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RAISING OF [æ] AND [æ:] IN THE LEBANESE VARIETY  
OF MAHROUNA, TYRE: PHONOLOGICAL,  
MORPHOLOGICAL, AND LEXICAL CONDITIONING

by  
REEM HANI WEHBE

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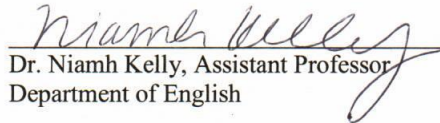
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## AN ABSTRACT OF THE THESIS OF

Reem Wehbe            for            Master of Arts  
Major: English Language

Title: Raising of [æ] and [æ:] in the Lebanese variety of Mahrouna, Tyre: Phonological, morphological, and lexical conditioning

The purpose of this study was to examine the phonological, lexical, and morphological conditionings governing the phonological phenomenon of raising of low front vowels [æ] and [æ:] towards either mid front vowels [e] and [e:] or high front vowels [i] and [i:] in medial and final positions in the spoken Lebanese Arabic variety of Mahrouna. The study also investigated age and gender differences in the usage of the raised variants of [æ] and [æ:]. Woidich (2011) and Walters (1991) found that there are gender differences in the raising of [æ]/[æ:] and [a]/[a:] in Cairene and Tunisian varieties respectively. Walters (1991) also found that the raising patterns of [a]/[a:] differs between the young and old generations in Tunisia. Participants in this study were 35 speakers (18 males and 17 females) belonging to three age groups (18-40, 41-64, and 65-84 years). Data were collected through tape-recorded interviews and were analyzed qualitatively.

Results showed that the raising phenomenon occurs when [æ] or [æ:] are not adjacent to emphatic ([s], [d], [t], and [z]), [r], guttural ([ʔ], [ħ], and [ʕ]), and velar sounds ([x] and [ɣ]). The raising phenomenon could occur twice in medial positions or in two positions: one in medial position and one in final position for reasons of vowel harmony. Results also showed there are no gender differences in the raising of [æ] and [æ:] in medial and final positions. That is, both men and women raise [æ]/[æ:] towards [e]/[e:] or [i]/[i:] in medial positions and towards [e]/[e:] or [i] in final positions. The choice of [e]/[e:] or [i]/[i:] is determined by the age of a speaker, and speakers of Mahrouna could be divided into two age groups: 18-68 and 79-84 years old. People belonging to the 18-68 age group raise [æ]/[æ:] towards [e]/[e:] in medial and final positions, while people belonging to the 79-84 age group raise [æ]/[æ:] towards [i]/[i:] in medial positions and towards [i] in final positions.

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# CHAPTER I

## INTRODUCTION

Lebanese Arabic consists of several urban and rural varieties. Urban varieties are usually used in media and have more prestige than rural varieties. This study focused on the rural variety of Mahrouna. Mahrouna is a very small village that has one public school, one mosque, and five small shops. It has a population of around 3,800 people, and all inhabitants are Shiites. It is located in the governate of Tyre in South Lebanon, situated approximately 18 kilometers southeast of Tyre and 100 kilometers southeast of Beirut (Figure 1).

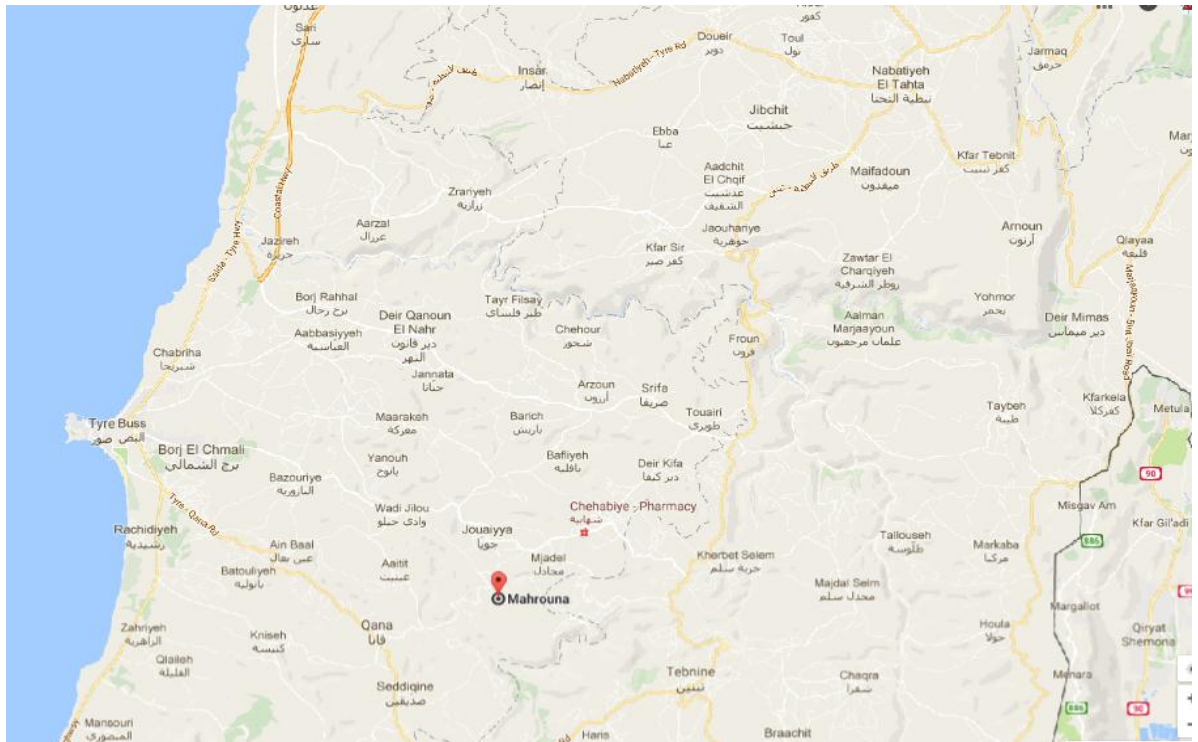


Figure 1: Location of Mahrouna in South Lebanon Governorate

### A. Description of the Speech Community

People of Mahrouna traditionally worked in farming and agriculture. They used to sell their crops in nearby villages, raise domestic animals to sell their products, and make

their own year-supply of fruit jam. Weddings in Mahrouna used to last for seven days and people danced the traditional Lebanese dance “dabke” in the main square of the village. Funerals, on the other hand, lasted even longer: in case of deaths, the whole village mourned the deceased and stopped eating meat for forty days.

Due to the Israeli invasion of Lebanon in 1982, many people of Mahrouna moved to Beirut for security reasons and to look for job opportunities. They resided in two neighborhoods: Shayyah and Burj Hammoud. At that time, men either worked in the municipality of Beirut or opened grocery stores or small shops to sell clothes. They all sent their kids to the same school in Ghobeiry in the southern suburb of Beirut.

After the liberation of South Lebanon from the Israeli occupation in 2000, the old people returned to the village and opened shops in Tyre. The middle-aged generation, however, remained in Beirut for their kids’ schooling. After the war of July 2006, some of those people moved back to Mahrouna, for their homes in Shayyah were destroyed. Although people’s migration to Beirut led to a change in the customs of the village, people’s mentality is still the same: married women are still not allowed to enter the labor force. While men work in nearby villages, women stay at home. Children and adolescents attend schools in nearby villages, and university students study at the Lebanese University in Tyre.

A linguistic comparison between the younger and older generations in Mahrouna shows a clear change in the linguistic repertoire of the people. Arabicized terms as [mdæbris] < [mdæpris] (in urban varieties) ‘I am depressed’, educated expressions in the form of borrowings from Standard Arabic like [qamoʕ] ‘suppression’ and French and English greetings like [bonʒu:r] ‘good morning’ and [hai] ‘hi’ are only evident in the speech of the young generation.

People of Mahrouna visit Beirut on special occasions, like weddings, funerals, and Islamic holidays. Similarly, many people from Mahrouna who live in Beirut visit the village on the same occasions and/or on weekends.

### **B. Raising of [æ] and [æ:] in the Levant**

The Modern Standard Arabic short vowel /a/ and long vowel /a:/ have different allophones depending on the phonological environments surrounding them. In Lebanon, [æ] and [æ:] are the unmarked allophones; they are realized as [a] and [a:] next to emphatic sounds ([ʂ], [d], [t], and [z]) and [r]. They are also raised towards [e] and [e:] in urban varieties and towards [i]/[o] and [i:]/[o:] in rural varieties in certain phonological environments. The phonological phenomenon of raising occurs in medial and final positions in Lebanese varieties. Several studies on Lebanese dialects (el-Hajje, 1957; Jiha, 1964; Lakkis, 1987; Naim, 2011; Riman, 2008) noted the occurrence of raising phenomenon in the spoken varieties of Tripoli, al-Koura, Baalbeck, Beirut, and Shouf respectively; the studies listed the variants of raised [æ] and [æ:] and gave few examples. However, the studies neither discussed the phonological or lexical environments governing the raising nor identified whether certain factors such as age, gender, and education affect the raising phenomenon.

Raising is also a common phonological phenomenon in the Levant. Habib (2012) found that urban vowel phonemes [a] and [a:] are raised towards [e]/[o] and [e:]/[o:] respectively in the Syrian variety of Oyoun al-Wadi. Similarly, in Jordan [a] and [a:] are raised towards [e] and [e:] respectively (al-Wer, 2011). Finally, [a] and [a:] are raised towards [e] and [e:] in urban Palestinian varieties and towards [i] and [i:] in rural dialects (Shahin, 2011).

### C. The linguistic Features of the Spoken Variety of Mahrouna

Unlike some rural Lebanese dialects spoken in Baskinta (Abu Haidar, 1979) and Shouf (Riman, 2008), and similar to the urban dialect of Beirut (Naim, 2011), diphthongs /aw/ and /ay/ are reduced to [o:] and [e:] respectively in the variety of Mahrouna, like [yo:m] < [yæwm] (in Modern Standard Arabic) ‘day’ and [be:t] < [bæyt] ‘house’.

Negation in Mahrouna is formed by adding the negative particle [mæ] before a verb, like [mæ: be:kol]; adding also the suffix [iʃ], like [mæ: be:kiliʃ] which sometimes is abbreviated to [be:kiliʃ]. Negation is also formed using the negative particle [miʃ], like [miʃ meʃe] ‘not with me’ and [miʃ ʔili] ‘not for me’. Finally, there are two vowel series in the Lebanese Arabic variety of Mahrouna, five short vowels: /æ/, /e/, /i/, /o/, and /u/ and five long vowels: /æ:/, /e:/, /i:/, /o:/, and /u:/. F1 and F2 of [æ]/[æ:], [a]/[a:], [e]/[e:] and [i]/[i:] that are produced by a 32-year old female from Mahrouna were measured in isolation. Appendix C shows the location of the sounds according to their formant measurements and Appendix D shows a visual representation of these sounds using PRAAT spectrograms.

	bilabial	labio-dental	alveolar	alveo-palatal	palatal	velar	uvular	pharyngeal	glottal
Stop	b		t d ṭ ḍ			k	q		ʔ
Nasal	m								
Fricative		f	s z ṣ ẓ	ʃ ʒ		x ɣ		ħ ʕ	h
lateral			l						
trill			r						
Glide	w				y				

Table 1: Consonant phonemes of the variety of Mahrouna



	Front		Central		Back	
	Short	Long	Short	Long	Short	Long
High	i	i:			u	u:
Mid	e	e:			o	o:
Low			æ	æ:	a	a:

Table 2: Vowel phonemes of the variety of Mahrouna

#### D. Focus of the Study

The phonological phenomenon of raising predominantly occurs in Arabic varieties, and ancient grammarians used the term *ʔima:la* to refer to it. The raising phenomenon was firstly described in the eighth century and many ancient grammarians and contemporary linguists described its occurrence in several Arabic dialects; however, only two linguists described the conditions governing or inhibiting its occurrence based on empirical data. Shalbai (1957) and Habib (2012) described the raising of [a] and [a:] in Egypt and in a rural Syrian dialect respectively. Since there has not been any empirical study on raising phenomenon in South Lebanon, this study investigated the phonological, morphological, and lexical conditionings that govern the raising of [æ] and [æ:] in Mahrouna in Tyre, South Lebanon.

In addition, Shalabi (1957) collected data from Egyptians without specifying their gender or age, and Habib (2012) collected data from interviews with kids and adolescents. However, since literature has reported the existence of phonetic variants as a function of speaker's age (Chambers and Trudgill, 2004) and gender (Woidich, 2011), this study compared the variants of raised [æ] and [æ:] in the speech of males and females and in the speech of three different age groups.

## CHAPTER II

### LITEARTURE REVIEW

#### A. Introduction

The spread of Arabs and Arabic in the Middle East and North Africa during the Arabic-Islamic expansion (Owens, 2006), mainly in Egypt, Morocco, Iraq, and the Levant, led to dialect levelling in those areas (Anis, 1940). Arabic dialects of the Arabian Peninsula maintained traces of former languages spoken in these areas before the advent of Islam, like Berber in Morocco, Aramaic in the Levant and Iraq, and Coptic in Egypt (Anis, 1940). Sibawayhi, a native Persian speaker living in Basra in modern Iraq, learnt about different varieties of Arabic from people of Basra in the 8<sup>th</sup> century (Owens, 2006). Contemporary linguists consider Sibawayhi's studies as the benchmark when comparing any linguistic phenomenon between old and modern Arabic dialects (Owens, 2006), like the phonological phenomenon of *ʔima:la* (Owens, 2006).

The following literature review provides a historical background of the traditional definition of the term *ʔima:la*, its variants, and phonological and morphological conditions that govern its occurrence or inhibition in Old, Middle, and Modern Arabic.

Arabic short vowels, like vowels of most of Semitic languages, are not represented in writing (Freiha, 1955; Freiha, 1989; Versteegh, 1997), though modern linguists have added diacritics (حركات) to represent them, as in مَ (ma), مِ (mi), and مُ (mu). Long vowels are represented orthographically as [u:] (e.g. يكون 'to be'), [i:] (e.g. دين 'religion'), and [a:] (e.g. قال 'he said'). Classical and Modern Standard Arabic have three short vowels: high front (palatal) /i/, low central /a/, and high back (velar) /u/, their counterpart long vowels: /i:/, /a:/, and /u: /, and 28 consonants (Appendix B) (Brierley et al, 2016; Shalabi, 1957;

Versteegh, 1997), including /wa:w/ ‘/w/’, /ya:ʔ/ ‘/y/’, and /hæmza/ ‘/ʔ/’ (Brierley et al, 2016; Shalabi, 1957). Medieval grammarians considered /ʔælif/ ‘/a:/’ to be a consonant, whereas modern linguists and grammarians consider /hæmza/ ‘/ʔ/’ to be the consonant instead (Brierley et al, 2016). However, both ancient and modern grammarians share a similar description of tongue positions of Arabic vowels (Newman, 2002).

