PHONETIC CHANGES OF ARABIC LOANWORDS FOUND IN

WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY

A GRADUATING PAPER

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the Bachelor Degree in English Literature

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i

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ii

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iv

PHONETIC CHANGES OF ARABIC LOANWORDS FOUND IN
WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY

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Abstract

The title of this research is Phonetic Changes of Arabic Loanwords Found in *Webster's Third New International Dictionary*. This research aims to describe the kinds of sound change that occur in Arabic loanword in English. The writer chooses this topic of research because the phonetic changes in loanword are still debatable and it seems like arbitrary. Meanwhile, the object of this research is sound changes of Arabic loanword in English in which the analyses are focused on phonetic changes and the writer ignores its meaning. Arabic loanword is chosen as the data because it has unique character in its pronunciation and writing system. The method of this research is descriptive qualitative. Arabic loanwords found in the dictionary are analyzed by using theory of sound change by Terry Crowley with phonetics and phonological approach. This research concludes that in linguistic borrowing, loanword comes based on the rules of sound change. There are 68 Arabic words borrowed by English. The research shows that there are eight types of sound change in borrowing process of Arabic word in English, they are: lenition and fortition, deletion of phoneme, addition of phoneme, metathesis, fusion, unpacking, assimilation and abnormal sound change. In addition, this research also describes transformation of alphabetic system between Arabic and Roman alphabet.

Keywords: *Phonetic change, loanword, sound change*

PERUBAHAN FONETIK KATA SERAPAN BAHASA ARAB YANG DITEMUKAN DALAM *WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY*

Kukuh Subagiyo

Abstrak

Judul penelitian ini adalah *Phonetic Changes of Arabic Loanwords Found in Webster's Third New International Dictionary*. Penelitian ini bertujuan untuk menjelaskan jenis-jenis perubahan bunyi yang terjadi pada kata serapan bahasa Arab dalam bahasa Inggris. Penulis memilih topik ini karena perubahan fonetik pada kata serapan masih diperdebatkan dan terlihat seperti kesewenang-wenangan. Sedangkan objek penelitian ini adalah kata serapan bahasa Arab dalam bahasa Inggris yang mana fokus penelitian ini adalah perubahan fonetik dan penulis mengabaikan maknanya. Kata serapan bahasa Arab dipilih karena memiliki karakter yang unik dalam pengucapan dan penulisannya. Metode penelitian ini adalah deskriptif-kualitatif. Kata serapan bahasa Arab yang terdapat pada kamus dianalisis menggunakan teori perubahan bunyi oleh Terry Crowley dengan pendekatan fonetik dan fonologi. Penelitian ini menyimpulkan bahawa pada bahasa pinjaman kata serapan mengikuti aturan dari perubahan bunyi. Terdapat 68 kata bahasa Arab yang dipinjam oleh bahasa Inggris. Penelitian ini menunjukan bahwa terdapat delapan jenis perubahan bunyi yang terjadi, yaitu: pelemahan dan penguatan bunyi, penghapusan phoneme, penambahan bunyi, metatesis, fusi, pemisahan, asimilasi dan perubahan suara yang tidak biasa. Sebagai tambahan, penelitian ini juga menjelaskan tentang transformasi dari abjad Arab ke abjad Latin.

Kata kunci: Perubahan fonetik, kata serapan, perubahan bunyi

MOTTO

Do the best you can

Don't

Do thing as you can

DEDICATION

This graduating paper is dedicated to:

Jiah Fauziah, M.Hum., who guided me in finding the problem of this research, my parent who express their love by supporting and advising to finish this graduating paper, my brother and sister who believes me by taking example from me.

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I realize that this research needs critics and suggestions for the perfection of this paper. Finally, I hope that all parties who have mentioned above, God embraces them with blessing and luckiness forever.

TABLE OF CONTENTS

xi

LIST OF TABLES

xiii

LIST OF FIGURES

ABBREVIATIONS

RL	recipient language	CVCC	consonant, vowel, consonant, consonant
DL	donor language	CCVCC	consonant, consonant, consonant, vowel consonant
VC	vowel, consonant	CCCVC	consonant, consonant, consonant, vowel, consonant
CV	consonant, vowel	CCCVCC	consonant, consonant, consonant, vowel, consonant, consonant
CCV	consonant, consonant, vowel	CCVCCC	consonant, consonant, vowel, consonant, consonant, consonant
CCCV	consonant, consonant, consonant, vowel	CCCVCCC	consonant, consonant, consonant, vowel, consonant, consonant, consonant
VCC	vowel, consonant, consonant	CVV	consonant, vowel, vowel
VCCC	vowel, consonant, consonant, consonant	CVVC	consonant, vowel, vowel, consonant
CVCCC	consonant, vowel, consonant, consonant, consonant	CVVCC	consonant, vowel, vowel, consonant, consonant
CVCCCC	consonant, vowel, consonant, consonant, consonant, consonant	C1v.C2v.C3v	first consonant, vowel, second consonant, vowel, third consonant, vowel
CVC	consonant, vowel, consonant	C1iC2āC3	first consonant, vowel, second consonant, vowel, third consonant, vowel
CCVC	consonant, consonant, vowel, consonant	C1uC2uC3	first consonant, vowel, second consonant, vowel, third consonant, vowel

CHAPTER I

INTRODUCTION

1.1 Background of Study

The thing that shows humans are more civilized than any other creature is language. Good human civilization is shown by the language that they use in daily communication. Language can help people deliver and receive messages, and then they will understand each other. The communication is arranged by a system of language; that is "a systematic means of communicating ideas or feeling by the use of conventionalized signs, sounds, gestures, or marks having understood meaning" (Gove, 1976: 1270).

