كيمياء	<u>k</u> īmiyā' /ki:mi:ja:ʔ/	<u>ch</u> emistry /kemistri/[1, 3, 4, 5, 9]	kimia
	k /k/ (ك)	g /g/	سكر	su <u>k</u> ar /su <u>k</u> ar/	sug <u>a</u> r /ʃoʊ <u>g</u> ə/[1, 2, 4, 5, 9]	Gula
	k /k/ (ك)	x /x/, x /ks/	الإكسير	al- <u>i</u> ksīr /ʔlʔi:ksi:r/	eli <u>x</u> ir /i 'liksə/[1, 3, 4, 5, 6, 9]	eliksir, bubuk logam/emas
10	kh /x/ (خ)	c /c/, k /k/	خليفة	<u>kh</u> alīfah /xali:fa/	<u>c</u> aliph /keɪlɪf/[2, 5, 9]	khalifah, pemimpin
			خط	<u>kh</u> at /xat ^s /	<u>c</u> ode /kəʊd/[2]	Garis
	kh /x/ (خ)	g /g/	الخوارزمي	al- <u>kh</u> awārizmiy /ʔlxawa:rizmij/	Al <u>g</u> orithm /æl <u>g</u> ərɪðəm/[1, 2, 4, 5, 9]	Alkhawarizm i
			مخازن	ma <u>kh</u> āzin /maxa:zin/	mag <u>a</u> zine /mæ <u>g</u> ə'zi:n/[1, 2, 3, 4, 5, 9]	majalah
12	m /m/ (م)	n /n/	شمس	syam <u>s</u> /fam <u>s</u> /	sun /sʌ <u>n</u> /[1]	Matahari
13	n /n/ (ن)	m /m/	جبس	jibsun <u>n</u> /dʒibsun/	gypsu <u>m</u> /dʒɪpsə <u>m</u> /[2, 5]	gips

Pattern	Change		Example of Phoneme Change			Indonesian
	from	to	Arabic	AO/PT*	EO/PT**	
14	q /q/ (ق)	c /c/, k /k/	القائد	al- q ā'id /ʔl q a:ʔd/	al c aide /al c aide/[5]	Pemimpin
			القاضي	al- q āḍiy /ʔl q a:d ^ɕ ij/	al c alde /al c alde/[5]	hakim
			القصر	al- q aṣr /ʔl q as ^ɕ r/	al c azar /al c azar/[5]	Istana
			القرآن	al- q ur'ān /ʔl q urʔa:n/	al c oran /ælk ɔ r 'a:n/[3, 5]	Al-Qur'an
			القبة	al- q ubbah /ʔl q ubba/	al c ove /ælk ə ʊv/[3, 4, 5, 9]	kubah
			قاضي	q āḍiy / q a:d ^ɕ ij/	c adi / k a:di/[1, 5, 8]	Hakim
			قميص	q amīṣ / q ami:s ^ɕ /	c amise /c a mise/[5, 8, 9]	kemeja
			قند	q and / q and/	c andy /k a endi/[1, 2, 3, 4, 5, 9]	permen
			قيراط	q īrāt / q i:ra:t ^ɕ /	c arat / k æræt/[1, 2, 4, 5, 8, 9]	karat
			قط	q itt / q it ^ɕ /	c at / k æt/[2]	kucing
			قهوة	q ahwah / q ahwa/	c offee / k ɔfi/[1, 2, 3, 4, 5, 6, 8, 9]	kopi
			قافلة	q āfilah / q a:fila/	c offle /c o ffle/[5, 8]	Konvoi, kafilah, kelompok
			قطن	q uṭn / q ut ^ɕ n/	c otton /k ɔ t ^ə n/[1, 2, 3, 4, 5, 9]	kapas
			قرمز	q irmiz / q irmiz/	c rimson /k ɔ rmiz ^ə n/[1, 2, 4, 5, 9]	merah tua
			شرقيين	syar q iyyīn /far q iyyi:n/	sara c en /særə s en/[5, 9]	oriental, orang timur
			شروق	syurū q /furu: q /	siro c co /sɪ 'rɔ k əʊ/[3, 5, 9]	matahari terbit