Grammarians considered long vowels to be an amalgamation of a short sound and a glide (Versteegh, 1997). Arabic has two glides: palatal y /j/ and velar /w/ (Watson, 2007). Short and long vowels are allophones of the same phoneme with variation in length (Anis, 1940; Shalabi, 1957); long vowels seem twice longer than short phonemes (al-Ani, 1970). Classical and Modern Arabic vowels have different allophones (Versteegh, 1997), and higher vowels have less allophones than lower ones (al-Ani, 1970).

Vowels have more acoustic energy than consonants, and characteristics that form vowels are more stable and prominent than those of consonants (al-Ani, 1970). The phonetic phenomenon *emphasis*, which was primarily discussed by grammarians in the eighth century (al-Ani, 1970), is characterized by having two points of articulation: dento-alveolar region (primary point) and upper region of the pharynx (secondary point) (al-Ani, 2011; Davis, 1995). Several terms were used to refer to consonants with emphasis, like velarized, emphatic, and pharyngealized consonants (al-Ani, 1970; al-Ani, 2011; Davis, 1995). Emphatic sounds are evident and vary among Arabic dialects (al-Ani, 1970) because the pattern of spread of emphasis differs between one dialect and another (al-Ani, 2011; Davis, 1995). Emphasis might spread throughout the whole word (e.g. in the Cairene dialect), rarely spreads beyond a neighboring vowel (as in the dialect of Abha in southern Saudi Arabia), spreads leftward from the emphatic consonant to the beginning of the word (as in a rural northern Palestinian dialect), or spreads rightward (like in most of

Arabic dialects) (Habib 2012; Davis, 1995). Herzallah (1990) found that emphasis spreads leftward in a rural Palestinian dialect from the emphatic sound to the beginning of the word, whereas rightward spread is restricted to a following low vowel.

### **B. Traditional Definition of the Term *ʔima:la***

Medieval Arab grammarians used the term *ʔima:la* to refer to the fronting and raising of short [a] and long [a:] in Old Arabic towards short [i] and long [i:] respectively in the presence of [i] in an adjacent syllable (Brustad, 2000; Levin, 1992; Levin, 2011; Ṭabni, 2012). *ʔima:la* was considered a valid sound used in Qur'an recitations (Habib, 2012; Levin, 2011; Owens, 2006; Shalabi, 1957; Ṭabni, 2012) and poetry readings (Levin, 2011). Old Arabic sources show that *ʔima:la* of short [a] was ignored (Habib, 2012; Levin, 1978; Levin, 1992; Levin, 2011; Shalabi, 1957), unless [a] was in the direct proximity of [r] (Levin, 1992; Owens, 2011). The fronting, according to Sibawayhi, affected long [a:] and the preceding consonant (as cited in Levin, 2011).

Habib (2005), Habib (2012), Levin (1992), Levin (2011), Owens (2006), and Ṭabni, (2012) stated that Sibawayhi was the first grammarian to discuss conditions governing *ʔima:la*. Owens (2006) added that *ʔima:la* is one of the most complicated phonological phenomena Sibawayhi had discussed. However, as-Soyouti, an old Arab grammarian, claimed that al-Duʔali, creator of Arabic linguistics (Hassan & Heselwood, 2011), was the first to discuss *ʔima:la* (Shalabi, 1957). Even though as-Soyouti's claim could be correct, the term '*ʔima:la*' was coined by Sibawayhi (Owens, 2006).

Several medieval Arab grammarians and Qur'an readers found interest in studying *ʔima:la*, like Abu ʔUbaid al-Kasem in 233 A.H., Abu at-Tayyeb Bin Ghalaboun in 385 A.H., Abu Baker al-Adfawa in 388 A.H., Makki Ibn Abi Taleb in 437 A.H., Abi ʔamro ad-Dani in 444 A.H., and many others (Shalabi, 1957). Shalabi (1957) and Levin (2011)

indicated that grammarians described *ʔima:la* in light of Sibawayhi's conditions and descriptions. Abu Baker Bin as-Siraj collected Sibawayhi's work on *ʔima:la* in 386 A.H. and as-Soyouti wrote them down (Shalabi, 1957). Anis (1940) was the first to describe *ʔima:la* in modern dialects. All studies done on *ʔima:la* were descriptive, except for two empirical ones: Shalabi (1957) and Habib (2012). Grunert, a German dialectologist, was the first western grammarian to describe *ʔima:la* in 1875 (Shalabi, 1957).

*ʔima:la* was not a common linguistic feature among all tribes of the Arabian Peninsula. It was present in the repertoire of Nejdī tribes of Saudi Arabia (Anis, 1940; Ṭabni, 2012; Versteegh, 1997) that have settled in the middle and eastern parts of the peninsula, like Tami:m, Asad, and Taghlob (al-Rajehi, 1969; Anis, 1940; Yazbik, 2013). However, in the western parts of the peninsula, mainly among Hijazi tribes, like Quraysh, Hawazan and Kanana, *fetiḥ* was present instead of *ʔima:la* (Anis, 1940). The term *fetiḥ* refers to the pronunciation of short [a] and long [a:] in Old Arabic as low central vowels (Shalabi, 1957). Grunert (1875) and Shalabi (1957) noted that Qur'an readers were the first to discuss the phonological difference between *fetiḥ* and *ʔima:la*.

Ibn Mujahid (703) represented *ʔima:la* by the orthographic mark of a *kasra* before *ʔælif*, like مِال 'money'; Sibawayhi, on the other hand, presented *ʔima:la* by a straight line written under the line before the *ʔælif*, like مِال (Owens, 2006).

Successors of Sibawayhi defined *ʔima:la* differently. Az-Zujaji (339 A.H.), Makki Bin Abi Taleb (437 A.H.), ad-Dani (444 A.H.), Ibn al-Ṣanbari (577 A.H.), Ibn aj-Jazri, Ibn ṢAkil, and as-Soyouti defined *ʔima:la* as the fronting and raising of [a:] towards [i:] and [a] towards [i] (as cited in Shalabi, 1957). Ibn al-Ḥajeb and al-Jarajani, on the other hand, limited their definition of *ima:la* to the raising and fronting of [a] towards [i] (as cited in

Shalabi, 1957). Finally, az-Zamakhshari defined *ʔima:la* as the raising of [a:] towards [i:] (al-Mussawi, 2008; Owens, 2006)

Al-Imam al-Jaʔbari and Abi al-ʔalaʔ distinguished between ‘intense *ʔima:la*’ (*ʔima:la* variant is [i]) and ‘weak *ʔima:la*’ (*ʔima:la* variant is [ɛ]) (as cited in Shalabi, 1957). Ibn Jinni added another two vowel variants of *ʔima:la* which are [ɪ] and [ʊ], as in [biʔa] and [buʔa] ‘passive form of sold in the past tense’ (al-Mussawi, 2008; Yazbik, 2013). Raising towards these two variants is called ‘*ʔifmæ:m*’; and only two Qur’an readers, al-Kisæ:ʔi: and Hisham, showed this phonological phenomenon in their readings (al-Mussawi, 2008; Mehjazi, 2013; Yazbik, 2013).

Sibawayhi defined *ʔifmæ:m* as an auditory feature that occurs without emitting a sound (as cited in al-Mussawi, 2008; Nawāṣera, 2005; Owens, 2006). It occurs by adding a trace of [i] to the pronunciation of a phoneme (Wehr, 1974). It was present in the passive form of weak verbs (base form of the verbs consists of two consonants and medial /a:/), as [qi:la] ‘passive form of said in the past tense’ and [ji:ʔa] ‘passive form of came in the past tense’ (Yazbik, 2013).

Ibn Manzoor and Ibn Hisham distinguished between the raising of short /a/ and long /a:/. They primarily defined *ʔima:la* as the raising of /a:/ towards [i:]; then after their distinction between the two vowels, they refined their definitions. Ibn Hisham stated that [i] and [i:] are the raised allophones of /a/ and /a:/ respectively, as in [fati:] ‘boy’ and [neʔmih] ‘grace’ (as cited in Shalabi, 1957). Ibn Manzoor, on the other hand, stated that long /a:/ was raised because of the raising of short /a/ towards [i] in the same word for phonological assimilation, as in [ʔa:bid] ‘worshipper’ (as cited in Shalabi, 1957).

Al-Mussawi (2008), Levin (2011), Nawāṣera (2005), Shalabi (1957), and Ṭabni (2012) asserted that *ʔima:la* is a form of sound assimilation, since pronunciation of long

[a:] is affected by pronunciation of sounds in its direct proximity. Anis (1940) and Yazbik (2013) mentioned that assimilation was produced primarily by speakers of primitive environments who did not give a correct phonological realization of each phoneme in their utterances. Sibawayhi, Ibn Jinni, and Az-Zamakhshari stated that *ʔima:la* is similar to *'idya:m* 'consonant assimilation' because one's tongue is inclined so that phonetic alignment of [a:] is set to look like that of [i] (Habib, 2012; Levin, 2011; Nawāṣera, 2005; Owens, 2006; Shalabi, 1957). Levin (2011), Owens (2005), and Owens (2006) stated that *ʔima:la* is similar to vowel harmony. Ṭabni (2012), Anis (1940), Ibn aj-Jazri (as cited in Shusha, 2014), Shantouf (2010), al-Mussawi (2008) and Shalabi (1957) added that *ʔima:la* happens for ease of articulation.

Grammarians and linguists did not agree whether *fetiḥ* or *ʔima:la* was the original pronunciation of short [a] and long [a:] in Old Arabic (Nawāṣera, 2005; Shalabi, 1957). For instance, Ibn Jinni claimed that *fetiḥ* was the origin (Nawāṣera, 2005; Shalabi, 1957). Levin (1992) stated that when *ʔima:la* occurred in certain phonological environments, it was a legitimate phenomenon of the normative point of view and any deviation from those conditionings was considered an error. Ibn aj-Jazri mentioned that low central [a] and [a:] were more common and frequent in Old Arabic than their counterpart raised vowels, and every raised variant of [a] and [a:] could be lowered, but not vice versa (al-Rajeḥi, 1969; Shalabi, 1957). Anis (1940) considered that *fetiḥ* was older than *ʔima:la* in some cases, and vice versa in other cases. Finally, Ibn aj-Jazri considered *fetiḥ* and *ʔima:la* to be original allophones of short /a/ and long /a:/ since there should be conditionings governing the occurrence of each phenomenon (as cited in Nawāṣera, 2005).

### C. Conditionings of *ʔima:la* in Old Arabic

*ʔima:la* in Old Arabic dialects occurred in medial and final positions with different factors conditioning each (Levin, 2011). *ʔima:la* in final positions, as *ʔima:la* of short [a], was not described elaborately. Sibawayhi stated that it was not conditioned by the presence of *i* or *ya:ʔ* in a syllable preceding *a:* and was not inhibited when emphatics or uvulars (i.e., [s], [d], [t], [z] [x], [ɣ], and [q]) preceded /a:/, like [muʕ ʔa:] ‘given’ and [hubla:] ‘pregnant’. It occurred in words that had pausal form of feminine suffix /a:t/, like [darba:h] ‘one act of striking’, in a limited number of Iraqi dialects (as cited in Levin, 2011). As-Sirafi, Sibawayhi’s commentator in the tenth century, indicated that it occurred in Mosul, al-Basra, and al-Ku:fa (as cited in Levin, 2011).

On the other hand, according to Sibawayhi, medial *ʔima:la* (henceforth, *ʔima:la*) had three types of different conditions (as cited in Levin, 2011; Shalabi, 1957):

- a. *ʔima:la* in Old Arabic was conditioned by vocalic surroundings of /a:/. That is, *ʔima:la* occurred if [i] or [i:] were adjacent to /a:/, as in [ʕa:bid] ‘worshipper’ and [kila:b] ‘dogs’. Sibawayhi also added that some speakers raised /a:/ that followed /yæ:ʔ/, as *bayya* ‘[bajja:ʕ] ‘seller’.
- b. *ʔima:la* also occurred in three-letter nouns and was conditioned by consonantal environments. The two consonants surrounding /a:/ had to be front consonants, as in [ba:b] ‘door’. Front consonants are the non-emphaticized consonants.

Saurow (1908, as cited in Levin, 2011) was the first to shed light on Sibawayhi’s identification of two types of medial *ʔima:la*. While vocalic *ʔima:la* (first type) occurred in dialects of eastern tribes of the peninsula, like Asad, Tami:m, and Qays, Saurow did not specify the tribes that had consonantal *ʔima:la* in their repertoire.



- c. *ʔima:la* also occurred in medially weak verbs to indicate whether the origin of /a:/ was /wa:w/ ‘/w/’ or /ya:ʔ/ ‘/y/’, as in *xa:fa* ‘he was scared’ (as cited in Habib, 2012; Corriente, 1977; Jastrow, 1978; Owens, 2006; Sibawayhi). This type of *ʔima:la* was not conditioned by vocalic or consonantal conditions. Long /a:/ was raised towards [i] in 1<sup>st</sup> and 2<sup>nd</sup> person of verbs, as [xiftu] ‘I was scared’ and [xifna] ‘we were scared’.

Furthermore, Sibawayhi found a relation between the frequency of occurrence of a word and the occurrence of *ʔima:la* (as cited in al-Nassir, 1993; Mehjazi, 2013; Shalabi, 1957). For instance, *ʔima:la* occurred in [an-na:s] ‘the people’, though /a:/ was neither followed nor preceded by [i] or [i:] (as cited in Levin, 2011, Nawasera, 2005; Owens, 2005; Shalabi, 1957). He identified this *ʔima:la* as exceptional because of the frequent usage of the word (as cited in Owens, 2005). In addition, *ʔima:la* occurred in [ħudʒa:dʒ] ‘proper noun; pilgrims as an adjective’ when the word was used as a proper noun but did not occur when it was used as an adjective (as cited in Habib, 2012; Levin, 2011; Shalabi, 1957). Nouns usually bear *ʔima:la* more than other word classes (as cited in Habib, 2012). However, Hamza and al-Kisæ:ʔi: raised final /a:/ in all words of the Qur’an (al-Rajehi, 1969; Yazbik, 2013).