Language is divided into two, spoken language and written language. We have known that people get the language from utter what they had heard. Then the spoken language is the primary language of the human being. Spoken language is closely related to phonetics and phonology. Both discuss the sounds produced by humans. Phonetics and phonology are two branches of the study of the language of the sound and the sound system of language. Phonetics is the study that illustrates how sound is produced, delivered and received, whereas phonology analyzes and discusses the sound system (Fauziah, 2011: 1).

Language is productive and dynamic. It allows the language borrowed vocabulary from other languages. It is common that one language to take words from another language and make them part of its own vocabulary: these are called *loanwords* and the process is called as *borrowing*. The language which borrows

1

called the *recipient* language (RL) and the language which is borrowed from called the *donor* language (DL). A loanword is a lexical item (a word) which has been borrowed from another language, a word which originally was not part of the vocabulary of the recipient language but was adopted from some other language and made part of the borrowing language's vocabulary. (Campbell, 1998: 57-58)

This paper is discussing sound changes English vocabularies that borrowed from Arabic. English is the language used as the international communication. English affect many languages in the world. Many languages in the world borrow English vocabulary. In that time it allows the English borrows vocabulary from other languages. Loanwords are usually modified to fit the phonological structure.

The borrowing language may contain sounds which are foreign to the receiving language, but due to *phonetic interference.* It means the foreign sounds are changed to conform to native sounds and phonetic constraints. This is frequently called *adaptation* (phoneme substitution) and *accomodation*. In the term of adaptation, a foreign sound in borrowed words which does not exist in the receiving language will be replaced by the nearest phonetic equivalent to it in the borrowing language. For example, word "Alcohol" which the letter (H) is pronounced "h: glottal, fricative" stands as the nearest letter to (ح) that in the Arabic word "الكحل al-kuḥul".

In the term of *accommodation,* loanwords which do not conform to native phonological patterns are modified to fit the phonological combinations which are permitted in the borrowing language. This is usually accomplished by deletion, addition or recombination of certain sounds to fit the structure of the borrowing

language. For example, word "Camphor" which the letter (M) pronounced "m: bilabial, nasal" is added as Coda in the first syllable. (Campbell, 1998: 60-61)

Based on descriptions above those seem to be irregular and broken. This is the reason for taking sound changes as the object of this research because it will take part in the borrowing process. In which the foreign language have adjusted to other. This is relating to the *hadis* by Prophet Muhammad.

حَدَّثَنَا عَبْدُ اللَّهِ بْنُ يُوسُفَ، أَخْبَرَنَا مَالِكٌ، عَنِ ابْنِ شِهَابٍ، عَنْ عُرْوَةَ بْنِ الزُّبَيْرِ، عَنْ عَبْدِ الرَّحْمَنِ بْنِ عَبْدٍ الْقَارِيِّ، أَنَّهُ قَالَ سَمِعْتُ عُمَرَ بْنَ الْخَطَّابِ ـ رضى الله عنه ـ يَقُولُ سَمِعْتُ هِشَامَ بْنَ حَكِيمِ بْنِ حِزَامٍ، يَقْرَأُ سُورَةَ الْفُرْقَانِ عَلَى غَيْرِ مَا أَقْرَؤُهَا، وَكَانَ رَسُولُ اللَّهِ صلى الله عليه وسلم أَقْرَأَنِيهَا، وَكِدْتُ أَنْ أَعْجَلَ عَلَيْهِ، ثُمَّ أَمْهَلْتُهُ حَتَّى انْصَرَفَ، ثُمَّ لَبَّبْتُهُ بِرِدَائِهِ فَجِئْتُ بِهِ رَسُولَ اللَّهِ صلى الله عليه وسلم فَقُلْتُ إِنِّي سَمِعْتُ هَذَا يَقْرَأُ عَلَى غَيْرِ مَا أَقْرَأْتَنِيهَا، فَقَالَ لِي " أَرْسِلْهُ ". ثُمَّ قَالَ لَهُ " اقْرَأْ ". فَقَرَأَ. قَالَ " هَكَذَا أُنْزِلَتْ ". ثُمَّ قَالَ لِي " اقْرَأْ ". فَقَرَأْتُ فَقَالَ " هَكَذَا أُنْزِلَتْ. إِنَّ الْقُرْآنَ أُنْزِلَ عَلَى سَبْعَةِ أَحْرُفٍ فَاقْرَءُوا مِنْهُ مَا تَيَسَّرَ ".