Pattern	Change		Example of Phoneme Change			Indonesian
	from	to	Arabic	AO/PT*	EO/PT**	
	q /q/ (ق)	g /g/	أقر	a <u>q</u> arra /ʔ <u>q</u> arra/	a <u>g</u> ree /ə'gri:/ ^[2]	menyetujui
			قبالة	<u>q</u> abālah / <u>q</u> aba:la/	<u>g</u> abelle / <u>g</u> abelle/ ^[1, 5]	pajak, penerimaan
			قسم	<u>q</u> ismun / <u>q</u> ismun/	<u>g</u> ismo / <u>g</u> ismo/ ^[3]	macam, bagian, varian
			قيتارة	<u>q</u> ītārah / <u>q</u> i:ta:ra/	<u>g</u> uitar / <u>q</u> i'tar/ ^[1,2, 5]	gitar
	q /q/ (ق)	k /k/	القالي	al- <u>q</u> āliy /ʔl <u>q</u> a:lij/	al <u>k</u> ali /ælkəlaɪ/ ^[1, 3, 4, 5, 9]	panci
			دمشق	dimasy <u>q</u> i /dima <u>q</u> i/	damas <u>k</u> /dæməs <u>k</u> / ^[2, 4, 5]	Damaskus
	q /q/ (ق)	x /x/, x /ks/	بورق	būra <u>q</u> /bu:ra <u>q</u> /	Bora <u>x</u> /bɔ:ræ <u>ks</u> / ^[1, 4, 5, 6, 9]	boraks
	q /q/ (ق)	ck /ck/, ck /k/	عرق التمر (مشروب مكسر)	‘ara <u>q</u> /ʕara <u>q</u> u ʔltamr (maʕru:bun mukassir)/	arra <u>ck</u> /ærə <u>k</u> / ^[1, 4, 5, 8]	Kurma arak (minuman memabukkan)
15	ṣ /sʕ/ (ص)	s /s/, s /sʕ/	دار الصناعة	dār aṣ- <u>s</u> inā‘ah /da:r ʔl <u>s</u> ina:ʕa/	ar <u>s</u> enal /a: <u>s</u> ənʔ/ ^[1, 2, 3, 4, 5, 9]	Rumah Industri
			قميص	qamī <u>s</u> /qami: <u>sʕ</u> /	camī <u>se</u> /camī <u>se</u> / ^[5, 8, 9]	kemeja
			صندل	<u>s</u> andal / <u>sʕ</u> andal/	<u>s</u> andal (wood) / <u>s</u> ændʔl (wod)/ ^[2, 5]	sandal
			صفة	<u>s</u> uffah / <u>sʕ</u> uffa/	<u>s</u> ofa / <u>s</u> əʊfə/ ^[2, 3, 4, 5, 9]	sofa, kursi panjang dari batu
	ṣ /sʕ/ (ص)	z /z/	القصر	al-qa <u>s</u> r /ʔlqa <u>sʕ</u> r/	alca <u>z</u> ar /alca <u>z</u> ar/ ^[2, 5]	Istana
			الحصان	al-ḥi <u>s</u> ān /ʔlhi <u>sʕ</u> a:n/	ale <u>z</u> an /ale <u>z</u> an/ ^[5]	kuda