Grammarians of the eighth century used Sibawayhi’s conditions governing the occurrence or inhibition of *ʔima:la* to discuss it in certain dialects (Shalabi, 1957). Some even started to state conditions that were not mentioned by Sibawayhi (Shalabi, 1957). However, their findings could not be considered as adding to Sibawayhi’s work, since Sibawayhi mentioned that *ʔima:la* was not identical among all speakers (as cited in Levin, 2011; Owens, 2006; Shalabi, 1957). As-Siraj, for instance, stated that Sibawayhi limited the discussion of sound assimilation to short [i] neighboring /a:/ without discussing any

assimilation that could result from the neighboring of long [i:] to /a:/ (as cited in Shalabi, 1957). However, Sibawayhi stated that [i] and [i:] produced the same sound but with different lengths. Sibawayhi also added that short [i] was the original sound and any discussion of the short vowel would be applied to its longer phoneme (as cited in Shalabi, 1957).

Az-Zamakhshari stated four conditionings for the occurrence of *ʔima:la* in Old Arabic:

- a. *ʔima:la* occurred when [i] preceded long /a:/, as [ima:d] ‘pillar’ (Shalabi, 1957; Ṭabni, 2012; Yazbik, 2013).
- b. *ʔima:la* occurred when /yæ:ʔ/ preceded /a:/, as *shayba:n* [ʃajba:n] ‘proper noun’ (Levin, 2011; Yazbik, 2013) and *kayya:l* [kajja:l] ‘grain measurer’ (Levin, 2011).
- c. *ʔima:la* occurred in verbs when /a:/ was originally either short [i] or *ya:ʔ* in nouns. For instance, /a:/ in verb [ha:ba] ‘got scared’ was *ya:ʔ* in noun *hayba* [hajba] (Yazbik, 2013).
- d. *ʔima:la* occurred twice in a word for sound assimilation. This case was called *ʔima:la* for *ʔima:la*, like [ra’ajtu ʕima:dan] ‘I saw a pillar’ (al-Rajehi, 1969; Shalabi, 1957; Yazbik, 2013). Short [a] was raised due to the raising of long [a:] (al-Rajehi, 1969).

#### **D. Inhibitors of *ʔima:la* in Old Arabic**

Unlike final *ʔima:la*, medial *ʔima:la* was affected by consonantal environments in its three types. Emphatic sounds [ʕ], [d̥], [t̥], and [z̥], uvulars [x], [χ], and [q] (Habib, 2012; Levin, 2011), gutturals [ʔ], [ħ], and [ʕ] (al-Mussawi, 2008; Habib, 2012), and secondary pharyngeal [r] (McCarthy, 1994) inhibited the occurrence of *ʔima:la*, as in [qa:ʕid]

‘sitting’ and [ʕa:ʔis] ‘sneezing’ (as cited in Levin, 2011). These consonants favor a low vowel unlike *ʔima:la* vowel (Owens, 2006). *ʔima:la* in Old Arabic occurred by raising the tip of the tongue to the palate, while emphatic sounds are produced by raising the back of the tongue; and since the tongue could not be raised twice at the same time or in two consecutive letters, elevated sounds inhibit *ʔima:la* (al-Mussawi, 2008).

Sibawayhi observed that *ʔima:la* was inhibited when [r] preceded /a:/, but it occurred when [r] followed /a:/ (as cited in Owens, 2006). Yet, Nafeʕ al-Madani, a Qur’an reader for almost 70 years, did not raise long /a:/ when it was followed by [ri] (as cited in Shalbi, 1957). In addition, Sibawayhi pointed out that *ʔima:la* could occur in the direct proximity of emphatics or gutturals in dialects that are not considered good Arabic. However, Sibawayhi did not list any example of those varieties (as cited in Levin, 2011).

#### **E. Comparing *ʔima:la* between Grammarians and Qur’an Readers**

Shalabi (1957) picked all words that follow the [fiʕa:l] pattern from the Qur’an and checked how Qur’an readers commented on reading those words in their writings. He divided those words into the following groups:

- a. *ʔima:la* did not occur in words that have elevated sounds in the direct proximity of /a:/, like [liqa:ʔ] ‘meeting’ and [nifa:q] ‘hypocrisy’.
- b. *ʔima:la* did not occur in words that have elevated sounds before and after /a:/ as in [ʕiqa:q] ‘dissension’.
- c. *ʔima:la* occurred in words having the following pattern: an elevated consonant, [i], any non-elevated sound, and then /a:/, like [qita:l] ‘fight’ and [al-xija:na] ‘cheating’.
- d. *ʔima:la* did not occur in words that neither have elevated sounds nor pharyngeal [r], like [bila:d] ‘countries’, [liba:s] ‘clothes’.

- e. *ʔima:la* did not occur in words that have /a:/ followed by [ra] or [ru] or preceded by [ra], like [biha:ru] ‘seas’.
- f. *ʔima:la* occurred in words that have /a:/ followed by [ri], like [ħima:ri] ‘my donkey’, [di:ja:ri] ‘my home’, because [i] after a /r/ has a value of *kæsraetæyn* [kæsraetæjn] ‘two [i]’.

Grammarians stated that elevated sounds inhibited *ʔima:la* in Old Arabic, if they were either in the direct proximity of /a:/, like [qa:ʕid] ‘sitting’ and [na:qid] ‘critic’ (Habib, 2012; Levin, 2011; Shalabi, 1957; Yazbik, 2013) or in an adjacent syllable, like [na:fiq] ‘dead’ (Shalabi, 1957). However, grammarians stated that *ʔima:la* in Old Arabic could occur if the elevated consonant was preceded by [i], as in as [mišba:ħ] ‘flashlight or lantern’ (Shalabi, 1957).

#### **F. Classical Definition of Rounding**

The traditional definition of the term rounding refers to *alif at-tafkhi:m* ‘emphaticized [a:]’ in Old Arabic that was produced by lowering the front and center of the tongue, slightly raising its back, and keeping the lips neutral (Habib, 2012), as in [ʔallah] ‘God’ (Habib, 2012; Shaaban, 1977). Ibn aj-Jazri and Sibawayhi argued that [a:] could not be described as lenient or emphatic, since its pronunciation is affected by sounds in its direct proximity (as cited in al-Nassir, 1993; Habib, 2012; Shalabi, 1957; Shantouf, 2010), and adding emphasis to a sound adjacent to [a:] forces the latter to behave as emphatics (Habib, 2012). Sibawayhi and Ibn Jinni detected this variant of [a:] in the speech of people of Hijaz, since their spelling of some Qur’anic words depicted the orthographic /wa:w/ representing rounded [a:] (as cited in Habib, 2012; Yazbik, 2013), like الصلاة ‘prayer’ (al-Mussawi, 2008; Versteegh, 1997). Versteegh (1997) found that the

inscription of /wa:w/ instead of /a:/ may reflect an Aramaic pronunciation of words with [o:].

Ibn Jinni found that emphaticized [a:] lies between [a:] and [o:] (Nawaşera, 2005; Shantouf, 2010). Al-Nassir (1993) found a relation between emphaticized [a:] and elevated sounds and suggested that the value of emphaticized [a:] in Old Arabic was between [ɔ] and [o]. He added that since this [a:] was limited to a certain number of lexical items, the original vowel of the words might have been an [o] instead of [a:] and has been lowered in many dialects. However, az-Zamakhshari (as cited Habib, 2012) and Ibn aj-Jazri (as cited in al-Rajehi, 1969) considered emphaticized [a:] to be the low central [a:] that is not raised.

### **G. *ʔima:la* and Diphthongs**

Owens (2006) critiqued western linguists (like Levin and Jastrow) for discussing phonological environments that favor or inhibit *ʔima:la* without interpreting the phenomenon phonetically. He further proposed a phonetic analysis of *ʔima:la* of long /a:/. He suggested that *ʔima:la* of /a:/ could be interpreted as a high falling diphthong. Tongue begins in the [i] position and moves towards [a] under the effect of [i] in an adjacent syllable. In this case, raising of tongue is prohibited in guttural environments (Owens, 2006). He also suggested that *ʔima:la* could be interpreted as a low rising diphthong [ai]; however, this *ʔima:la* provides a diphthong value that is the same as the already existing diphthong in Arabic Language, (ay) which turns to [e:] in dialects.

Owens (2006) claimed that, unlike Arab linguists, Grunert (1875) tried to give a phonetic interpretation for *ʔima:la* based on texts written by grammarians after Sibawayhi. However, Anis (1940) and al-Nassir (1993) interpreted *ʔima:la* phonetically. The former described tongue position of *ʔima:la* and *fetiħ* and the latter gave a justification for the inhibition of *ʔima:la* in the adjacency of elevated sounds. While Anis (1940) considered

*ʔima:la* value to be monophthong that was primarily a diphthong, Grunert (1875) recognized the formulation of a diphthong in the case of *ʔima:la* because [a:] in Old Arabic was raised towards /ya:ʔ/ (az-Zamakhshari, as cited in Owens, 2006). The diphthong could be an on-glide *ya* or off-glide *ay*. Grunert chose the second glide value without any justification (Owens, 2006). Finally, Owens (2006) stated that al-Nassir (1993) did not recognize a diphthongal value of *ʔima:la*.

#### **H. *ʔima:la* in Middle Arabic Dialects**

Blau and Hopkins reviewed unpublished 9<sup>th</sup> - and 10<sup>th</sup> - century manuscripts of Judaeo-Arabic and found that factors conditioning *ʔima:la* in those two centuries were the same as those described by Sibawayhi in the eighth century (Hopkins, 2005). Levin (1975) reached the same conclusion by observing examples of vernacular poetry of al-Hilli, a poet in the 14<sup>th</sup> century.

#### **I. *ʔima:la* in Modern Arabic Dialects**

A comparison between *ʔima:la* in old, middle, and modern dialects of Arabic shows that Sibawayhi's discussion of this phonological phenomenon is accurate (Levin, 1992; Levin, 2011; Owens, 2006). Blanc (1964) was the first linguist to reach that conclusion based on his discussion of medial *ʔima:la* in the modern *qeltu* dialects of Antolia and Iraq and the modern dialect of Aleppo in Syria; he found that conditions governing the occurrence and inhibition of medial *ʔima:la* are the same as those stated by Sibawayhi in the eighth century. Grunert (1875) identified a connection between classical *ʔima:la* and the then-modern dialects in Lebanon, Syria, Malta, Sicily and Andalusia (as cited in Owens, 2006; Shalabi, 1957). The accurate and authentic descriptions of Sibawayhi's conditions of final *ʔima:la* are also evident in some modern dialects (Levin, 2011).

Owens (2006) compared the conditionings of *ʔima:la* in modern dialects of Spanish, Easter Libyan, Maltese, and Cypriot Arabic to Sibawayhi's in Old Arabic. Owens (2006), as Levin (2011), found that Sibawayhi's discussion of *ʔima:la* is still valid. Owens (2006) found that *ʔima:la* is conditioned by the occurrence of [i] in an adjacent syllable to [a:] in those four mentioned dialects and is inhibited when an emphatic or a guttural consonant is in an adjacent syllable. However, the class of inhibitors and value of *ʔima:la* differ between Owens's and Sibawayhi's studied dialects.

Grammarians of the tenth century, as Ibn Jinni, Ibn Yaʕi:sh, and as-Sirafi, asserted that *ʔima:la* vowel was pronounced between [a:] and [i:] (as cited in Levin, 2011). As a finding, Levin (2011), al-Nassir (1993), and Owens (2006) suggested that the vowel of *ʔima:la* is [e:] in most modern Arabic dialects. Levin (1992), Levin (2011), Owens (2006), and Habib (2012) defined *ʔima:la* in modern dialects as the fronting and raising of long [a:] towards long [e:] and short [a] towards short [e] in the proximity of [i].

Levin (1971) added a fourth type of *ʔima:la* that occurs in several modern dialects outside Iraq, like Lebanese dialects, some Palestinian dialects in Horan and Golan, some Syrian dialects in Palmyra and Sukhne, some Bedouin dialects of Sahil Maryut in Egypt, and the Jabali variety of Cyrenaica. It is conditioned by the consonantal environments adjacent to /a:/. This type of *ʔima:la* has four factors conditioning its occurrence:

- a. *ʔima:la* occurs when /a:/ lies between two front non-emphatic sounds or a /h/ and a front non-emphatic sound, like [be:b] 'door'.
- b. *ʔima:la* does not occur when emphatic sounds are in the direct vicinity of /a:/, as in [hi:ʔa:n] 'walls.

- c. *ʔima:la* does not occur when emphatic sounds are in an adjacent syllable to /a:/, and there is a labial sound [b], [m], [w], or [f] or lateral sound [l] adjacent to /a:/, like [twa:l] ‘high’.
- d. *ʔima:la* could or could not occur in the presence of back sounds: [q], [ɣ], [x], [h], [ʕ], and [ʔ] or one of the following sounds: [w], [r], or [k]. Factors conditioning the occurrence of *ʔima:la* are intricate and vary between different Arabic dialects.

In addition, Levin (1971) found that in modern dialects, where medial *ʔima:la* is conditioned by consonantal environments, final *ʔima:la* is also conditioned by consonantal environments preceding /a:/. Final *ʔima:la* could also occur in dialects where medial *ʔima:la* does not occur. Levin (1971) found that in some dialects, e.g. Maltese Arabic, only final *ʔima:la* of the feminine plural suffix /a:t/ occurs. Finally, final *ʔima:la* occurs only in pause in Shhi:mi dialect in Lebanon and dialects of Upper Egypt.

Owens (2006) distinguished between two types of *ʔima:la*: lexical and allophonic. Allophonic *ʔima:la* or productive *ʔima:la* (Blanc, 1967) refers to raised [a:] in the direct proximity of [i], like [kile:b] ‘dogs’. Lexical *ʔima:la*, on the other hand, refers to the raising of [a:] towards [i] in weak verbs, even if [a:] is in the direct proximity of elevated sounds, like [xiftu] ‘I was scared’. When comparing *ʔima:la* in Old Arabic dialects to the one present in modern dialects, lexical *ʔima:la* shows differences; that is, long [a:] that is raised in some words in modern Arabic dialects was not raised in older dialects, and vice versa. On the other hand, allophonic *ʔima:la* is the same in both old and modern dialects (Owens, 2006).

According to Sibawayhi, *ʔima:la* is the marked variant in certain speech dialects that consider *fetiħ* to be the original pronunciation of /a:/ (as cited in Owens, 2006).



Corriente (1977), however, found that the allophone of raised [a:] is the unmarked variant in Andalusí Arabic that it became the speech norm and long /a:/ is raised towards [e:] or [i:] (Owens, 2006). Latham (1971) stated three types of *ʔima:la* in Spanish Arabic: ‘weak *ʔima:la*’ that refers to *fetiḥ* in the north, ‘intermediate *ʔima:la*’ that refers to the raising of /a:/ towards [e] and [e:] in eastern Spain, and strong *ʔima:la* that refers to the raising of /a:/ towards [i:] in the kingdom of Granada.