> Narrated Abdullah bin Yusuf related to us from Malik from Ibn Shihab from Urwa ibn az- Zubayr that Abd ar-Rahman ibn Abd al-Qari said that he had heard Umar bin al-Khattab say,
> "I heard Hisham ibn Hakim ibn Hizam reciting Surat al-Furqan in a way different to that of mine. Allah's Apostle had taught it to me (in a different way). So, I was about to quarrel with him (during the prayer) but I waited till he finished, then I tied his garment around his neck and seized him by it and brought him to Allah's Apostle and said, "I have heard him reciting Surat-al-Furqan in a way different to the way you taught it to me." The Prophet ordered me to release him and asked Hisham to recite it. When he recited it, Allah s Apostle said, "It was revealed in this way." He then asked me to recite it. When I recited it, he said, "It was revealed in this way. The Qur'an has been revealed in seven different letters (ways), so recite it in the way that is easier for you". (https://sunnah.com/)

Some of the scholars say the phrase "seven different letters" refers to the different dialects used among Arabs at the time of the revelation, such as Quraisy,

Hudzail, Saqif, Hawazin, Kinanah, Tamim, Yaman and their different ways of pronunciation. Then Moslems in different mother tongue have easiness for reciting of *ayat* in the way is easy for them. The phenomenon of sound changes found in Arabic loanword has adjusted to English pronunciation based on the rules of sound changes (http://www.muslimdaily.net).

All human societies have language. People in the modern world has been worked out or has been borrowed the system to write their language. In the beginning, the writing used in magic rituals, astronomy and accounting; the ability to write messages with conventional symbols are new powers of human language even though writing is a slow process compared with the speech. However, spoken language has deficient cannot be found in written language. To receive a spoken message you have to be within hearing distance or message still do along the chain of speakers and listeners. To save a spoken message, you need an accurate memory. Writing has evolved from a picture-painting some 8,000 years ago. But with the development of writing, accurate and permanent record (letter and spelling) can be stored for long periods of time. At last, written language take the position of spoken language. Literature, history and the law were no longer a matter of oral tradition (Carney, 1997: 1). In addition, Heidi Harley says that "first thing has to do when considering the pronunciation of words is find a way to represent their pronunciation accurately in print "spelling" (2006: 21)".

In conclusion, it is clear how important to know how sound changes happen in borrowing language especially the words that borrowed by English from Arabic. As the subject, *Webster Third New International Dictionary* has chosen because

this dictionary writes etymology of English words that borrowed from foreign language. This research studies about phonological process that focused on the classification of sound change based on some types. Then, the primary objective of this research is to study sound changes. The data analysis is limited only to phonological processes and ignored the semantic meanings of the words.

1.2 Research Questions

based on explanation in the background, the writer formulates two research questions as follow:

1. How are sound changes applied in English word borrowed from Arabic?
2. How does Arabic alphabetic system transform into English?

1.3 Objectives of Study

In accordance with the problem statement, the study will discuss as follow:

1. To describe the sound change of Arabic loanword into English in each category.
2. To describe the transformation of Arabic alphabet into Roman alphabet.

1.4 Significance of Study

This study aims to find Arabic loanwords in English by comparing two languages to prove the words in English are derived from the Arabic. Then it analyzes both languages by using phonological approach to prove the phonological changes in Arabic loanwords in English.

In this research, the writer will provide information about the phonetics and phonology which are studied in linguistics. In hopes this research useful to the various parties. First, provide a reference for researchers who discuss the same

topic. Second, it provides more information to linguists and readers in understanding the sound changes that are present in the Arabic term that was adopted in English.

1.5 Literature Review

The writer has found previous research regarding to this topic. This is purposed to show that the writer's topic has different point of views. In this term, the writer divides the prior research into two parts. First is regarding to the data, second is correlating with sound change. Several research is presented as a proof that this study has not been done yet in the literature review.

Himawan (2005) entitled *Sound and Meaning Changes in Malay Loanwords in English*. This research is done by analyzing the Malay Loanwords in English in accordance with the phonological and semantics changes happen in English words. The method which is used to analyze the sound changes of the loanwords is by categorizing the data into some types of sound changes. As for the semantic changes, the equivalent analysis is used to analyze the data. The result shows that all Malay words undergo sound changing in the borrowing process. Meanwhile, for the meaning changes, there are some words maintaining their original meaning and the rest of the word undergo meaning changes.

Mubin (2009) entitled *Meaning Changes of Some Arabic Loanwords in English*. This research studies about the meaning changes of some Arabic words that entered Oxford English dictionary. The method of data analysis used in this research is by comparing semantic features of English loanwords and semantics

features of original word in Arabic. The result shows that most of the words do not undergo the meaning change.

Tutriana Ayu Sekarrosa's graduating paper (2014) entitled *The English Barrowing Words in Kompas Online Articles.* This research focuses on English borrowing words found in the business and sports articles of *Kompas Online* that accessed in *kompas.com*. The analysis based on the lexical borrowing classification by Juan Gomez Capuz which is studied about the changes in phonology, orthography, and morphology. Then, examine the equivalent between English loanwords and its possible counterpart in Bahasa Indonesia.