Pattern	Change		Example of Phoneme Change			Indonesian
	from	to	Arabic	AO/PT*	EO/PT**	
			العصارة	al-‘u <u>s</u> ārah /ʔlʕi <u>s</u> ˤaːra/	alizi <u>z</u> arin /əˈli <u>z</u> ərɪn/[4, 5]	sari buah
			صفر	<u>s</u> ifr / <u>s</u> ˤifr/	<u>z</u> ero / <u>z</u> iərəʊ/[2, 3, 4, 5, 9]	nol
	ʕ /sˤ/ (ص)	c /c/, c /s/	صفر	<u>s</u> ifr / <u>s</u> ˤfr/	<u>c</u> ipher / <u>s</u> aɪfə/[2, 3, 4, 5, 9]	nol, kosong
16	sy /ʃ/ (ش)	sh /ʃ/	شال	<u>sy</u> āl / <u>f</u> aːl/	<u>sh</u> awl / <u>f</u> ɔːl/[2, 5]	selendang
17	t̤ /tˤ/ (ط)	d /d/	الطوب	aṭ- <u>t</u> ūb /ʔl <u>t</u> uːb/	a <u>d</u> obe /əˈ <u>d</u> əʊbi/[2, 4, 5, 9]	batu bata
			خط	kha <u>t</u> /xa <u>t</u> ˤ/	co <u>d</u> e /kəʊ <u>d</u> /[1]	Garis
	t̤ /tˤ/ (ط)	t /t/	الفطرس (طائر بحري)	al-fa <u>t</u> ros /ʔlfa <u>t</u> ˤras (tˤaːʔir baħrij)/	alba <u>t</u> ross /ælbə <u>t</u> rɒs/[1, 3, 4, 5]	elang laut
			قيراط	qīrā <u>t</u> /qiːraː <u>t</u> ˤ/	car <u>a</u> t /ˈkærə <u>t</u> /[1, 2, 4, 5, 8, 9]	karat
			قط	qi <u>t</u> t /qi <u>t</u> ˤtˤ/	ca <u>t</u> /kæ <u>t</u> /[2]	kucing
			قطن	qu <u>t</u> n /qu <u>t</u> ˤn/	co <u>t</u> ton /kɒ <u>t</u> ən/[1, 2, 3, 4, 5, 9]	kapas
			طوفان	<u>t</u> ūfān / <u>t</u> uːfaːn/	<u>t</u> yphoon /ˈtaɪˈfuːn/[4, 5]	topan
	t̤ /tˤ/ (ط)	th /th/, th /tθ/	نفط	na <u>f</u> t /na <u>f</u> ˤtˤ/	naph <u>th</u> a /næ <u>f</u> θə/[5]	minyak
18	t /t/ (ت)	d /d/	الترجمان	at- <u>t</u> urjumān /ʔl <u>t</u> urɖumaːn/	<u>d</u> ragoman /ˈdrægəʊmən/[2, 5, 9]	Penerjemah
19	w /w/ (و)	f /f/	قهوة	qah <u>w</u> ah /qah <u>w</u> a/	coff <u>f</u> ee /kɒ <u>f</u> i/[1, 2, 3, 4, 5, 6, 8, 9]	kopi

Pattern	Change		Example of Phoneme Change			Indonesian
	from	to	Arabic	AO/PT*	EO/PT**	
	w /w/ (و)	h /h/ (ه)	الغول	al-gau <u>l</u> /ʔlyaw <u>w</u> /	alco <u>h</u> ol /ælkə <u>h</u> pl/[1, 3 4, 5, 9]	alkohol, perusak, memabukkan
	w /w/ (و)	v /v/ (و)	ديوان (الجلوس) (	dī <u>w</u> ān /di: <u>w</u> a:n (lildʒulu:s)/	di <u>v</u> an /dɪ 'væn/[1, 2]	Diwan (duduk)
			وزير	<u>w</u> azīr / <u>w</u> zjr/	<u>v</u> izier /vɪ 'ziə/[2, 5, 9]	menteri
20	y /j/ (ي)	j /j/, j /dʒ/	ياسمين	yasmīn /jɑ:smi:n/	jasmine /dʒæzmɪn/[1, 2, 4, 5, 9]	yasmine, melati
21	z /ð/ (ذ)	d /d/	ذنب	<u>z</u> anab / <u>ð</u> anab/	<u>d</u> eneb /dēneb/[1, 2, 5, 8, 9]	dosa
22	z /z/ (ز)	g /g/, g /dʒ/	زرافة	zīrāfah /zira:fa/	<u>g</u> iraffe /dʒɪ 'ra:f/[1, 2, 3, 4, 5, 8, 9]	jerapah
	z /z/ (ز)	s /s/, s /z/	قرمز	qirmī <u>z</u> /qirmi: <u>z</u> /	crim <u>s</u> on /krɪm <u>z</u> ən/[1, 2, 4, 5, 9]	merah tua
	z /z/ (ز)	th /th/, th /ð/	الخوارزمي	al-khawārī <u>z</u> miy /ʔlxawa:ri: <u>z</u> mij /	algori <u>th</u> m /ælgəri: <u>ð</u> əm/[1, 2, 4, 5, 9]	Alkhawarizm i

* Arabic orthography/phonemic transcription (AO /PT/). ** English orthography/phonemic transcription (EO /PT/). Phonemic transcription in the table above is marked with the symbol "/.../".