*ʔima:la* of /a:/ occurs in the dialect of Eastern Libyan Arabic in one-syllable nouns that do not contain elevated sounds or [r] (Owens, 2006; Mitchell, 1975), like [ne:s] ‘people’ (Owens, 2006). In multi-syllable words, *ʔima:la* only occurs in stressed syllables in the presence of [i] in an adjacent syllable, as [kitab-na] ‘we wrote’ and [kitab-ne:-hin] ‘we wrote them’ (Owens, 2006). Emphatic sounds, gutturals, and [r] inhibit *ʔima:la* in the variety of Eastern Libyan Arabic (Cantineau, 1960; Corriente, 1977; Mitchell, 1975; Owens, 2006). Mitchell (1975) discussed the relation between *ʔima:la* and secondary pharyngeal [r] elaborately in the dialect of Eastern Libyan Arabic, and Owens (2006) summarized them in four main conditionings:

- a. *ʔima:la* is inhibited when [r] precedes /a:/, like [ra:mi] ‘having thrown’.
- b. *ʔima:la* occurs when [r] follows /a:/, like [de:ri] ‘take care of’.
- c. *ʔima:la* is inhibited when /a:/ is followed by [r] at the end of a word, like [da:r] ‘house’.
- d. *ʔima:la* is inhibited across morpheme boundaries, like [da:ri] ‘my house’.

Contrastingly, *ʔima:la* occurs when /a:/ is in the direct proximity of an emphatic or a guttural sound in the dialect of Aleppo in north Syria, and /a:/ is raised towards long [e:], as in [te:leb] ‘striving’ (al-Wer, 2011; Versteegh, 1997). It is also raised when [i] is

orthographically in an adjacent syllable to long /a:/, as in [lisa:n] (in Modern Standard Arabic) > [lse:n] (in the spoken variety of Aleppo) ‘tongue’ (Versteegh, 1997).

Emphatic sounds do not exist in Maltese Arabic, and *ʔima:la* has many phonological values (Owens, 2006). Long /a:/ is raised towards [iə], represented by /ie/ in Maltese orthography, like [tliəta] ‘three’ (Owens, 2006). Long /a:/ is also raised towards [i:], as [lsi:n] < [lisa:n] ‘tongue’, or long [e:], like [we:t] < [wa:di] ‘valley’. However, *ʔima:la* may or may not be inhibited when orthographic [r], emphatic, or back consonants precede /a:/, as in [rha:m] < [ruxa:m] ‘marble’ (Schabert, 1976) and [siəʔ] < [sa:q] ‘leg’ (Owens, 2006). Finally, *ʔima:la* in final positions does not occur, like [ktibna] ‘we wrote’.

Walters (1991) found that *ʔima:la* of /a:/ in final positions occurs in Korba in Tunisia and /a:/ is raised into one of the following three variants: [ɛ:], [i:], or [ɪ:]. The first variant represents the standard variant, while the remaining two are non-prestigious (Versteegh, 1996). Walters also found that young male speakers of Tunisia use the standard variant more than young females and old speakers of the two genders. Similarly, he found that old male speakers raise /a:/ towards [ɛ:] more than old female speakers. Finally, Walters (1991) found that the young generation also uses the local, non-prestigious variants in their villages to index their group identity.

Habib (2012) found that *ʔima:la* occurs in the variety of Oyoun al-Wadi in Syria and is not conditioned by the presence of short [i] or long [i:] in a word, as in [ʔe:z] ‘stove’. Habib used the term ‘short *ʔima:la*’ to refer to the raising of short /a/ towards short [e] and the term ‘long *ʔima:la*’ to refer to the raising of long /a:/ towards long [e:], like [ʔukren] ‘thank you’ and [ke:n] ‘he was’. *Short* and *long ʔima:la* always occur in the final syllable of a word, e.g. [baʕde:n] ‘later’ (Brustad, 2000) and [musalsale:t] ‘T.V. series’ (Habib, 2012).

In addition, Habib (2012) found that *ʔima:la* could occur if [r] is in the direct proximity of /a:/, as in [ja:re:t] ‘neighbors’. She justified that occurrence using the Lexical Phonology Theory. Under this theory, morphological rules create parts within the word [ja:r-e:t], then phonological rules are applied to these parts (Booji and Rubach, 1987; Habib, 2012; Yazbek, 2013). In the variety of Oyoun al-Wadi, /a:/ in [ja:r] ‘neighbor’ is raised and rounded towards [o:] [jo:r] ‘neighbor’. The plural suffix /e:t/ is added to the word to mark its plural form. Since raising occurs once and at the last syllable of a word, [o:] in [jo:r] returns to [a:] and the /a:/ of the plural suffix is raised.

Habib (2005; 2012) showed that *ʔima:la* is inhibited in borrowed words from Standard Arabic in the variety of Oyoun al-Wadi in Syria. For instance, long /a:/ is not raised in [ħa:mi] ‘pregnant’ (a borrowed word from Standard Arabic), while it is raised towards [e:] in [ħe:mi] ‘carrying’ (a colloquial word). She gave several possibilities to justify *fetiħ* and *ʔima:la* in such words:

1. Borrowed words might maintain their original pronunciation, like [ʕa:di] ‘just’ because colloquial words [ħiqqa:ne:] and [ħiʔʔa:ne:] are used more than the borrowed word.
2. Some words might be newly borrowed to the variety, so they have not been assimilated to the morphological pattern [fe:ʕil] yet, like [ħa:dis] ‘accident’.
3. The inhibition could be intentionally done to differentiate between different meanings of the same word, like [ħa:mi] and [ħe:mi].
4. Some borrowed words have a participial that usually favors *ʔima:la*, again like [ħa:mi] and [ħe:mi].

Unlike Sibawayhi’s observations and discussions, long /a:/ adjacent to initial elevated consonants is raised towards [e:] in the variety of Oyoun al-Wadi in Syria, like

[qe:ʕid] ‘sitting’ (Habib, 2012). Habib (2012) also found that /a:/ is raised in specific morpheme suffixes: feminine plural marker /a:t/ ([sijjare:t] ‘cars’), third masculine object pronoun /a:h/ ([ware:h] ‘behind him/it’), second masculine object pronoun /a:k/ ([ware:k] ‘behind you’), second masculine possessive pronoun respectively /ak/ ([maʕek] ‘with you’), and adverb marker /an/ ([masalen] ‘for example’). She also found that conditioned *ʔima:la* could occur in the first syllable of words having specific morphological patterns: verbs of *yfa:ʕil* pattern (e.g, [tze:ʕil] ‘you/she upset(s) someone’), verbal nouns [fa:ʕil] and [mfa:ʕil] (e.g. [se:miʕ] ‘hearing’), broken plural forms: [mfa:ʕi:l], [fʕa:ʕi:l], and [fwa:ʕi:l] (e.g. [mwe:di:ʕ] ‘projects’), and plural of 4-root words (e.g. [kre:ti:n] ‘boxes’).

#### **J. Rounding in Modern Arabic Dialects**

Anis (1940) and Nawaşera (2005) used the term rounding to refer to the raising of /a:/ towards [o:] and /a/ towards [o]. This raising occurs in many modern dialects, such as Tripoli in North Lebanon (al-Nassir, 1993) and el-Hamma in Syria (Cantineau, 1951). Habib (2012) used the term ‘short rounding’ to refer to the raising of short /a/ and the term ‘long rounding’ to refer to the raising of long /a:/, like [xalos] ‘enough’ and [niḏo:l] ‘proper name’. She found that rounding occurs when /a/ or /a:/ are preceded or followed by pharyngeal [r] or an emphatic sound, as in [ḏarob] ‘he hit’ and [ro:h] ‘he went’. By emphatic sounds, Habib (2012) mentioned both elevated sounds and consonants that produce an emphatic sound like [fiʕto:n] ‘dress’ and *şayyo:d* [ʕajjo:d] ‘hunter’, though the Arabic orthography of these words are [fista:n] and *şayya:d* [ʕajja:d]. In summary, according to Habib (2012), short rounding [o] and long rounding [o:] occur when /a/ or /a:/ is:

- a. in the direct proximity of rhotic [r] in a monosyllabic word, as [jo:r] ‘neighbor’.

- b. adjacent to a rhotic [r] in the final syllable of a mutli-syllable word, as [jɪro:n] ‘neighbors’.
- c. in words that have emphatic sounds in monosyllabic words.
- d. in the final syllable of a mutli-syllable word that has an emphatic consonant in an adjacent syllable, as [maḍrob] ‘racket’.
- e. in words where emphasis is spread rightward.

Werner (2011) found that /a:/ is raised towards [o:] in the Arabic varieties of Alawi villages in Antiochia in Turkey. The rounding occurs in the final syllable of a word when /a:/ is in the direct vicinity of an elevated sound, as *khiyyo:t* ‘tailor’. Similarly, Richter (2011) found that long /a:/ is also raised towards long [o:], as in [ʔalmo:s] < [ʔal-ma:s ] ‘diamonds’, in the spoken variety of Christians in Egypt. Similarly, final /a:/ is raised towards mid-high round long [o:] in Uzbekistan Arabic, like [waro:] ‘behind’ (Zimmerman, 2011).

As Owens (2006) mentioned that the class of *ʔima:la* inhibitors differ between old and modern dialects of Arabic, emphatic sounds leading to rounding also differ between the aforementioned dialects. That is, [s], [d], [t], and [z] are the only four emphatics that lead to rounding in the Arabic variety of Oyoun al-Wadi, compared to Sibawayhi’s and al-Nassir (1993)’s listings of the seven emphatic sounds leading to rounding (Habib, 2012). In addition, Habib found that rhotic [r] lead to rounding in the variety Oyoun al-Wadi. Rhotic [r] shares some similar features with emphatics and pharyngeal consonants (Younes, 1994) in Syrian Arabic (Cowell, 1964), Omani Arabic (Shaaban, 1977), Egyptian Arabic (Harrel, 1957), Palestinian Arabic (Younes, 1994), and Qatari Arabic (Bukshaisha, 1985).

### K. Short *ʔima:la* in Modern Arabic Dialects

Short /a/ in the dialect of Anatolian Arabic in Turkey is either preserved in open unstressed syllables, as [fataħ] ‘he opened’, elided in open unstressed syllables, or raised towards [ə] in closed unstressed syllables, as [fathət] ‘she opened’ (Jastrow, 2011). *ʔima:la* also occurs in the spoken dialect of Bedouins of Antiochia, and /a/ is raised towards either [i] or [u], like [sina] ‘year’ and [ryuba] ‘neck’ (Werner, 2011).

Corriente (2011) gave a possibility of the occurrence of short *ʔima:la* in the variety of Andalusi Arabic in Spain where short /a/ is raised towards [e]. However, Corriente asserted that short [a] and [i] merged into the archiphoneme [ɪ], as in [bɪb] ‘door’. In the Arabic variety of Negev in Iraq, short /a/ is also raised towards short [i] in unstressed open syllables, e.g. [kibi:r] ‘big’ (Henkin, 2011).

*ʔima:la* of short /a/ does not occur in the spoken variety of Baghdadi Arabic in Iraq, unless speakers are Christians, and /a/ is raised towards short [i], as [ħəlwi] ‘pretty’ compared to [ħəlwa] that is uttered by non-Christian Baghdadis (Abu-Haidar, 2011). Similarly, *ʔima:la* differs according to confessions in Bahrain. Sunnis of Bahrain raise short /a/ towards [i], if /a/ is not neighbored by a guttural, an emphatic sound, [r], or [l], and is only preceded by one syllable, e.g. [niʔi] ‘starch’ (Holes, 2011). Similarly, short /a/ is raised towards short [i] in the dialect of Druze in the Shouf in north-east of Beirut, like [jabil] < [jabal] ‘mountain’ (Riman, 2008). In addition, *ʔima:la* of short /a/ [æ] also occurs in the speech of Beiruti Sunnis and is raised towards [e]. It occurs in final positions of first person singular and plural pronouns [ʔəne] and [neħne] and second person singular masculine [ʔənte] (Naim, 2011). Raising of short [æ] is inhibited in Beiruti Arabic when the vowel is adjacent to a pharyngeal or glottal sound (Shalabi, 1957; Naim, 2011).

Short /a/ in Classical Arabic has the allophone [æ] in Cairene Arabic and is raised towards [e] in the speech of women (Woidich, 2011). Short *ʔima:la* also occurs in Damascene Arabic in Syria in final syllables, specifically in the feminine suffix /at/ that is realized as [e] (Lentin, 2011), like [madrase] ‘school’ (Rosenhouse, 2011). However, the raising of /a/ in the suffix is conditioned by the phonetic environment surrounding /a/. That is, raising of /a/ is inhibited if /a/ is adjacent to a back or an emphatic sound, might or might not be raised towards [e] if /a/ follows [r], and is always raised elsewhere (Lentin, 2011). The feminine ending /a/ in Ghalboon in Jordan is often raised to cardinal [e], unless it is preceded by an emphatic, a guttural, or secondary pharyngeal sound [r] (Herin, 2013).

In addition, some urban Palestinian dialects raise short /a/ in final positions towards [e], as [zalame] ‘man’. However, the raising is inhibited when pharyngeal [r] precedes /a/ (Shahin, 2011). Rural dialects of Palestine have unconditioned *ʔima:la*, and medial /a/ is raised towards [i], e.g. [midrasa] < [madrasa] (in urban Palestinian dialects) ‘school’.

*ʔima:la* is also present in the spoken Arabic of Hassaneya in Mauritania and short /a/ is realized as a more centralized allophone [ä] (Taine-Cheikh, 2011).

Short /a/ in final positions is raised towards [i] in Omani Arabic, as [mistaʃfi] ‘hospital’ (Holes, 2011), or towards [e] (Shaaban, 1977) in non-emphatic or uvular surroundings. Likewise, short /a/ (etymologically /a:/) is raised towards [e] or [i] in medial positions in Tripoli in Libya and towards [e] in final positions, as [sme] ‘sky’ and [ħne] ‘we’ (Pereira, 2011).

#### **L. Long *ʔima:la* Modern Arabic Dialects**

Long *ʔima:la* is present in modern Arabic of Antolia in Turkey and is raised towards [e:] in the vicinity of [i] or [i:], as in [dake:ki:n] ‘shops’ (Jastrow, 2011). Long /a:/

is also raised towards [e:] or [i:] in the spoken varieties of Sunnis, Alawites, and Christians of Antiochia (Werner, 2011).