Ismail (2015) entitled *Perubahan Bunyi Kata Serapan Bahasa Arab dalam Bahasa Indonesia (Studi Kasus: KBBI).* This research studies about the sound changes of some Arabic words that entered Indonesian dictionary. Sound changes discussed is the change in sound that does not cause a change of meaning based on types of sound changes lenition, sound addition, Metathesis, fusion, unpacking (splitting), vowel breaking, assimilation and dissimilation by Terry Crowley (1987).

Hosam M. Darwish (2015) entitled *Arabic Loan Words in English Language*. This research is a survey article of borrowing language in English. Darwish starts at the term of loanword in which he quotes the definition of loanword from many linguists. The relation with Arabic loanwords in English, Darwish argues that Arabic language has contributed to the English language by different routes. As a result, English has loaned Arabic words in the fields of chemistry,

medicine, philosophy, mathematics, astronomy, games, physics, and botany. The adoptions depend on various scope views.

Astari (2015) entitled *Istilah Serapan Bahasa Inggris dalam Bahasa Arab Pada Bidang Sain dan Teknologi*. The research discusses the change of sound in the English loanword in Arabic. Using Sound Change Theory by Sloat (1978), it is called to the natural sound change process (a natural process). Natural process itself covers two major parts including assimilatory process consisting of *nasalization, nasal assimilation*, *palatalization, assibilation, intervocalic voicing, intervocalic weakening*, *vowel assimilation, umlaut*; and non-assimilatory process consisting of *rhotacism, breaking, vowel reduction, apocope, syncope, prosthesis, epenthesis, metathesis, and dissimilation.*

Sound changes in Arabic words adopted from English are adjusted to phonetics of Arabic. The research has found 39 vowel sounds change. Changes in term of English into Arabic were done by translation and adjustment patterns. The translation appears on the elements of suffixes and prefixes while adjusting the pattern seen in the formation of nouns and verbs. Prefixes and suffixes contained in English loanword by following the rules that have been established by the Institute of the Arabic language.

Astari also writes in international Journal on Studies in English Language and Literature (2016) entitled *The Transformation of Consonant Sound of English Loanwords into Arabic*. The research discusses sound change of English loanwords which are found in Arabic dictionary, online newspaper and several fields of study. The research concludes that, there are four types of sound transformation derived

from the typical process of articulation; the sound [g] into [k], [p] into [b], [s] into [z], [v] into [f]. Also, there are the distorted transformations of consonant sound to differentiate from another word meaning. The additional sound of Epenthesis type is the most commonly occurred because of the adjustment with the pattern of syllables and sound in Arabic.

Literature reviews presented above have similarities and differences from this paper in some ways. They are Focus on the study of phonetics and phonology in case of sound change. However, the differences are Ismail analyzes sound change Arabic loanwords found in Indonesian Dictionary. Astari discuses about the sound change of English loanword in Arabic, which is focused in consonant sounds. Himawan discusses the sound change of Malay loanwords in English and considers their meaning. Then in case of borrowing process, Sekarrosa studies about the changes in phonology, orthography, and morphology. And, Mubin studies the borrowing language in different approach. By comparing literature review above, this research will discuss the sound change of Arabic loanwords in English with transformation their alphabetic system.

1.6 Theoretical Approach

In developing language native may have difficulties in pronouncing foreign sound to produce words that are from foreign. Some adaptations are needed to pronounce and it causes the pronunciation undergo some changes. Every speech sound that comes from human oral discuss in the study of phonetics and phonology. On the other hand, historical linguistics divided sound change into two halves. "Regular sound changes take place systematically and in every instance of an

environment. Whereas, irregular sound changes are less common and quirky in nature" (nativlang.com).

According to Crowley, there are several types of sound changes. They are lenition and Fortition (weakening and strengthening), consisting of aphaeresis, apocope, syncope, cluster reduction, haplology and Sound addition consisting of excrescence, epenthesis or anaptyxis, and prosthesis. Beside lenition and sound addition, there are also metathesis, fusion, unpacking (splitting), vowel breaking, assimilation, dissimilation, and abnormal sound change (1992: 38-59). The theory of sound changes was proposed by Crowley is regarding the level of words, phrases and sentences. Sound change related to each level occurs in the borrowing process of the Arabic loanword.

1.7 Method of Research

1.7.1   Type of Research

This study intends to use a qualitative method. A qualitative research is a research done by not prioritizing numbers but put the depth appreciation of the interaction between concepts that are being studied empirically. In the different sentence, it can be stated that the number of the data can be ignored while the type of the data is an intensive concern. Even though it is only one data which represent one type, it can stand alone in the classification.

1.7.2   Data Sources

Data sources in this research are all of Arabic loanwords which are found in *Merriam Webster Third New International Dictionary.* Arabic dictionary is necessary to confirm Arabic terms that are borrowed by English.