The table above clearly shows the replacement of phonemes in various patterns. The letters in red in the “example of phoneme changes” column, especially in the “AO/PT” and “EO/PT” columns, are a description of the changes or replacement of phonemes orthographically or phonemically in Arabic loanwords in English.

b. Phoneme Deletion

This pattern is commonly called **reduction**. Reduction is a language change that reduces the size or intensity of a linguistic element or the loss of that element. Usually, this change is associated with a change in sound, loss of phonological

material, or erosion of phonetic material (Campbell & Mixco, 2007: 167). There are several types of this pattern, as follows:

- 1). Deletion of phonemes in the middle or at the end of a word (hamzah or "i").
Examples are as follows:

Table 4. Example of Phoneme Deletion.

Arabic	AO /PT/	EO /PT/	Indonesian
كيمياء	kīmiyā' /ki:mi:ja:ʔ/	Al-Chemy /ælkɪmi/	kimia
الإكسير	al-iksīr /ʔlʔiksɪ:r/	Eli x ir /ɪ'lɪksə/	eliksir, bubuk logam/emas
أجل	ajl /ʔadʒl/	age /eidʒ/	usia, umur, ajal

Pay attention to the loanwords whose letters are red in the column above. Then it appears that there are phonemes that are removed, namely the Removal of "hamza" at the end of the word in the word "kīmiyā' /ki:mi:ja:ʔ/" and the removal of "s" in the middle of the word in the word "al-iksīr /ʔlʔiksɪ:r/", and the removal of "l" at the end of the word in the word "ajl /ʔadʒl/". These phonemes do not exist or are removed from the loanwords in the "English" column above. For the word "al-iksīr /ʔlʔiksɪ:r/", the phoneme "s" is removed and reduced to the phoneme "x" orthographically or /ks/ phonemically in English. English's phoneme "x" contains the sound "s".

- 2). Remove the phoneme or syllable "ah" at the end of the word. For example, as follows:

Table 5. Example of Syllable.

Arabic	AO /PT/	EO /PT/	Indonesian
زرافة	zirāfah /zira:fa/	giraffe /dʒɪ'ra:f/	jerapah
خليفة	khalīfah /xali:fa/	caliph /keɪlɪf/	khalifah, pemimpin
قيثارة	qītārah /qi:ta:ra/	guitar /ɡɪ'tar/	gitar

Pay attention to the loanwords whose letters are red in the column above. Then it appears that there are phonemes that are removed, namely the removal of the phoneme or syllable "ah /a/" at the end of the word in the words "zirāfah /zira:fa/", "khalīfah /xali:fa/", and "qītārah /qi:ta:ra/". All phonemes or syllables "ah" at the end of the word in these words are removed in Arabic loanwords in English so that they become "giraffe /dʒɪ'ra:f/", "caliph /keɪlɪf/", and "guitar /ɡɪ'tar/".

- 3). The Removal of "tanwin" or "n" at the end of a word is called **erosion**.

Erosion (sometimes also called phonetic attrition) is the progressive reduction or removal of linguistic material, especially phonetic word forms (or morphemes), by sound changes (Campbell & Mixco, 2007: 54-55). For example, as follows:

Table 6. Example of Erosion.

Arabic	AO /PT/	EO /PT/	Indonesian
قسم	qismu <u>n</u> /qismu <u>n</u> /	gismo /gismo/	macam, bagian, varian

Pay attention to the loanwords whose letters are coloured red, which is in the column above; it appears that there is a "tanwin" or phoneme "n" that is removed, namely in the word "qismun /qismun", which becomes "gismo /gismo/", which does not have the phoneme "n".

4). Removal of double vowels is called *monophthongization*.

Monophthongization is a sound change in which two members of a diphthong or members of a vowel cluster are reduced to a simple single vowel, to only one vowel articulation movement (monophthong), either in the fusion of its members or by the loss of one member of the diphthong (Campbell & Mixco, 2007: 127), such as ("aa" or "ā", "ii" or "ī"). For example, as follows:

Table 7. Example of Monophthongization.