Abu-Haidar found that Christian Baghdadis raise long /a:/ towards [e:], as in [dake:ki:n] ‘shops’ compared to [dka:ki:n] uttered by Muslim Baghdadis (2011). Mansour (2011) found that Jewish Baghdadis raise long /a:/ towards [i:] in nouns, e.g. [ji:məʕ] ‘mosque’ but not in adjectives, as [kba:ɣ] ‘big’. Sunnis and Shiites of Bahrain raise final /a:/ towards [i], as in [simi] ‘sky’ when /a:/ is preceded by an open syllable and is not neighboring a guttural or an emphatic sound (Holes, 2011). Holes (2011) also found that Shiites of Bahrain raise long /a:/ in medial positions towards [i:], as in [kti:bi] ‘writing’.

Long *ʔima:la* also occurs in the speech of Beirut Sunnis, where [æ:] is raised towards long [e:], as [ħalibe:t] ‘milk’ due to effects of schooling and modern Arabic used in media (Naim, 2011). Similarly, [æ:] and is raised towards long [e:] in the speech of Cairene women (Woidich, 2011). Likewise, Druze of Shouf in Lebanon raise [æ:] towards [e:], e.g. [xe:li] ‘my uncle’ (Riman, 2008). Richter (2011) found that the variants of *ʔima:la* of long /a:/ in Coptic Arabic (variety of Christian Arabic in Egypt) are [a], [e], and rarely [e:], like [alpep] < [al-ba:b] ‘the door’.

Raising of long /a:/ is also evident in the Arabic variety of Cilicia in Turkey and the vowel is raised towards short [i] in final positions when historically short [i] is in a preceding syllable, as in dinyi ‘world’. In medial positions, long /a:/ is raised towards [e:], as in [lse:n] ‘tongue’ (Prochazka, 2011). The raising, however, is inhibited when /a:/ is adjacent to pharyngeal [r] or occurs in the sequence /a:yi/ (Prochazka, 2002, as cited in Prochazka, 2011). Similarly, long /a:/ is raised towards [e:] in the Arabic variety of Ras Beirut in Lebanon, like [ʔahle:te] ‘my parents’ (Naim-Sanbar, 1985). In addition, the



Arabic dialect of Sunnis of Mersin in Turkey raises long /a:/ towards cardinal [e:] following the [fiʕa:l] and [fiʕla:l] patterns (Prochazka 2002, as cited in Prochazka, 2011).

Classical Arabic /a:/ is raised towards short [e], as [klep] ‘dogs’ and [nes] ‘people’ in the vicinity of [i] or [i:] in Cypriot Arabic (Borg, 2011). In the variety of Damascene Arabic, final /a:/ is always raised towards short [e], e.g. [ʃəte] ‘winter’ (Lentin, 2011). However, it is important to mention that this raising only occurs in nouns; for instance, long /a:/ in [ħamra] ‘red’ is not raised towards [e], since the word is an adjective (Lentin, 2011).

Given that *ʔima:la* of long /a:/ rarely occurs in the Arabic variety of Jerusalem, the vowel is raised towards [e:], like [ʔembe:riħ] ‘yesterday’ (Rosenhouse, 2011). Long /a:/ is also raised towards long [e:] in the spoken variety of Arabic in Negev in Iraq, like [jbe:l] ‘mountains’ and [kilme:t] ‘words’ (Henkin, 2011).

Finally, long /a:/ is raised towards [i:] in the absence of elevated sounds, like [mi:lħa] ‘salty’ in Omani Arabic (Holes, 2011). Shaaban (1977) found that /a:/ is raised towards [e:] in the Arabic variety of Dhofari in Oman, if emphatics or laryngeals are not in the direct proximity of the long vowel.

## **M. Conclusion**

Modern studies on the raising of [a] and [a:], like Owens (2006), Habib (2005; 2012), Levin (1992; 2011), and Shalabi (1957), show that the phonological conditionings governing its occurrence are the same as those listed by Sibawayhi in the 8<sup>th</sup> century. That is, fronting and raising occur when [a] or [a:] is adjacent to [i] or /ya:ʔ/, and rounding and raising occur when [a] or [a:] is adjacent to /r/ or an emphatic consonant. As class of emphatics vary among different old and modern dialects, the variants of raised [a] or [a:] vary too. Finally, while old grammarians and linguists focused on the phonological

conditionings governing the raising, modern linguists take into consideration, in addition to the phonological conditionings, some social variables that influence the raising in certain dialects, like religion, sects, gender, and age.

## CHAPTER III

### METHODOLOGY

This study synchronically investigated the phonological, lexical, and morphological conditionings governing the phenomenon known in classical linguistic literature on Arabic as *?ima:la* of low front vowels [æ] and [æ:] either to mid front vowels [e] and [e:] or high front vowels [i] and [i:]. It also investigated the variation among the different allophones by speakers' age and gender.

More specifically, the study aimed to answer the following questions:

1. What phonological environments favor the raising of [æ] and/or [æ:] in the variety of Maḥrouna?
2. What phonological environments inhibit the raising of [æ] and/or [æ:] in the variety of Maḥrouna?
3. Does the raising of [æ] and/or [æ:] vary among people of different age groups in Maḥrouna? If so, how?
4. Does the raising of [æ] and/or [æ:] vary between males and females in Maḥrouna? If so, how?
5. How does the raising of [æ] and/or [æ:] vary among different word classes in the variety of Maḥrouna?

The motivation behind this study was to examine whether people of Maḥrouna still raise [æ] and [æ:] towards [i] and [i:], especially the young generation which is always in contact with speakers of other varieties on social media apps. In addition to the linguistic (phonological, lexical, and morphological) conditionings governing the raising of [æ] and

[æ:] in Mahrouna, the study compared the variants of raised [æ] and [æ:] among the three age groups and two genders. The speech of all participants was recorded.

Data collected were analyzed qualitatively to identify the linguistic environments governing the raising of the vowels. Qualitative analysis was also used to study the correlation between gender, age, and the raising.

### A. Participants

Participants of this study were selected to represent a judgement sample, based on two social variables: age and gender. The population sample included males and females of Mahrouna belonging to three age groups: 18-40, 41-64, and 65-84 years old. 35 speakers were chosen to participate and were equally divided between youngest age group (18-40 years old), middle-aged group (41-64 years old), and oldest age group (65-84 years old). There were 12 participants belonging to the youngest age group: 6 females and 6 males; 12 people belonging to the middle-aged group: 6 males and 6 females; and 11 people belonging to the eldest age group: 6 males and 5 females. The following table shows the distribution of participants by age and gender.

Age	Male	Female	Total
18-40	6	6	12
41-64	6	6	12
65-84	6	5	11
Total	18	17	35

Table 3: Distribution of speakers by age and gender

Participants were selected from the three age groups to compare the variants of raised [æ] and [æ:] among young, middle-aged, and old generations. The study intended to ascertain which age group might maintain older variants of raised [æ] and [æ:]. It also set out to examine the effect of mobility and outside language influences (other dialects,

Modern Standard Arabic, French, and English) on the forms produced by the speakers. The study attempted to identify also the direction of change, if any, taking place in Mahrouna's speech patterns.

Appendix E includes some demographic information about the participants which were elicited through the preliminary questions during the interviews. These questions included speaker's age, occupation, and number of visits to Beirut each year.

### **B. Data Collection**

The fieldwork for this research was conducted during January 2017. All interviews took place in participants' houses in Mahrouna. Participants were initially told that the objective of the study was to learn more about the change in customs and traditions of Mahrouna over time to divert their attention from the vowels under study.

Data were collected through semi-structured interviews. Semi-structured interviews are indeterminate: they can follow any direction because the interviewer asks a set of questions but does not impose them (Litosseliti, 2010). The general topic of the interviews was Mahrouna. Interview questions were about life in Mahrouna: touristic places in the village, change in the customs over time, customs the interviewee likes and dislikes, comparison between Mahrouna and nearby villages, social ties, and the role of the new generation in changing social, economic, and educational standards of Mahrouna. Several participants, especially the oldest age group, did not respond to the questions; they rather narrated some incidents from their past. Younger participants talked about how politics shapes the social ties among people of the village and creates or destroys friendships. All interview questions are listed in Appendix A.

The researcher received participants' permission to tape record their interviews before each interview. Participants were initially informed that they were recorded to

avoid missing any part of their conversations about the culture and traditions of Mahrouna. After each interview, participants were informed of the real objective of the study and received permission to use their input in studying the conditionings governing the raising of [æ] and [æ:] in the village. Interviews lasted anywhere between 25 minutes and 68 minutes; the duration of each interview generated a representative sample of the repertoire of each interviewee. Total duration of all the interviews was around 24 hours. All interviews were recorded through a handheld recording device. The first five minutes of each interview were disregarded, since a participant would be conscious about his/her linguistic repertoire at the beginning of the interview. After that, participants would be more involved in the interviews leading to a natural linguistic repertoire (Labov, 1972). The last five minutes of each interview were also disregarded, since participants might feel tired by the end of each interview and that might affect their pronunciation.

### **C. Representativeness of Data**

Since the researcher is a member of the community and known to all participants on account of her family trips to the village, participants were comfortable in her presence. Hence, she served as an ‘insider’ as the primary data collector in this study. All people of Mahrouna are relatives by blood, so there was a level of trust and comfort in all interviews. Interviewees were interested because such a project would introduce others to the village. The oldest participants enjoyed talking about the village because they remembered their childhood and youth, and the youngest generation showed some pride and confidence when comparing nearby villages to Mahrouna because, according to them, people of Mahrouna are more educated.

#### **D. Data Analysis**

After conducting the interviews, words that contained [æ]/[æ:], [a]/[a:], [e]/[e:], and [i]/[i:] were transcribed, transliterated, and counted by each speaker; words were transcribed and transliterated even if they were repeated several times. Words that contained the aforementioned vowels were tabulated along with their urban counterparts based on the researcher's knowledge of urban varieties. Then, the number of words that contain each vowel for each speaker and all speakers were counted and tabulated. All words were transcribed using IPA characters and transliterated using Bibliotheca Islamica characters. The guide of transcription and transliteration of consonants is listed in Appendix B. The occurrence or lack of raising was examined phonologically in light of sounds in the direct proximity of [æ] and [æ:] or in a preceding or following syllable; frequency of occurrence of a word; word class of a token; singular, dual, and plural suffixes; and feminine and masculine suffixes. To study the relation between raising and age, the occurrence of [æ] and [æ:] and their raised variants in the speech of the three age groups were compared. Similarly, [æ] and [æ:] and their raised variants were studied in light of the gender of speakers. Finally, gender differentiation across age groups was also analyzed qualitatively.

#### **E. Limitation**

The lack of schools, universities, and job opportunities in Mahrouna forces many people of Mahrouna to work or study in nearby villages. This daily mobility has exposed people of Mahrouna to a set of different linguistic varieties from these villages. As such, there may be some contamination or some influences of other dialects, a situation also true of all varieties of Lebanese Arabic.

## CHAPTER IV

### RESULTS AND DISCUSSION

#### A. Introduction

The researcher hypothesizes that the historical low central vowel [ɑ]/[ɑ:] has undergone one of two changes: either it is realized as the low back vowel [a]/[a:] in the vicinity of emphatic sounds and some instances of [r], or it is realized as the low front vowel [æ]/[æ:] elsewhere. It is this fronted vowel [æ]/[æ:] that undergoes raising to either [e]/[e:] or [i]/[i:], and as such it is going to be treated for the purpose of this study as the phoneme while the others are its allophonic representation.

After listening to the recorded interviews, all words that contained allophones of vowel phonemes /æ/ and /æ:/ in medial and final positions were transcribed, transliterated, counted, and tabulated. The database consists of 71,707 words, summarized in Table 4 for allophones of /æ/ and /æ:/ in medial positions and in Table 5 for allophones of /æ/ and /æ:/ in final positions.



Phoneme	Allophones	Number of occurrences	Percentage out of total occurrences
/æ/	[æ]	20,754	36.35
	[a]	3,841	6.73
	[e]	13,025	22.81
	[i]	398	0.70
Total number of raising occurrences		13,423	66.59
/æ:/	[æ:]	6,497	11.38
	[a:]	2,185	3.83
	[e:]	10,314	18.07
	[i:]	76	0.13
Total number of raising occurrences		10,390	33.41
Total words in database		57,090	100.00

Table 4: Total number of words that contain allophones of /æ/ and /æ:/ in medial positions

Phoneme	Allophones	Number of occurrences	Percentage out of total occurrences
/æ/	[æ]	5,790	39.61
	[a]	1,526	10.44
	[e]	4,298	29.40
	[i]	54	0.37
Total number of raising occurrences		4,352	29.77
/æ:/	[æ:]	2,501	17.11
	[a:]	-	-
	[e:]	448	3.06
	[i:]	-	-
Total number of raising occurrences		448	3.06
Total words in database		14,617	100.00

Table 5: Total number of words that contain allophones of /æ/ and /æ:/ in final positions

## B. Factors Determining Allophonic Variation

The linguistic environments of the allophones of short and long vowels /æ/ and /æ:/ were examined. The raising of [æ] and [æ:] towards [e]/[i] and [e:]/[i:] respectively in medial and final positions is explained in terms of phonological conditionings (Section 1), morphological conditionings (Section 2), lexical conditions in words borrowed from Standard Arabic and foreign languages (Section 3), and two extralinguistic factors: gender and age (Section 4).

## 1. Phonological Conditionings

This section shows the allophones of the phonemes /æ/ and /æ:/ and the phonetic environment that governs their form and pronunciation.

### a. [æ] and [æ:] Environments

#### a. In Medial Positions

	Variety of Mahrouna		Urban varieties	Gloss
1	‘æwshæræ	[ʕæwʃæræ]	–	'picnic'
2	ghærīb	[ɣæri:b]	[ɣæri:b]	'stranger'
3	’æssæs	[ʔæssæs]	[ʔæssæs]	'created'
4	khællæfet	[xællæfet]	[khællæfit]	'gave birth to'
5	zæ’īm	[zæʕi:m]	[zæʕi:m]	'leader'
6	shæghīl	[ʃæɣɣi:l]	[ʃæɣɣi:l]	'employee'
7	hæræs	[hæræs]	[hæræs]	'guards'
8	’ædæm	[ʕædæm]	[ʕædæm]	'non'
9	khælte	[xæ:lte]	[xæ:lte]/[xæ:lti]	'aunt'
10	lahhæm	[læhhæ:m]	[læhhæ:m]	'butcher'
11	hælae	[læhæ:læ]	[læhæ:læ]	'by herself'
12	finæsh	[finæ:ʃ]	[mæ: fi:næ] / [mæ: fi:ne]	'we cannot'
13	mæ’æsh	[rohnæ:ʃ]	[mæ: rihnæ]/ [mæ: riɦne]	'we did not go'
14	ter’æn	[terʔæ:n]	[torʔæ:t]	'streets'
15	’ælaem	[ʕæ:læm]	[ʕæ:læm]	'people'
16	ref’æte	[refʔæ:te]	[refʔæ:te] / [refʔæ:ti]	'my friends'
17	ghælib	[ɣæ:lib]	[ɣæ:lib]	'proper noun'
18	yet’æbælo	[jetʔæ:bælo]	[jetʔæ:bælo]	'they meet'

Table 6: Examples of [æ] and [æ:] environments in medial positions

Table 6 shows examples of words that have low front [æ] (examples 1-8) and its longer phoneme [æ:] (examples 9-18) in medial positions in the variety of Mahrouna.