1.7.3 Data Collecting Technique

To collect the data, the writer collects the words from list A to Z in the English dictionary by scanning carefully. Then, the words will be categorized in table of data write on word and phonetic transcription based on the dictionary.

1.7.4 Data Analysis Technique

In analyzing the data, the writer makes note of all words have been found and list the words. There are several steps by the writer analyzing the data:

a. Comparing the pronunciation of both languages in accordance with the phonetic transcription and orthography transcription.

b. Identifying what sound is changed in their pronunciations.

c. Determining the type of sound change in each category.

d. Analyzing the transformation of Arabic alphabet into Roman alphabet.

1.8 Paper Organization

This graduating paper consists of four chapters. The first chapter discusses the background of study, research questions, objectives of study, literature review, theoretical approach, method of research, and paper organization. The second chapter explains the theoretical background. The third chapter explains the findings and discussions. The last chapter is conclusion about the result of the analysis and the suggestion.

CHAPTER IV

CONCLUSION AND SUGGESTION

4.1 CONCLUSION

The analyses of the data have been done completely in the previous chapter. So the writer can conclude as the answer of the research questions of this research. This research has some results as follow:

The First, the writer finds 68 Arabic words which are borrowed by English through their process. All of data have analyzed based on theory of sound change by Terry Crowley, the data classified in different categories. They are lenition and fortition, sound addition, metathesis, fusion, unpacking, vowel breaking, assimilation, dissimilation, abnormal sound change.

There are 22 Arabic loanwords apply lenition or fortition. They are sixteen words apply lenition and six words apply fortition. The most of vowel sounds are weakened by lenition. The lenition of vowel that occurred in Arabic loanword can be centering vowel or lowering vowel, in which sound of [i/a] changes to [ə] or sound of [a/u] changes to [e/o]. The specific of lenition is deletions. They have thirteen cases in the category of sound deletion.

In type of sound addition, there are seven cases. They are four words have addition in the end of the word. It is applied in Arabic words which are ended an open syllable containing a long vowel (CVV), especially syllable in cluster alveolar followed by long front close vowel; then three cases placed in category of epenthesis. In which the additional occurs to break the syllable of word. However,

43

category of excrescence and prothesis are not found in borrowing process of Arabic loanword.

Metathesis is applied in one data. Six words take place in category of fusion. The category of unpacking which is the opposite of fusion has two cases. Five words are in category of assimilation. They apply partial assimilation while total assimilation is not found in English words that borrowed from Arabic. Then, there are twelve cases of sound change seem not to take place in any category is classified as abnormal sound change in which the analysis they take more than three ways in the process. However, the type of vowel breaking and dissimilation is not found in English words that borrowed from Arabic.

The second, to answer the next research question, the transformation of Arabic alphabet into Roman alphabet applies the transliteration of alphabet with pays attention on sound change that occurred. As simplify, it is word "عوار", in which the letter "و" sounded in labial-velar approximant followed by long front open vowel as [wā]. English writes in "V-E" caused by fortition in phoneme [w] to fricative and lenition by centering phoneme [a]. As a result it is spelled as A-V-E-R with suffix "age" that derives nouns to express an activity (or its result).

4.2   SUGGESTION

After concluding this research, the writer has done with phonetics analysis. The writer suggests that the other researchers make further research with same topic in other different etymologies. Regarding to the lexical borrowing process,

loanword itself is just one of the types of borrowings. The other researchers can develop the study of borrowing in other types. They are:

1. Semantic loanword, in which the process occurs in adapting the word of DL to the new meanings in RL.

2. Loan translation, in which the process of borrowing that RL uses a counterpart item-for-item of the DL.

3. Loan blends, in which one element is loaned and the other is native element.

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APPENDIX I

Word and Transcription

No	English	Phonetic	Arabic	Orthography Transcription	Type of Sound change
1	ad·mi·ral 28	\ˈad-m(ə-)rəl\	أمير البحار	Amīr al-bahr	Abnormal sound change
2	ado·be 28	\ə-ˈdō-bē\	الطوبة	al-tūba	Fusion
3	afreet 37	\ˈa ˌfēt, əˈf-\	عفريت	ʿifrīt,	Lenition
4	al·ba·tross 49	\ˈal-bə-ˌtròs, -ˌträs\	الغطّاس	al-ghattās	Abnormal sound change
5	al·che·my 50	\ˈalkəmē, -mi\	الكيمياء	al-kīmīāʾ	Fusion
6	al·co·hol 50	\ˈal-kə-ˌhòl\	الكحل	al-kuḥul	Lenition
7	al·cove 50	\ˈal-ˌkōv\	القبّة	al-qobba	Fusion
8	alem·bic 51	\ə-ˈlem-bik\	الانبيق	al-anbīq	Assimilation
9	al·fal·fa 52	\al-ˈfal-fə\	الفصفصة	al-fisfisa	Abnormal sound change
10	al·ge·bra 52	\ˈal-jə-brə\	الجبر	al-jabr	Addition
11	al·go·rithm 52	\ˈal-gə-ˌri-<u>th</u>əm\	الخوارزمي	al-khuwārizmī	Abnormal sound change
12	al·i·dade 53	\ˈa-lə-ˌdād\	العضادة	al-ʿiḍāda	Apocope
13	al·ka·line 54	\ˈal-kə-lən, -ˌlīn\	القلي	al-qalī	Addition
14	al·ma·nac 59	\ˈòl-mə-ˌnak, ˈal-\	المناخ	al-munākh	Lenition
15	am·ber 66	\ˈam-bər\	عنبر	ʿanbar	Assimilation
16	ar·se·nal 122	\ˈärs-nəl, ˈär-sə-\	دار صناعة	dār sināʿa	Abnormal sound change
17	ar·ti·choke 123	\ˈär-tə-ˌchōk\	الخرشوف	al-kharshūf	Abnormal sound change
18	as·sas·sin 130	\ə-ˈsa-sᵊn\	الحشيشية	al-hashīshīya	Abnormal sound change
19	at·tar 140	\ˈa-tər, ˈa-ˌtär\	عطر	ʿitr	Epenthesis
20	av·er·age 150	\ˈa-v(ə-)rij\	عوار /عوارية	ʿawārīyah	Fortition
21	az·i·mut 154	\ˈaz-məth, a-zə-\	السموت	al-sumūt	Fusion
22	bo·rax 255	\ˈbòr-ˌaks, -əks\	بورق	būraq	Unpacking
23	cal·i·ber 316	\ˈka-lə-bər, kə-ˈlē-\	قالب	qālib	Addition
24	can·dy 326	\ˈkan-dē\	قند / قندي	qand / qandī	Lenition
25	car·at 335	\ˈker-ət, ˈka-rət\	قيراط	qīrāt	Lenition
26	check 381	\ˈchek\	شاه	shāh,	Assimilation
27	ci·pher 408	\ˈsī-fər\	صفر	sifr	Epenthesis
28	cof·fee 439	\ˈkò-fē, ˈkä-\	قهوة	qahwa	Abnormal sound change
29	cot·ton 516	\ˈkä-tᵊn, ˈkɒt\	قطن	qutun	Epenthesis
30	crim·son 537	\ˈkrim-zən\	قرمزي	qirmizī	Metathesis
31	fen·nec 838	\ˈfe-nik\	فنك	fanak	Lenition
32	ga·zelle 942	\gə-ˈzel\	غزال	ghazāl	Lenition
33	ghoul 955	\ˈgül\	غول	ghūl	Fortition
34	gi·raffe 958	\jə-ˈraf\	زرافة	zarāfa	Apocope
35	ha·boob 1017	\hə-ˈbüb\	هبوب	habūb	Lenition
36	har·em 1034	\ˈher-əm\	حريم	harīm	Lenition
37	hash·ish 1037	\ˈha-ˌshēsh, ha-ˈshēsh\	حشيش	hashīsh	Lenition
38	hen·na 1056	\ˈhe-nə\	حنّاء	hinnāʾ	Cluster reduction

39	jar 1211	\ˈjär\	جرّة	jarra	Apocope
40	jas·mine 1211	\ˈjaz-mən\	ياسمين	yāsamīn	Syncope
41	jer·boa 1213	\jər-ˈbō-ə, jer-\	يربوع	yarbūʿ	Unpacking
42	jin·ni 1216	\ˈjē-nē, ˈji-, jə-ˈnē\	الجنّ	al-jinn	Abnormal sound change
43	lem·on 1293	\ˈlem.ən\	ليمون	laymūn	Fusion
44	loo·fah 1344	\ˈlü-fə\	لوف	lūf	Addition
45	macra·me 1354	\ˈma-krə-ˌmā\	مقرمة	miqrama	Lenition
46	mag·a·zine 1357	\ˈma-gə-ˌzēn, ˌma-gə-\	مخازن	makhāzin	Fortition
47	massage 1388	\mə·ˈsäj\	مسح	massa	Cluster reduction
48	mat·tress 1394	\ˈma-trəs\	مطرح	matrah	Fortition
49	mo·hair 1453	\ˈmō-ˌher\	المخيّر	al-mokhayyar	Abnormal sound change
50	mon·soon 1464	\ män-ˈsün,\	موسم	mawsim	Fusion
51	mum·my 1487	\ˈmə-mē\	موميا	mūmiyā	Haplology
52	mus·lin 1491	\ˈməz-lən\	موصلي	mawsilī	Abnormal sound change
53	na·dir 1499	\ˈnā-ˌdir, ˈnā-dər -iə\	نظير	naḍhīr	Fortition
54	or·ange 1585	\ȯrˈ ənj, är-, -ēnj\	نارنج	nāranj	Aphaeresis
55	ream 1891	\ ˈrēm\	رزمة	rizma	Cluster reduction
56	sa·fa·ri 1998	\sə-ˈfär-ē, -ˈfa-rē\	سفر	safarī	Lenition
57	saf·flow·er 1999	ˈsa-ˌflaȯ(-ə)r	عصفر	ʿusfur	Abnormal sound change
58	saf·fron 1999	\ˈsa-ˌfrän, -frən\	زعفران	zaʿfarān	Syncope
59	sash 2016	\ ˈsash\	شاش	shāsh	Assimilation
60	sher·bet 2094	\ˈshər-bət\	شربة	sharba(t)	Lenition
61	so·da 2163	\ˈsō-də\	سويدة	suwayda	Haplology
62	so·fa 2165	ˈsō-fə, -fē, -fi	صفّة	suffa	Lenition
63	sug·ar 2285	\ˈshu̇-gər\	سكّر	sukkar	Fortition
64	sul·tan 2289	\ˈsəl-tᵊn, -tən\	سلطان	sultān	Lenition
65	syr·up 2322	\ˈsər-əp, ˈsir-əp\	شراب	sharāb	Lenition
66	talc 2333	\ˈtalk\	طلق	talq	Assimilation
67	tare (Weight) 2341	\ˈter\	طرح	tarh	Cluster reduction
68	tar·iff 2341	\ˈta-rəf, ˈter-\	تعريف	taʿrīf	Cluster reduction