Arabic	AO /PT/	EO /PT/	Indonesian
زرافة	zirā <u>a</u> fah /zirā <u>a</u> :fa/	gir <u>a</u> ffe /dʒi 'r <u>a</u> ʃ/	jerapah
خليفة	khalī <u>i</u> fah /xali <u>i</u> :fa/	cali <u>p</u> h /keɪ <u>l</u> ʃ/	khalifah, pemimpin
قيتارة	qītā <u>r</u> ah /qi:tā <u>r</u> a/	gui <u>t</u> ar /gɪ'ta:/	gitar

Pay attention to the loanwords whose letters are coloured red, which is in the column above; it appears that there are phonemes that are removed, namely the removal of the vowel "aa" (long/two vowels) in the word "zirāfah /zirāa:fa/" to only one vowel "a" (short/one vowel) in the word "giraffe /dʒi 'raʃ". Likewise, the removal of the vowel "ii" (long/two vowels) in the word "khalīfah /xalii:fa/" to only one vowel "i" (short/one vowel) in the word "caliph". In addition, there is also the removal of the vowels "ii" and "aa" (long/two vowels) in the word "qītārah /qi:tāra/" to only one vowel "i" and "a" (short/one vowel) in the loan word "guitar /gɪ'ta:/".

5). Removal of vowels, called *syncope*.

Syncope, derived from the Greek word "sunkopé" meaning "cutting", derived from the word "sun", meaning "sun", and "kopé" meaning "cutting, hitting", is a sound change in which a vowel is lost (deleted) from the inside of a word (not at the beginning or end), such as, for example, in English "family" becomes "fam'ly", and "memory" becomes "mem'ry" (Campbell & Mixco, 2007: 198). Example: the Removal of the vowel "i". An example is as follows:

Table 8. Example of Syncope.

Arabic	AO /PT/	EO /PT/	Indonesian
قافلة	qāfi <u>i</u> lah /qa:fī <u>i</u> la/	coffle /ko:fel/	Konvoi, kafilah, kelompok

Pay attention to the loanwords whose letters are red in the column above. Then it appears that there is a phoneme that is removed, namely the Removal of the vowel "i" in the word "qāfilah /qa:fila/", whose vowel "i" is lost in the loan word "coffle /ko:fel".

6). Weakening of phonemes (sounds) is called **lenition**.

Lenition, also commonly called **weakening**, is a sound change in which the sound produced experiences a weakening in its articulation from the original sound before the change. Lenition usually includes changes from stops or affricates to fricatives, from two consonants to one (Campbell & Mixco, 2007: 100). For example, as follows:

Table 9. Example of Lenition.

Arabic	AO /PT/	EO /PT/	Indonesian
السيد	as- <u>s</u> īd /ʔl <u>s</u> i:d/	a <u>c</u> id /æ <u>s</u> id/	asam
القائد	al-qā' <u>i</u> d /ʔlqa:ʔ <u>i</u> d/	alca <u>i</u> de /alca <u>i</u> de/	Pemimpin

Pay attention to the loanwords whose letters are red in the column above. It appears that there is a phoneme that is removed, namely the Removal of "ss" (double consonant) in the word "as-sīd /ʔlsi:d/" (which has a stronger pronunciation and sound because of the double consonant) to only one consonant "c" (instead of "s") in the word "acid /æsid/" (which has a weaker pronunciation and sound because of only one consonant). Likewise, there is a weakening of the vowel sound "i" in the word "al-qā'id /ʔlqa:ʔid/" (which has a more substantial reading and sound of the "i" vowel) to become the vowel "i" in the loan word "alcaide /alcaide/" (which has a weaker reading and "i" sound).

c. Addition/Insertion of Phonemes (Insertion).

Addition/insertion is one of several changes that insert some linguistic materials or elements that were previously absent. Usually, this is said to be a sound change that produces sounds previously not found at the place of insertion, such as in analysis, epenthesis, excrescence, paragoge, prothesis, etc. (Campbell & Mixco, 2007: 85).

1). Strengthening of phonemes, called **Fortition**, is the opposite of lenition (Campbell, 1998: 41, Campbell & Mixco, 2007: 193). For example, as follows:

Table 10. Example of Fortition.