Vowels /æ/ and /æ:/ are realized as [æ] and [æ:] in the direct vicinity of velars ([x] and [χ]) (examples 2, 4, 6, 9 and 17); and gutturals as in glottal [ʔ] (examples 3, 14, 16, and 18) and pharyngeals ([ʕ] and [ħ]) (examples 1, 5, 7, 8, 10, 11, and 15). It is also realized as [æ:] in the remnant negation suffix /æ:sh/ (what remains of negation when the head [mæ:] of [miʃ] is dropped) (examples 12 and 13).

ii. In Final Positions

	Variety of Mahrouna		Urban varieties	Gloss
1	kinnæ	[kinnæ]	[kinnæ]	'we were'
2	neħnæ	[neħnæ]	[nihnæ]/[nihne]	'we'
3	'ila	[ʔila]	[ʔila]	'hers'
4	'ishyæ	[ʔiʃyæ]	[ʔiʃyæ]	'things'
5	bælædiyyitæ	[bælædiyyitæ]	[bælædiyyitæ]	'its municipality'
6	shitæ	[ʃitæ]	[ʃitæ]	'rain'
7	læ	[læ:]	[læ:]	'no'
8	læ	[læ:]	[læ:]	'to'
9	mæ	[mæ:]	[mæ:]	'no'
10	yæ	[yæ:]	[yæ:]	'or'
11	yæ	[yæ:]	[yæ:]	'particle used for calling someone'

Table 7: Examples of [æ] and [æ:] environments in final positions

Table 7 shows examples of [æ] (examples 1-6) and [æ:] (examples 7-11) in final positions. Long vowel /æ:/ is realized as [æ] in open word final syllables (examples 1 and 2). Orthographic /æ:ʔ/ are also realized as [æ] in the variety of Mahrouna (examples 4 and 6). Third feminine possessive pronoun /hæ:/ is also realized as [æ] (examples 3 and 5). Finally, there are only three one-syllable words that end with long [æ:] in the variety of Mahrouna (examples 7-11).

b. [a] and [a:] Environments

i. In Medial Positions

	Variety of Mahrouna		Urban varieties	Gloss
1	ʿaḏḏa	[ʕaḏḏa]	[ʕaḏḏa]	'bite'
2	ṣahrīj	[ʕahri:j]	[ʕahri:j]	'water reservoir'
3	ʿalla	[ʔalla]	[ʔalla]	'God'
4	makhfar	[maxfar]	[maxfar]	'police station'
5	ballūt	[ballu:t]	[ballu:t]	'oak'
6	ḥafīza	[ħafi:za]	[ħafi:za]	'proper noun'
7	naṭra	[naṭra]	[naṭra]	'waiting'
8	maṭraḥ	[maṭraħ]	[maṭraħ]	'place'
9	ṣān ʿæ	[ʕa:nʕæ]	[ʕa:nʕæ]	'maid'
10	ʿakhbār	[ʔaxba:r]	[ʔaxba:r]	'news'
11	ḥāmoḏ	[ħa:moḏ]	[ħa:moḏ]	'lemon'
12	siyyāra	[sijja:ra]	[sijja:ra]	'car'
13	barrād	[barra:d]	[barra:d]	'refrigerator'
14	ḥmār	[ħma:r]	[ħma:r]	'donkey'
15	naḏāfe	[naḏa:fe]	[naḏa:fe]/[naḏa:fi]	'cleanliness'
16	jāṭ	[ʒa:t]	[ʒa:t]	'bowl'
17	māḏe	[ma:ḏe]	[ma:ḏe]/[ma:ḏi]	'past'
18	ṭāwle	[ṭa:wle]	[ṭa:wle]	'table'

Table 8: Examples of [a] and [a:] environments in medial positions

Table 8 shows examples of words that have low back [a] (examples 1-8) and [a:] (examples 9-18) in medial positions in the variety of Mahrouna. Levin (1992; 2011) and McCarthy (1994) stated that /a/ and /a:/ are realized as [a] and [a:] in the proximity of [r]. Mitchell (1975) found out that /a:/ is realized as [a:] when it follows [r] or is in an open

word final syllable, while Shaaban (1977) found that /a/ and /a:/ are realized as [a] and [a:] in Omani Arabic when they precede [r]. However, in the variety of Mahrouna, /æ/ and /æ:/ are realized as [a] and [a:] whether the two allophones precede or follow [r] (examples 4, 8, 10, 12, and 13). They are also realized as [a] and [a:] in the proximity of emphatic sounds [ʂ] (examples 2 and 9), [d] (examples 1, 15, and 17), [t] (examples 5,7,8, 16, and 18), and [z] (example 6).

Vowels /æ/ and /æ:/ are also realized as [a] and [a:] in the proximity of emphatic [l] (Ghazeli, 1977; Mustafawi, 2006; Habib, 2012; Shaaban, 1977) that is only evident in words for Deity, like [hajalla] ‘anyone; whatever’ and [balla] ‘an interjection used to show one’s dispute’.

## ii. In Final Positions

	Variety of Mahrouna		Urban varieties	Gloss
1	khodra	[xodra]	xodra	'vegetables'
2	honṭa	[honṭa]	–	'wheat'
3	lahza	[lahza]	lahza	'moment'
4	naṭṭa	[naṭṭa]	naṭṭa	'jump'
5	'oṣṣa	[ʔoṣṣa]	ʔoṣṣa	'story'
6	barra	[barra]	barra	'outside'
7	manfaḍa	[manfaḍa]	manfaḍa	'ashtray'

Table 9: Examples of [a] environments in final positions

Table 9 shows examples of words that have low central [a] (examples 1-7) in final positions. Similar to medial [a], final [a] is produced when it follows an emphatic sound (examples 2,3,4,5, and 7) or [r] (examples 1 and 6). This allophone only occurs in

feminine suffix /a/. Finally, allophone [a:] is not evident in final positions in the variety of Mahrouna.

c. [e] and [e:] Environments

i. In Medial Positions

	Variety of Mahrouna		Urban varieties	Gloss
1	'ækəl	[ʔækəl]	[ʔækəl]	'food'
2	rafeʻ	[rafeʕ]	[rafeʕ]	'raising'
3	jæmeʻ	[jæmeʕ]	[jæmeʕ]	'addition'
4	dæres	[dæres]	[dæres]	'study'
5	'æsheb	[ʔæʃeb]	[ʔæʃeb]	'skin peel'
6	mazeh	[mæzeh]	[mæzeh]	'kidding'
7	bæled	[bæled]	–	'village'
8	'ineb	[ʕineb]	[ʕineb]	'grapes'
9	jæmel	[jæmel]	[jæmel]	'camel'
10	nēs	[ne:s]	[ne:s]	'people'
11	shæbēb	[ʃæbe:b]	[ʃæbe:b]	'guys'
12	kælsēt	[kælse:t]	[kælse:t]	'socks'
13	hæzæziyēt	[hæzæzije:t]	[hæzæzije:t]	'prickles'
14	mostiklēt	[mostikle:t]	[mostikle:t]	'motorcycles'
15	tæ'æwniyēt	[tæʔæwinije:t]	[tæʔæwinije:t]	'super markets'
16	musælsælēt	[musælsæle:t]	[musælsæle:t]	'T.V. series'
17	zahmēne	[zahme:ne]	–	'she needs to enter the toilet'
18	'iyyēm	[ʔijje:m]	[ʔijje:m]/[ʔæjje:m]	'days'

Table 10: Examples of [e] and [e:] environments in medial positions

Low front vowels [æ] and [æ:] are raised towards mid front [e] and [e:] in medial positions in the variety of Mahrouna. The raising of short [æ] towards [e] (examples 1-9)

and [æ:] towards [e:] (examples 10-18) occur in the final syllable of the word. Examples 1-7, 9-12, 16, and 17 show that the raising occurs without [i] or /yæ:ʔ/ environments.

The raising towards [e] occurs in verbal nouns of [fæʕæl] pattern to differentiate between the two word classes (examples 1 - 4, and 6). Raising towards [e] and [e:] also occur when [æ] and [æ:] are not adjacent to emphatic, velar, or guttural sounds. Raising occurs at the final syllable of words even if previous syllables contain [æ] or [æ:]. Hence, medial raising or raising in medial positions towards [e] or [e:] occurs once in a word. It is important, however, to mention that the raising in final syllables occurs in words that do not have possessive pronoun suffixes. Though adding a possessive pronoun suffix to nouns inhibits the raising in the variety of Oyoum al-Wadi because [æ] or [æ:] would not be in the final syllable, like [haya:ta] ‘her life’, the raising phenomenon in the variety of Mahrouna still occurs. For instance, raising towards [e:] occurs in [ʔækle:tæ] ‘her food’, [xze:nto] ‘his closet’, [tje:bnæ] ‘our clothes’, [mæsʔulije:tik] ‘your (fem.) responsibilities’, and [kænze:tæk] ‘your (masc.) shirts’, though [e:] does not occur in the final syllable of the words. A further explanation of these cases is stated in Section 2. In summary, the raising of [æ] and [æ:] in medial positions towards [e] and [e:] occur in final syllables of un-suffixed words or in the syllable that precedes a possessive pronoun suffix.

In addition, medial raising could occur twice in words that contain the plural feminine suffix /æ:t/ (examples 12-16) (see Section 2 for further explanation).



ii. In Final Positions

	Variety of Mahrouna		Urban varieties	Gloss
1	'æne	[ʔæne]	[ʔæne]	'I'
2	howwe	[howwe]	[howwe]/[howwi]	'he'
3	hiyye	[hiije]	[hiije]/[hijji]	'she'
4	zghīre	[zyi:re]	[zyi:re]/[zyi:ri]	'small'
5	'aqīde	[ʕaqi:de]	[ʕaqi:de]/ [ʕaqi:di]	'belief'
6	'æhwe	[ʔæhwe]	[ʔæhwe]/ [ʔæhwi]	'coffee'
7	hē	[he:]	[haide]	'this'
8	bælē	[bæle:]	[bæle:]	'without him'
9	wiyyē	[wijje:]	[wijje:]	'with him'
10	shifnē	[ʃifne:]	[ʃifne:]	'we saw him'
11	'ijē	[ʔize:]	[ʔize:]	'came to him'

Table 11: Examples of [e] and [e:] environments in final positions

Table 11 shows examples of the raising of [æ] towards [e] (examples 1-6) and [æ:] towards [e:] (examples 7-12) in final positions in the variety of Mahrouna. The raising occurs when [æ] does not follow an elevated sound (examples 2,3, 5, and 6). Even though /æ/ is realized as [a] in the direct proximity of [r], it could be realized as [e] when /ya:ʔ/ precedes [r] for sound assimilation (example 4). In addition, while shortening of [æ:] to [æ] in final positions inhibits its raising as in [ʃinnæ] 'we have', final /æ:/ in [ʔæne] 'I' (example 1) is always raised by all speakers of Mahrouna because it perhaps indexes their collective identity as southerners. Finally, raising of [æ:] towards [e:] in final positions occurs in place of third masculine object pronoun suffix /æ:h/ [æ:] (examples 7, 9, and 11).

While Sibawayhi stated that raising occurs once in a word in Old Arabic, az-Zamkhshari found that there is a case where raising phenomenon could happen twice for sound assimilation (*ʔima:la* for *ʔima:la*). In modern Arabic dialects, Habib (2012) found

that raising occurs once in a word in a final syllable. In Mahrouna, raising occurs once in a medial position in un-suffixed words. However, it can also occur in the final position of the same word for vowel harmony. For instance, medial [æ:] and feminine singular suffix [æ] are raised towards [e] and [e:] respectively in [ghasse:le] < [ghassæ:læ] ‘washing machine’.

d. [i] and [i:] Environments

i. In Medial Positions

	Variety of Mahrouna		Urban varieties	Gloss
1	‘ædis	[ʕædis]	[ʕædæs]	'lentils'
2	‘ælim	[ʔælim]	[ʔæləm]	'pen'
3	mækhzin	[mæxzin]	[mæxzæn]	'store'
4	mḥæmmid	[mḥæmmid]	[mḥæmmæd]	'proper noun'
5	mæktib	[mæktib]	[mæktæb]	'office'
6	mætil	[mætil]	[mætæ]	'proverb'
7	ḥæsin	[ḥæsin]	[ḥæsæn]	'proper noun'
8	shæmīm	[ʃæmi:m]	[ʃæme:m]	'melon'
9	jæwīd	[jæwi:d]	[Jæwæ:d]	'proper noun'
10	kīn	[ki:n]	[ke:n]	'was'
11	shæbīb	[ʃæbi:b]	[ʃæbe:b]	'guys'
12	niswīn	[niswi:n]	[niswe:n]	'women'
13	jīj	[ji:j]	[dʒe:j]	'chicken'
14	libnīn	[libni:n]	[libne:n]	'proper noun'
15	wlīd	[wli:d]	[wle:d]	'kids'
16	shæyyīt	[ʃæjji:t]	[ʃa:j]	'tea'
17	bænīt	[bæni:t]	[bæne:t]	'girls'

Table 12: Examples of [i] and [i:] environments in medial positions

Low front vowels [æ] and [æ:] are also raised towards high front [i] and [i:] in medial positions. The conditionings governing the raising towards [i] and [i:] are the same as the ones governing the raising towards [e] and [e:] in the variety of Mahrouna. That is, raising towards [i] (examples 1-7) and [i:] (examples 8-17) occur in the final syllable of an un-suffixed word. In addition, the raising phenomenon occurs when [æ] and [æ:] are not in the vicinity of emphatic, guttural, or velar sounds. Examples 1-12, 14, and 16-17 show that the raising towards [i] and [i:] need not [i] or /yæ:ʔ/ environments to occur. Similar to the raising towards [e] and [e:], raising towards [i] and [i:] is maintained when adding the possessive pronoun suffixes, [shæjji:tæk] ‘your (masc.) tea’ and [bæni:tik] ‘your (fem.) girls’.

The choice of [i]/[i:] or [e]/[e:] is not a matter of phonological condition or free variation. Rather it is determined by a sociolinguistic rather than a linguistic factor, namely, age (see Section 4 for further explanation).