APPENDIX II

Guide to Pronunciation

Pronunciation Symbols

For more information see the Guide to Pronunciation.

ə	....	banana, collide, abut
ˈə, ˌə	....	humdrum, abut
ə	....	immediately preceding \l\, \n\, \m\, \ŋ\, as in battle, mitten, eaten, and sometimes open \ˈō-pᵊm\, lock and key \-ᵊŋ-\; immediately following \l\, \m\, \r\, as often in French table, prisme, titre
ər	....	further, merger, bird
ˈər-, ˈə-r	....	as in two different pronunciations of hurry \ˈhər-ē, ˈhə-rē\
a	....	mat, map, mad, gag, snap, patch
ā	....	day, fade, date, aorta, drape, cape
ä	....	bother, cot
är	....	car, heart, bazaar, bizarre
aů	....	now, loud, out
b	....	baby, rib
ch	....	chin, nature \ˈnā-chər\
d	....	did, adder
e	....	bet, bed, peck
er	....	bare, fair, wear, millionaire
ˈē, ˌē	....	beat, nosebleed, evenly, easy
ē	....	easy, mealy
f	....	fifty, cuff
g	....	go, big, gift
h	....	hat, ahead
hw	....	whale as pronounced by those who do not have the same pronunciation for both *whale* and *wail*
i	....	tip, banish, active
ir	....	near, deer, mere, pier
ī	....	site, side, buy, tripe
j	....	job, gem, edge, join, judge
k	....	kin, cook, ache
ḵ	....	German ich, Buch; one pronunciation of loch
l	....	lily, pool
m	....	murmur, dim, nymph
n	....	no, own
ⁿ	....	indicates that a preceding vowel or diphthong is pronounced with the nasal passages open, as in French *un bon vin blanc* \œⁿ-bōⁿ-vaⁿ-bläⁿ\
ŋ	....	sing \ˈsiŋ\, singer \ˈsiŋ-ər\, finger \ˈfiŋ-gər\, ink \ˈiŋk\

ō	....	bone, know, beau
ȯ	....	saw, all, gnaw, caught
œ	....	French boeuf, feu, German Hölle, Höhle
ȯi	....	coin, destroy
ȯr	....	boar, port, door, shore
p	....	pepper, lip
r	....	red, rarity
s	....	source, less
sh	....	as in shy, mission, machine, special (actually, this is a single sound, not two); with a hyphen between, two sounds as in *grasshopper* \ˈgras-ˌhä-pər\
t	....	tie, attack, late, later, latter
th	....	as in thin, ether (actually, this is a single sound, not two); with a hyphen between, two sounds as in *knighthood* \ˈnīt-ˌhůd\
t̲h̲	....	then, either, this (actually, this is a single sound, not two)
ü	....	rule, youth, union \ˈyün-yən\, few \ˈfyü\
ů	....	pull, wood, book
ue	....	German füllen, hübsch, fühlen, French rue
ůr	....	boor, tour, insure
v	....	vivid, give
w	....	we, away
y	....	yard, young, cue \ˈkyü\, mute \ˈmyüt\, union \ˈyün-yən\
ʸ	....	indicates that during the articulation of the sound represented by the preceding character, the front of the tongue has substantially the position it has for the articulation of the first sound of *yard*, as in French *digne* \dēnʸ\
z	....	zone, raise
zh	....	as in vision, azure \ˈa-zhər\ (actually, this is a single sound, not two); with hyphen between, two sounds as in *hogshead* \ˈhȯgz-ˌhed, ˈhägz-\
\	....	reversed virgule used in pairs to mark the beginning and end of a transcription: \ˈpen\
ˈ	....	mark preceding a syllable with primary (strongest) stress: \ˈpen-mən-ˌship\
ˌ	....	mark preceding a syllable with secondary (medium) stress: \ˈpen-mən-ˌship\
-	....	mark of syllable division
( )	....	indicate that what is symbolized between is present in some utterances but not in others: *factory* \ˈfak-t(ə-)rē\
÷	....	indicates that many regard as unacceptable the pronunciation variant immediately following: *nuclear* \ˈnü-klē-ər, ˈnyü-, ÷-kyə-lər\