Arabic	AO /PT/	EO /PT/	Indonesian
الطوب	a <u>t</u> -tūb /ʔl <u>t</u> u:b/	a <u>d</u> obe /ə 'd <u>d</u> ubi/	batu bata
الجبر	al- <u>j</u> abar /ʔl <u>d</u> ʒabr/	al <u>g</u> ebra /æ <u>l</u> dʒabrə/	aljabar
الخوارزمي	al- <u>kh</u> awārizmiy /ʔl <u>x</u> awa:rizmij/	Al <u>g</u> orithm /æ <u>l</u> gərɪðəm/	Alkhawarizmi

Pay attention to the loanwords whose letters are red in the column above. There appears to be a strengthening of the phoneme sound, namely from the

phoneme "t /t̤/" in the word "at-ṭūb /ʔl̤t̤uːb/", which has a weaker pronunciation and sound than the phoneme "d /d/" in the word "adobe /ə'dəʊbi/", which has a stronger pronunciation and sound. In addition, in the column above, there is also a strengthening of the phoneme sound "j /dʒ/" in the word "al-jabar /ʔl̤dʒabr/", whose pronunciation and sound of the phoneme are weaker compared to the pronunciation and sound of the phoneme "g" in the loan word "algebra /ælˈdʒəbrə/. Likewise, with the strengthening of the phoneme sound "kh /x/" in the word "al-khawārizmiy /ʔl̤xawaːrizmij/", the pronunciation and sound of the phoneme become more assertive in the form of the phoneme "g /g/" in the loan word "Algorithm /ælˈɡərɪðəm/".

- 2). Addition or insertion of phonemes into a word is called ***Epenthesis*** (Campbell, 1998: 33, Campbell & Mixco, 2007: 54). For example, as follows:

Table 11. Example of Epenthesis.

Arabic	AO /PT/	EO /PT/	Indonesian
كافور	kāfūr /kaːfuːr/	cam <u>m</u> phor /kæ <u>m</u> fə/	kamper
فلك	fulk /fulk/	fel <u>u</u> cca /fə'luːkə/	bahtera, kapal, perahu
أمير	amīr /ʔamiːr/	a <u>d</u> miral /æ <u>d</u> mɪrəl/	Laksamana, pangeran

Pay attention to the loanwords whose letters are coloured red, which are in the column above. Then it appears that there is an addition of sounds or phonemes, namely from the phoneme "ø" in the word "kāfūr /kaːfuːr/" which is added to the phoneme "m" in the word "camphor /kæmfə/", and from the phoneme "ø" in the word "fulk /fulk/" which is added to the phoneme "e" in the word "felucca /fə'luːkə/" by shifting the phoneme "u" after "l", and also the addition of the phoneme "d" in the word "admiral /ædmɪrəl/", which comes from the Arabic "amīr /ʔamiːr/".

- 3). The addition or insertion of phonemes at the beginning of a word is called ***prothesis*** (Campbell, 1998: 33, Campbell & Mixco, 2007: 158). For example, as follows:

Table 12. Example of Prothesis.

Arabic	AO /PT/	EO /PT/	Indonesian
ترصيع	tarṣī' /tr̥s̥j̥i/	<u>in</u> tarsia / <u>in</u> tarsēə /	tatahan

Pay attention to the loanwords whose letters are red and whose columns are in the column above. Then it appears that there is an addition of sounds or phonemes, namely from the phoneme "ø" in the word "tarṣī' /tr̥s̥j̥i/" which is added to the phoneme "in" in the word "intarsia /intarsēə /".

- 4). The addition of vowels at the end of a word, for example, after "d" or "l", is called ***paragoge***.

Paragoge (from the Greek "paragogé" meaning "prominent past") is a sound change by adding a sound (usually a vowel) at the end of a word. For example, in Spanish dialects, the ending "-e" is sometimes added (sporadically) to some words ending in "d", such as the word "rede" from "red", meaning "net" (Campbell, 1998: 35, Campbell & Mixco, 2007: 149-150). For example, as follows:

Table 13. Example of Paragoge.