## ii. In Final Positions

	Variety of Mahrouna		Urban varieties	Gloss
1	'issi	[ʔissi]	–	'now'
2	deni	[deni]	[denje]	'universe'
3	'inni	[ʕinni]	[ʕænnæ]	'we have'
4	nehni	[nehni]	[nehnæ]	'we'

Table 13: Examples of [i] environments in final positions

Table 13 shows examples of the raising of [æ] towards [i] (examples 1-4) in final positions in the variety of Mahrouna. This raising is only evident in the speech of seven speakers out of the 35 interviewees (see Section 4 for further explanation). The raising

occurs when the preceding sound is not an emphatic, uvular, or guttural. This raising occurs after shortening orthographic /æ:/ to [æ]. Raising of singular feminine suffix [æ] towards [i] is not evident, unless [æ:] is raised towards [i:] in the preceding syllable as [sijji:di] ‘carpet’; elsewhere, it is raised towards [e], like [leʕbe] ‘toy’. This raising in final syllables occurs as a form of vowel harmony. Finally, raising of [æ:] towards [i:] in final positions is not evident in the speech of Mahrouna.

Habib (2012)’s findings show that the raising phenomenon is symmetrical in the Syrian variety of Oyoun al-Wadi, since [a] and [a:] are raised towards [e]/[e:] and [o]/[o:]. However, in the variety of Mahrouna, the raising phenomenon is asymmetrical, since [æ] and [æ:] are not raised towards [o]/[o:] and [u]/[u:] as they are raised towards [e]/[e:] and [i]/[i:].

In summary, there are four allophones for short vowel phoneme /æ/ and four others for the long vowel phoneme /æ:/. The phonological rules that govern the realization of each allophone are stated below:

1. 
$$\left[ \begin{array}{c} \text{æ} \\ \text{æ:} \end{array} \right] \longrightarrow \left[ \begin{array}{c} \text{æ} \\ \text{æ:} \end{array} \right] \quad / \quad \text{C\_ [+Guttural]} \quad / \quad \left\{ \begin{array}{c} \# \\ \text{c} \end{array} \right\}$$
2. 
$$\left[ \begin{array}{c} \text{æ} \\ \text{æ:} \end{array} \right] \longrightarrow \left[ \begin{array}{c} \text{a} \\ \text{a:} \end{array} \right] \quad / \quad \text{C\_} \quad \left[ \begin{array}{c} +\text{emphatic} \\ \text{r} \end{array} \right] \quad / \quad \left\{ \begin{array}{c} \# \\ \text{c} \end{array} \right\}$$
3. 
$$\left[ \begin{array}{c} \text{æ} \\ \text{æ:} \end{array} \right] \longrightarrow \left[ \begin{array}{c} \text{e} \\ \text{e:} \end{array} \right] \quad / \quad \text{C\_ [-Guttural]} \quad / \quad \left\{ \begin{array}{c} \# \\ \text{c} \end{array} \right\}$$
4. 
$$\left[ \begin{array}{c} \text{æ} \\ \text{æ:} \end{array} \right] \longrightarrow \left[ \begin{array}{c} \text{i} \\ \text{i:} \end{array} \right] \quad / \quad \text{C\_ [-Guttural]} \quad / \quad \left\{ \begin{array}{c} \# \\ \text{c} \end{array} \right\}$$

## 2. *Morphological Conditioning*

The previous phonological rules showed that the raising of [æ] and [æ:] in medial positions occur at the final syllable of an un-suffixed word or at the syllable that preceded the suffix morpheme in suffixed words in the variety of Mahrouna. However, the raising could occur in the first syllable of words of two syllables, as [ne:wi] ‘willing to’ and [skeki:n] < [sækæki:n] (in Modern Standard Arabic) ‘knives’. These words are either verbal nouns of [fe:ʕil] pattern or broken plural of [fweʕi:l] pattern respectively.

Feminine singular suffix /æ/ is raised towards [e] if it does not follow gutturals. It is also raised towards [i] when [i:] is present in a preceding syllable. Similarly, feminine plural suffix [æ:t] is raised towards either [e:t] or [i:t] in the absence of gutturals, like [kænze:t] ‘sweaters’ and [ʕænzi:t] ‘goats’. It was previously mentioned that the raising could occur twice in a word: one in medial positions and one in final positions and that adding feminine plural suffixes [e:t] or [i:t] does not inhibit the raising of [æ] and [æ:] in the preceding syllable of the same word. The raising towards [e]/[i] and [e:]/[i:] could occur twice in plural nouns after adding the feminine plural suffix. For instance, the medial [æ:] and final [æ] in [sæʒʒæ:dæ] ‘carpet’ are raised towards [e:]/[i:] and [e]/[i] respectively in [siʒʒe:de] and [siʒʒi:di]. When adding the plural feminine suffix [e:t] or [i:t], medial [e:] and [i:] are shortened but still raised though they are not in the final syllable anymore. In other words, the raising of [æ:] in medial positions is maintained when adding the feminine plural suffix to the word, like [sijjede:t] and [sijjidi:t].

Kriparsky (1982a), Kriparsky (1982b), Mohanan (1982), and Habib (2012) justified the occurrence of the raising twice within a word using the Lexical Phonology Theory (henceforth LPT). Given that consonantal environments determine the phonological rule that applies to each word, there are some morphological conditionings

that apply to the word before the phonological conditionings. According to LPT, morphological rules form lexemes within the word; then phonological rules are applied to these lexemes. Habib (2012) gave an example of two words in English: cats and dogs. The plural form of both words is maintained by adding the -s suffix. In the morphological component, each of these two words consists of two parts: cat+s and dog+s. After adding the suffix morpheme to the two words, they are submitted to the phonological component, and the two words are pronounced as [kæts] and [dɒgz].

In the variety of Mahrouna, /æ:/ in [ʃæjje:l] ‘kitchen mitten’ is raised towards [e:] because it is not surrounded by a guttural sound. Changing the token into plural is done by adding the feminine plural suffix /æ:t/. The suffix is raised towards [e:t]/[i:t] because it is not preceded by a guttural sound. According to the LPT, there are two lexemes in the plural form of [ʃæjje:l] in the morphological component: [ʃæjje:l] and /æ:t/. When submitting the word to the phonological component, [æ:] of the suffix is raised and [e:] of [ʃæjje:l] is shortened so the word would be [ʃajje:t]. Similarly, the raising occurs twice in a singular noun by adding the raised feminine suffix /æ/ [e] to the word that has a raised vowel in a preceding syllable, like [ʔiste:ze] ‘teacher (fem)’.

Masculine object pronouns /æ:h/ and /æ:k/ prefixes are raised towards [e:] and [e:k] respectively anywhere, like [ʃifne:] ‘we saw’ and [ʃʔajne:k] ‘we gave you’. Second masculine possessive pronoun /æ:k/, on the other hand, is not raised towards [ek] to differentiate between masculine and feminine second possessive pronouns. For example, [mæʃæk ‘with you’ and [ʃtæræjtellæk] ‘I bought something for you’ are masculine while [mæʃek] ‘with you’ and [ʃtæræjtellek] are feminine. Raising of [æ] of possessive pronoun suffixes towards [e] changes the gender of the suffix in the variety of Mahrouna.

Indefinite accusative /æɪn/ is either raised or not in the variety of Mahrouna.

Allophone [æ] in the indefinite accusative in borrowed words from Modern Standard Arabic, like [shukræn] ‘thank you’, [mæsælæn] <[mæthælæn] ‘for example’ and [ʔæhlæn] ‘welcome’, is not raised towards [e]. However, [ʔæhlæn] might also be pronounced as [ʔæhle:n] in the variety of Mahrouna, and in this case, the indefinite accusative /æɪn/ is raised towards [e:n]. Blanc (1964) considered the /e:n/ prefix to be dual; however, Brustad (2000) considered it to be a case of raising. Both examples, [ʔæhlæn] and [ʔæhle:n] are commonly used in Mahrouna.

### 3. *Lexical Conditioning*

Raising of [æ] or [æ:] occurs in all word classes in the variety of Mahrouna, mostly in nouns. Sibawayhi’s finding about the raising of /a:/ in a word used as a proper noun and not as an adjective is not evident in the variety of Mahrouna. That is, the raising of medial [æ:] occurs in both proper nouns and adjectives in this variety. For instance, [æ:] in [ke:mil] < [kæ:mil] proper noun; perfect as an adjective’ is raised in both word classes.

#### a. Proper Nouns

The following table shows a set of proper nouns uttered by people of Mahrouna and the way they are pronounced in urban varieties.

	Variety of Mahrouna		Urban varieties
1	Hæni	[he:ne]	[hæ:ni]
2	Jæmæɪl	[ʒæme:l]	[ʒæmæ:l]
3	Jæwæɪd	[ʒæwe:d] / [ʒæwi:d]	[ʒæwæ:d]
4	Mænhæɪl	[mænhæɪl] / [mænhel]	[mænhæɪl]
5	Zæinæb	[zæinæb] / [zæineb]	[zæinæb]
6	Mæhrūnæ	[mæhru:næ] / [mæhru:ne]	[mæhru:næ]

7	Jwæyyæ	[ʒwæjjæ]/ [ʒwæjje]	[ʒwæyyæ]
8	‘wāḍa	[ʕwa:ða]	[ʕwa:ða]
9	khalīl	[xæli:l]	[xæli:l]

Table 14: Raising of [æ] and [æ:] in proper nouns

Table 14 shows the raising of medial (examples 1-5) and final (examples 6-9) [æ] and [æ:] in proper nouns in the variety of Mahrouna. Since [æ] and [æ:] are raised towards [e]/[i] and [e:]/[i:] respectively, the proper nouns in examples 3-7 are mentioned twice to represent the two phonological realizations of the proper nouns. Examples 1 and 2 show that medial [æ:] is only raised towards [e:], while example 3 shows that medial [æ:] is raised towards [e:] and [i:]. Medial [æ:] was not raised towards [i:] in example 1 to differentiate between the proper noun and imperative verb [hi:ni] ‘disgrace’ that already exists in the variety; similarly, medial [æ:] was not raised towards [i:] in example 2 to differentiate between the mentioned proper noun and another proper noun that exists in the variety, [zami:l].

Examples 4-7 show that [æ] in medial and final positions in proper nouns are either raised or not. Only the seven speakers who were mentioned above raise final [æ] towards [e], while the rest do not. Finally, examples 8 and 9 show that the raising phenomenon does not occur because [æ] and [æ:] are in the direct proximity of an emphatic and a velar sound respectively.

b. Borrowed Words from Modern Standard Arabic

Unlike Habib (2012)’s findings in the Syrian variety of Oyoun al-Wadi, medial and final [æ] and [æ:] of borrowed words from Modern Standard Arabic are raised in the variety of Mahrouna. The raising occurs according to the phonological and morphological conditions that govern its occurrence.



	Variety of Mahrouna		Urban varieties	Gloss
1	bærā'æ	[bara:ʔæ]	[bara:ʔæ]	'innocence'
2	maskhara	[masxara]	[masxara]	'irony'
3	bašīš	[baši:š]	[baši:š]	'ray'
4	'ædmighæ	[ʔædmiyæ]	[ʔædmiyæ]	'minds'
5	qumme	[qumme]	[qumme]/[qimmi]	'apex'
6	dimuqrāṭiyye	[dimuqra:tijje]	[dimuqra:tijje]/[dimuqra:tijji]	'democracy'
7	tawāšol	[tawa:šol]	[tawa:šol]	'connection'
8	qāšer	[qa:šer]	[qa:šer]	'juvenile'
9	taqā'od	[taqa:ʕod]	[taqa:ʕod]	'retirement'
10	'ijtimē'e	[ʔiztime:ʕe]	[ʔiztime:ʕe]/[ʔiztime:ʕi]	'sociable'
11	mubēḥæ	[mube:hæ]	[mube:hæ]	'permissible'
12	mudehæmēt	[mudehæme:t]	[mudehæme:t]	'attacks'

Table 15: Examples of borrowed words from Standard Arabic in the variety of Mahrouna

Table 15 shows examples of borrowed words from Modern Standard Arabic in the variety of Mahrouna. As mentioned in the Chapter I, borrowings from Standard Arabic are most frequent in the speech of the young generation. However, the chosen words in the above table are common in the repertoire of all speakers. Examples 1-4 and 7 show that [æ] in medial positions of borrowed words from Standard Arabic is not raised in the variety of Mahrouna when it is in the direct proximity of uvulars, gutturals, emphatic sounds, and [r]. Examples 2 and 4 show that [æ] in final positions of borrowed words from Standard Arabic is not raised when it follows a guttural or a velar sound. Example 5 shows that [æ] is raised in final positions when it is not preceded by any elevated sound or [r].

In addition, examples 7-9 show that medial [æ:] of borrowed words from Standard Arabic is realized as [a:] in the variety of Mahrouna when it is in the direct proximity of an

emphatic sound, uvular or guttural consonants, or [r]. Elsewhere, i.e. examples 10-13, medial [æ:] is raised.

However, [ʕædæm] ‘non-’ which is a borrowed word from Standard Arabic is never raised in the variety of Mahrouna, though [æ] of the second syllable is not adjacent to any guttural sound. There are two reasons that might justify the non-raising of this token. It is either that the word is a new borrowing to the village and is not raised yet or that it has other colloquial forms that are more used in the variety, like [mæ:], [mish], or [bil marra].

c. Simple and Compound Nouns

It is important to mention that the raising of final [æ] in nouns depends on whether the noun is simple or compound. That is, [mistæʃfe] < [mistæʃfæ] ‘hospital’ has a raised [æ] since the orthographic /æ/ is not preceded by any elevated sound or [r]. However, when [mistæʃfe] is added to a proper noun and thus creating a compound noun, the raising is prohibited. That is, people of Mahrouna raise final [æ] towards [e] when hospital is a simple noun; however, when it is added to a proper noun, like [mistæʃfæ hiræ:m] ‘Heeram Hospital’, the final [æ] of the common noun is not raised.

d. Numerals

Raising of single-digit numerals also differs according to whether the numeral is simple or complex. Numbers [tle:te]/ [tle:tæ] ‘three’, [khæmse]/ [khæmsæ] ‘five’, [sitte]/[sitta] ‘six’, and [tme:ne]/ [tme:næ] ‘eight’ are present in the two forms: one with a raised ending and one without raising. When the numeral is used in isolation to name a number, [æ] is raised in final positions. However, when it is mentioned in complex numbers and this numeral is in the ‘units’ position, final [æ] is not raised, like [tme:næ] w [khamsi:n] ‘fifty-eight’.