(Gove, 1976: 30a)

APPENDIX III

Transliteration of Alphabet

ALPHABET TABLE

Showing the letters of five non-Roman alphabets and the transliterations used in the etymologies

HEBREW[1,2]			ARABIC[3,4]							GREEK[7]			RUSSIAN[6]			SANSKRIT[11]			
א	aleph	', '	ا	ﺍ				alif	'	A α	alpha	a	А а	a	अ	a	न	ñ
ב	beth	b, bh	ﺏ	ﺐ	ﺒ	ﺑ	bā	b	B β	beta	b	Б б	b	आ	ā	ट	t
ג	gimel	g, gh	ﺕ	ﺖ	ﺘ	ﺗ	tā	t	Γ γ	gamma	g, n	В в	v	इ	i	ठ	th
ד	daleth	d, dh	ﺙ	ﺚ	ﺜ	ﺛ	thā	th				Г г	g	ई	ī	ड	ḍ
ה	he	h	ﺝ	ﺞ	ﺠ	ﺟ	jīm	j	Δ δ	delta	d	Д д	d	उ	u	ढ	ḍh
ו	waw	w	ﺡ	ﺢ	ﺤ	ﺣ	ḥā	ḥ	E ε	epsilon	e	Е е	e	ऊ	ū	ण	ṇ
ז	zayin	z	ﺥ	ﺦ	ﺨ	ﺧ	khā	kh				Ж ж	zh	ऋ	r	त	t
ח	heth	ḥ	ﺩ	ﺪ			dāl	d	Z ζ	zeta	z	З з	z	ॠ	ṝ	थ	th
ט	teth	ṭ	ﺫ	ﺬ			dhāl	dh	H η	eta	ē	И и Й й	i, ǐ	ऌ	ḷ	द	d
י	yod	y	ﺭ	ﺮ			rā	r	Θ θ	theta	th	К к	k			ध	dh
כ ך	kaph	k, kh	ﺯ	ﺰ			zāy	z	I ι	iota	i	Л л	l	ॡ	ḹ	न	n
ל	lamed	l	ﺱ	ﺲ	ﺴ	ﺳ	sīn	s	K κ	kappa	k	М м	m				
מ ם	mem	m	ﺵ	ﺶ	ﺸ	ﺷ	shīn	sh	Λ λ	lambda	l	Н н	n	ए	e	प	p
נ ן	nun	n	ﺹ	ﺺ	ﺼ	ﺻ	ṣād	ṣ	M μ	mu	m	О о	o	ऐ	ai	फ	ph
ס	samekh	s	ﺽ	ﺾ	ﻀ	ﺿ	ḍād	ḍ	N ν	nu	n	П п	p	ओ	o	ब	b
ע	ayin	'	ﻁ	ﻂ	ﻄ	ﻃ	ṭā	ṭ	Ξ ξ	xi	x	Р р	r	औ	au	भ	bh
פ ף	pe	p, ph	ﻅ	ﻆ	ﻈ	ﻇ	ẓā	ẓ	O o	omicron	o	С с	s	ं	ṁ	म	m
צ ץ	sadhe	ṣ	ﻉ	ﻊ	ﻌ	ﻋ	'ayn	'	Π π	pi	p	Т т	t	ः	ḥ	य	y
ק	qoph	q	ﻍ	ﻎ	ﻐ	ﻏ	ghayn	gh	Ρ ρ	rho	r, rh	Ф ф	f	क	k	र	r
ר	resh	r	ﻑ	ﻒ	ﻔ	ﻓ	fā	f	Σ σ ς	sigma	s	Х х	kh	ख	kh	ळ	l
ש	sin	ś	ﻕ	ﻖ	ﻘ	ﻗ	qāf	q	T τ	tau	t	Ц ц	ts	ग	g	व	v
ש	shin	sh	ﻙ	ﻚ	ﻜ	ﻛ	kāf	k	Υ υ	upsilon	y, u	Ш ш	sh	घ	gh	श	ś
ת	taw	t, th	ﻝ	ﻞ	ﻠ	ﻟ	lām	l	Φ φ	phi	ph	Щ щ	shch	ङ	ṅ	ष	ṣ
			ﻡ	ﻢ	ﻤ	ﻣ	mīm	m	Χ χ	chi	ch	Ъ ъ	ʺ	च	c	स	s
			ﻥ	ﻦ	ﻨ	ﻧ	nūn	n	Ψ ψ	psi	ps	Ы ы	y	छ	ch	ह	h
			ﻩ	ﻪ	ﻬ	ﻫ	hā	h	Ω ω	omega	ō	Ь ь	'	ज	j		
			ﻭ	ﻮ			wāw	w				Э э	e	झ	jh		
			ﻱ	ﻲ	ﻴ	ﻳ	yā	y				Ю ю	yu				
												Я я	ya				

(Gove, 1976: 61)

APPENDIX IV

CURRICULUM VITAE

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