Arabic	AO /PT/	EO /PT/	Indonesian
القائد	al-qā'i <u>d</u> /ʔlqɑ:ʔi <u>d</u> /	alcaide <u>e</u> /alcaide <u>e</u> /	pemimpin, panglima
فلك	ful <u>k</u> /ful <u>k</u> /	felucca <u>a</u> /fə 'lu:k <u>a</u> /	bahtera, kapal, perahu

Pay attention to the loanwords whose letters are red and whose columns are in the column above. Then there is an additional phoneme, namely the addition of the vowel "e /e/" at the end of the word in the loanwords "alcaide /alcaidee", and the vowel "a /ə/" at the end of the word in the loanwords "feluccaa /fə 'lu:ka", in which the vowel does not exist in the words "al-qā'id /ʔlqɑ:ʔid", and "fulk /fulk" in Arabic as the original language.

d. Phoneme shift/Transposition (Metathesis).

Metathesis (metathesis), derived from the Greek word "metaθesis", which means "transposition, change of side", is a sound change involving sound transposition, a sound change in which sounds exchange positions with each other in a word. For example, the Old English word "brid" becomes the Modern English "bird", and the Old English word "hros" becomes "horse" (Campbell, 1998: 37, Campbell & Mixco, 2007: 122). For example, as follows:

Table 14. Example of Phoneme Shift/Transposition.

Arabic	AO /PT/	EO /PT/	Indonesian
قرمز	<u>qir</u> miz / <u>qir</u> miz/	<u>cri</u> mson / <u>kri</u> mzən/	merah tua
الجبر	al-ja <u>bar</u> /ʔldʒa <u>bar</u> /	alge <u>bra</u> /ældʒə <u>brə</u> /	aljabar
الترجمان	at- <u>tur</u> jumān /ʔl <u>tur</u> dʒuma:n/	<u>dra</u> goman / <u>dræ</u> gəʊmən/	penerjemah

Pay attention to the loanwords whose letters are red in the column above. Then, there appears to be a shift in phonemes or syllables, namely the shift in the phoneme or syllable "qir" in the word "qirmiz /qirmiz/" to the phoneme or syllable "cri" in the word "crimson /krimzən/". In addition, in the example in the column above, there is also a shift in the phoneme "bar" to "bra" in the word "al-jabar /ʔldʒabar" to "algebra /ældʒəbrə" and "tur" to "dra" in the word "at-turjumān /ʔlturdʒuma:n/" to "dragoman /drægəʊmən/".

e. Extreme changes (metatipy).

Metatypy is an extreme change in loanwords due to language contact in which the language structure is completely changed to be more similar to another language (Campbell & Mixco, 2007: 122). For example, as follows:

Table 15. Example of Metatypy.

Arabic	AO /PT/	EO /PT/	Indonesian
البرقوق	al-barqūq /ʔlbaru:q/	apricot /eiprikɒt/	prem
دار الصناعة	dār aṣ-ṣinā'ah /da:r ʔlsʕina:ʕa/	arsenal /a:sənəl/	Rumah industri
سمت (الرأس)	samtu (ar-ra's) /samtu (ʔlraʔas)/	zenith /zeniθ/	Zenit, puncak, di atas kepala

The English loanwords in the above table show drastic or extreme changes from the Arabic language, so it is not easy to recognize that the loanwords come from Arabic. The English loan word "apricot /eiprikɒt/", which comes from the Arabic word "al-barqūq /ʔlbaru:q/", has undergone drastic and extreme changes. This is a kind of mishearing of the original language, Arabic, which is then pronounced in a different phoneme form, although some of the sounds are similar. If traced, the change process may be by removing the phoneme "l" in the word "al-barqūq /ʔlbaru:q/" (Arabic) so that it changes to "abarqūq /ʔbaru:q/". Then, if the syllable "bar" in the word "abarqūq /ʔbaru:q/" is shifted to "bra", and the last phoneme "q" is replaced with the phoneme "t", it will become "abraquṭ /ʔbraqu:t/". Then, if the phoneme of the word "abraquṭ /ʔbraqu:t/" is adjusted to the English pronunciation by replacing the phoneme "b" with "p", and the vowel sound "a" is adjusted to the vowel "i" (the vowel "a" is usually read as "ai" in English), and the vowel "u" becomes "o /ɒ/", then it will change to "apricot /eiprikɒt/". This change is long, so it is not easy to recognize and understand that this loan word comes from Arabic.

Extreme changes also occur in the loan word "arsenal /a:sənəl/", which comes from the Arabic "dār aṣ-ṣinā'ah /da:r ʔlsʕina:ʕa/". These two words are different, and it is almost unrecognizable that they have a borrowing or absorption relationship. However, if we observe by trying to analyze the two words, it will be apparent that they are closely related in borrowing and absorption. If we try to remove the phoneme "d" (which is at the front of the word) and the double "s" and "a" (which are in the middle and end of the word) are removed by one phoneme, then it will become "arasinah /a:rasinah/". Then, if the phoneme "a" (in the middle) is removed and the phoneme "h" is replaced with the phoneme "l", the pronunciation will change to "arsenal /a:sənəl/". This change is also quite lengthy and complicated so that it is almost impossible to recognize that the English loanword "arsenal /a:sənəl/" comes from the Arabic "dār aṣ-ṣinā'ah /da:r ʔlsʕina:ʕa/". However, many English language experts admit that these two words have a borrowing or absorption relationship. Likewise, the English loanwords

"zenith /zɛnɪθ/" and "hazard /ha-zərd/" both experienced drastic and extreme changes from the Arabic "samtu /samtu/" and "al-zarr /ʔl-zarr/".

Such is the description of the phoneme changes of Arabic loanwords in English and the various patterns of change based on the analysis conducted by the author.

C. CONCLUSION

Based on the identification, verification, classification, and analysis of data on Arabic loanwords from various sources in English, more than 250 loanwords originate from Arabic in English. Loanwords from other languages like this are common in all languages. Loanwords, in general, experience changes from their original language—changes in loanwords in English from Arabic form specific patterns.

The pattern of changes in Arabic loanwords in English forms 50 patterns of change. Of the 50 patterns of change, they can be classified into 22. The forms of these change patterns are: 1). Phoneme replacement, 2). Phoneme removal/deletion, 3). Phoneme addition, 4). Phoneme shift, and 5). Drastic and extreme changes in loanwords that are almost impossible to recognize as loanwords.

There are various forms of phoneme changes, namely reduction, erosion, monophthongization, syncope, lenition (phoneme removal), strengthening or fortition, paragoge, and phoneme shifts such as metathesis, as well as drastic or extreme changes called metatypy.

There are several Grimm's laws that are relevant to phoneme changes that occur in Arabic loanwords in English orthographically or phonemically, such as "b /b/" to "p /p/" and "t /t/" (ta' marbutoh) to "ø" (lost). However, there are also phoneme changes that occur in Arabic loanwords in English that are the opposite of Grimm's laws. Among these changes are the changes from "p /p/" to "f /f/" (in Grimm's law) to "f /f/" to "p /p/" (in Arabic loanwords to English), and "d /d/" to "t /t/" (in Grimm's law) to "t /t/" to "d /d/" (in Arabic loanwords to English). The rest of the sound or phoneme changes form a pattern different from Grimm's laws. For example, changing the phoneme "b /b/" to "v /v/", "f /f/" to "b /b/", "f /f/" to "v /v/", "g /g/" to "c /c/, k /k/", "h /h/" to "c /c/, k /k/", "h /h/" to "g /g/, g /dʒ/", "h /h/" to "ch /ch/, ch /tʃ/", "h /h/" to "h /h/, h /ø/", "j /dʒ/" to "c /c/, k /k/", "j /dʒ/" to "ck /ck/, k /k/", "j /dʒ/" to "g /g/, g /dʒ/", "k /k/" to "c /c/, k /k/", "ch /ch/, ch /tʃ/, ch /k/", "g /g/", or "x /x/, x /ks/", "kh /x/" to "c /c/, k /k/", or "g /g/", "q /q/" to "c /c/, k /k/, g /g/, x /x/, x /ks/, ck /ck/, ck /k/" (the most common), "m /m/" to "n /n/", "n /n/" to "m /m/", "s /s/" to "s /s/, s /sʰ/, z /z/, or "c /c/, c /s/", "sy /ʃ/" to "sh /ʃ/", "w /w/" to "f /f/, h /h/, or "v /v/", "z /ð/" to "d /d/", and "z /z/" to "g /g/, g /dʒ/", "s /s/, s /z/", or "th /th/, th /ð/". These change patterns can be seen in the table in section D, in the phoneme replacement table.

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