As the young generation borrows tokens from Modern Standard Arabic, they borrow words from foreign language. These borrowed words maintain their original pronunciation when used. However, changing them to plural (adding /æ:t/ or /a:t/ suffixes) follows the phonological rules discussed in Section 1.

e. Borrowed Words from Foreign Languages

Variety of Mahrouna		Gloss
1	Ræpīd	[ræpi:d] 'automobile'
2	Villa	[vi:lla] 'villa'
3	Līstæ	[li:stæ] 'list'
4	bæsbōr	[bæsbo:r] 'passport'
5	gælon	[gælon] 'gallon'
6	ʃalōn	[ʃalo:n] 'living room'
7	fōbyæ	[fo:bjæ] 'phobia'
8	terminæ:l	[terminæ:l] 'Lebanese official examinations'
9	bækgræ:wnd	[bæ:kgræ:wnd] 'background'
10	ribortæ:j	[ribortæ:ʒ] 'T.V. segment'
11	rædæræt	[rædæræ:t] 'radars'
12	fizonēt	[fizone:t] 'leggings'
13	motsiklēt	[motsikle:t] 'motorcycles'
14	bejēma	[poste:t] 'posts'

Table 16: Examples of borrowed words from foreign languages in the variety of Mahrouna

Table 16 shows a representative sample of borrowed words from foreign languages in the variety of Mahrouna. These words maintain their way of pronunciation and they are changed into plural by adding the feminine plural suffix. That is, examples 1, 4, and 5 show medial [æ] that is not raised, though it is not adjacent to the sounds that inhibit the raising in the variety of Mahrouna. Similarly, examples 3, and 7 show final [æ] that is not

raised, though it is also not adjacent to elevated sounds. Examples 8-11 show examples of medial [æ:] that is also not raised. Finally, the [æ:] in feminine plural suffix in examples 12-14 is raised because it is not preceded by an elevated sound or [r].

#### **4. *Extralinguistic factors***

The study focused primarily on the linguistic conditionings governing the raising of [æ] and [æ:] in medial and final positions in the variety of Mahrouna. The following section comments on the effect of age and gender on the variants of raised [æ] and [æ:].

##### **a. Different Raised Variants across the Two Genders**

Habib (2012) and Shalabi (1957) described the phonetic environments governing the raising of [a] and [a:] in medial and final positions in Oyoum al-Wadi an Egypt respectively. They did not discuss the sociolinguistic factors that could have caused the variation such as gender, age, education, and the like. In fact, as noted in Chapter II, Woidich (2011) and Walters (1991) found that there are gender differences in the raising of [æ]/[æ:] and [a]/[a:] in Cairene and Tunisian varieties respectively. In light of their findings, the raised variants of [æ] and [æ:] in medial and final positions were compared between the speech of males and females in the variety of Mahrouna.

Results showed that, unlike Tunisian and Cairene people, men and women of Mahrouna raise [æ] and [æ:] in medial positions similarly. That is, both genders raise medial [æ] towards [e] and [i], and [æ:] towards [e:] and [i:]. Similarly, men and women raise [æ] and [æ:] in final positions towards [e]/[i] and [e:] respectively in the variety of Mahrouna. In other words, there are no gender differences in the raising of [æ] and [æ:] in medial and final positions in the variety of Mahrouna.

b. Different Raised Variants across Different Age Groups

Walters (1991) found that the raising of [a]/[a:] differs between the young and old generations in Tunisia. In light of Walter's finding, the following section compares the variants of raised [æ] and [æ:] in medial and final positions of the three generations of Mahrouna: young (18-40 years old), middle-aged (41-64 years old), and old generations (65-84 years old).

Results show that people belonging to the young and middle-aged generations raise medial and final [æ] and [æ:] towards [e] and [e:] respectively; the old generation, on the other hand, raises [æ] and [æ:] towards [i] and [i:] respectively. Hence, the raised variants differ according to the age of the speaker, and age is the only extralinguistic factor that shows differences in the raised variants of [æ] and [æ:] in medial and final positions. The old generation (65-84 years old) represents the retirees of Mahrouna. Four out of the eleven participants belonging to this age group do not raise medial [æ:] towards [i:]; the age of these participants ranges between 65 and 68 years old. In other words, these four people, similar to the young and middle-aged generations, raise [æ:] towards [e:] only. The remaining seven participants, who raise [æ:] towards [i:], are between 79 and 84 years old. Hence, according to the raised variants of [æ] and [æ:], speakers of Mahrouna could be divided into two age groups: 18-68 and 79-84 years old.

The difference in these variants, according to the age of the speaker, could be due to geographical mobility. The oldest speakers were and are still less mobile than the young generation. Thirty five years ago, when Israel invaded the South, people belonging to the 79-84 age group were in their forties and they already established a life in the village: got married, had children – some even became grandparents, and had their own businesses. They stayed in the village because Israelis only chased teens and young adults. People of

the middle-aged generation now were in their twenties back then. They fled to Beirut. Their contact with people of Beirut leveled their raising of [æ] and [æ:] towards [e] and [e:] instead of [i] and [i:] like their parents. As for the youngest generation, due to education, media, mobility, and their parents' raised variants, they raise [æ] and [æ:] towards [e] and [e:] respectively.

## CHAPTER V

### CONCLUSION

This study discussed the phonological, lexical, and morphological conditionings governing the phonological phenomenon of raising of low front vowels [æ] and [æ:] towards either mid front vowels [e] and [e:] or high front vowels [i] and [i:] in medial and final positions in the spoken dialect of Mahrouna in South Lebanon. This study is the first of its kind in Lebanon, the second in the Levant, and the third in the Arab world. The other two studies, Habib (2012) and Shalabi (1957), limited their discussions to the phonological and morphological environments that favor or inhibit the raising phenomenon. However, this study also compared the variation in the allophones of raised [æ] and [æ:] among males and females of different age groups.

Results showed that raised allophones of /æ/ and /æ:/ in medial positions differ according to the age of the speaker. Based on these variants, speakers of Mahrouna were divided into two age groups: 18-68 and 79-84 years old. The first age group raises medial [æ] and [æ:] towards [e] and [e:] respectively, while the second age group raises them towards [i] and [i:] respectively. The raising phenomenon occurs when [æ] or [æ:] are not adjacent to emphatic ([s], [d], [t], and [z]), guttural ([ʔ], [ħ], and [ʕ]), and velar sounds ([x] and [χ]).

Results also showed that women and men raise [æ] and [æ:] in medial and final positions similarly towards the same variants; that is, there are no gender differences in the variants produced. Finally, there are no gender differences across the two age groups; that is, males and females of the same age group raise [æ] and [æ:] in medial and final

positions towards the same variants. Hence, age is the only extralinguistic factor that leads to the variation in the allophones of raised [æ] and [æ:].

Raising of medial [æ] and [æ:] occur in the final syllable of words and does not require having [i] or [i:] in the vicinity of [æ] or [æ:]. Though shortening of [æ:] to [æ] in final positions inhibits the raising phenomenon, [ʔæne] 'I' is always raised by all speakers of Mahrouna because it is an identity marker. In addition, the raising phenomenon could occur twice in medial positions for ease of articulation. The raising phenomenon could also occur in two positions: one in medial position and one in final position. The occurrence of the raising twice within a word was justified using the Lexical Phonology Theory. Finally, the study has identified certain morphological patterns and some suffix morphemes that allow the occurrence of the raising phenomenon.

Furthermore, borrowed words from Standard Arabic and foreign languages with [a] and [a:] maintain their original pronunciation in the variety of Mahrouna. However, the raising phenomenon could occur in the suffix morpheme of these words, if [æ] or [æ:] are not adjacent to emphatic, guttural, or velar sounds. Elsewhere, feminine plural suffix /æ:t/ is raised towards /e:t/; feminine singular suffix /æt/ is realized as [e]; and third masculine object pronoun suffix /æ:h/ is realized as [e:]. However, the raising phenomenon is prevented in possessive masculine pronoun /æk/ for semantic differentiation between male and female suffixes, since [ek] is the feminine possessive suffix in the variety of Mahrouna.

The phonological phenomenon of raising was firstly described in the eighth century; yet the first empirical study describing this phenomenon was done in the twentieth century and the second was done in the twenty-first century. This study adds to previous findings on lexical, phonological, and morphological conditionings that govern



the raising of /æ/ and /æ:/ in Arabic dialects. Similar studies on modern dialects would lead to a better understanding and explanation of the raising phenomenon.

Finally, the raising of medial [æ] and [æ:] towards [o] and [o:] respectively, traditionally called rounding, is present in the Lebanese varieties of Tripoli and Syrian dialects of Aleppo and Oyoun al-Wadi. Similarly, the raising of medial [æ] and [æ:] towards [i] and [i:] is present in rural Palestinian dialects and in the dialect of Druze in the Shouf in north-east of Beirut. Further investigation on raised variants of [æ] and [æ:] in medial and final positions might show a relationship among the mentioned dialects. Similarly, future research on this topic might explain the production of different variants of the raised vowels between different areas. Consequently, these studies lead to the knowing of the historical evolution of Arabic dialects and the possible influence of the Aramaic language on the modern Levantine dialects.

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## APPENDIX A

### INTERVIEW QUESTIONS

1. How would you describe Mahrouna to a stranger/ tourist?
2. What places would you advise a stranger/ tourist to visit? Why?
3. Which place in Mahrouna do you favor the most? Why?
4. What customs of Mahrouna do you like?
5. What customs of Mahrouna do you dislike?
6. Do you think the social relationships between people of Mahrouna have been changing over time? How?
7. If you were to move to another village or city, where would you move to? Why?
8. How do the surrounding villages differ from Mahrouna?
9. Do you visit Beirut frequently? What do you like and dislike in it?
10. How do you spend your free time?
11. How do you think the new generation is affecting social, economic, and educational standards of Mahrouna?

## APPENDIX B

### TRANSCRIPTION AND TRANSLITERATION GUIDE

Arabic	Transliteration	Transcription
ء	ʾ	ʔ
ب	b	b
ت	t	t
ث	th	θ
ج	j	ʒ
ح	ḥ	ħ
خ	kh	x
د	d	d
ذ	dh	ð
ر	r	r
ز	z	z
س	s	s
ش	sh	ʃ
ص	ṣ	s̥
ظ	ḏ	d̥
ط	ṭ	t̥
ظ	ẓ	z̥
ع	ʿ	ç
غ	gh	ɣ
ف	f	f
ق	q	q
ك	k	k
ل	l	l
م	m	m
ن	n	n
ه	h	h
و	w	w
ي	y	j

Table 17: Phonetic transliteration and transcription guide of Lebanese Arabic consonants

## APPENDIX C

### LOCATION OF VOWELS

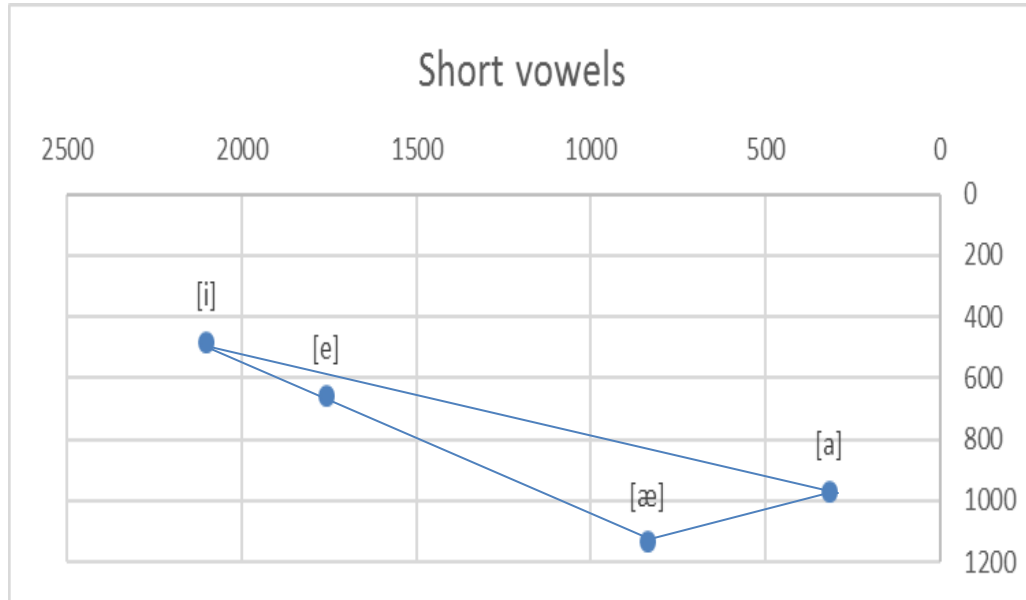


Figure 2: Location of short vowels of Mahrouna according to their formant values

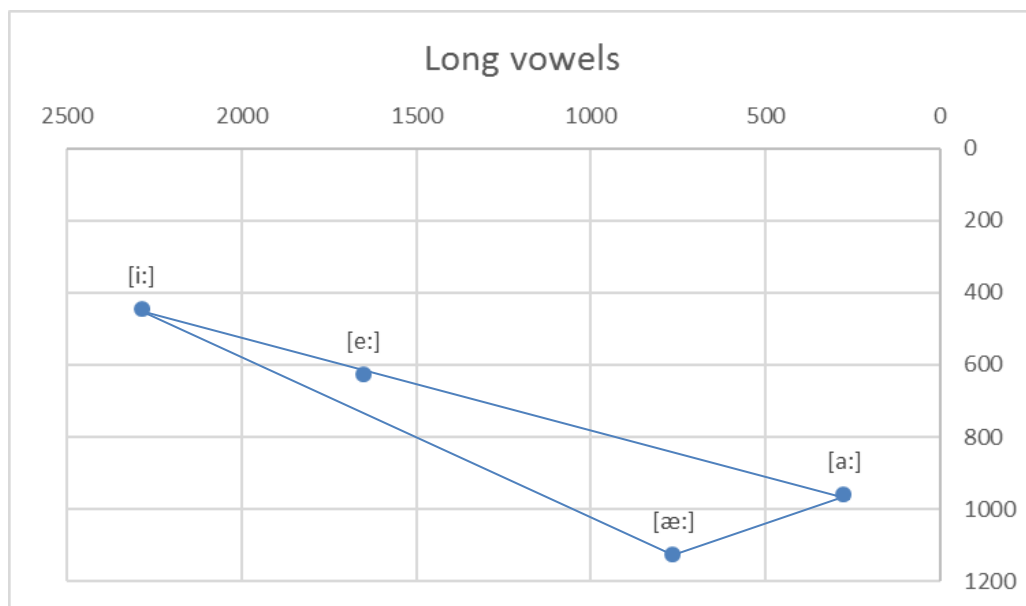
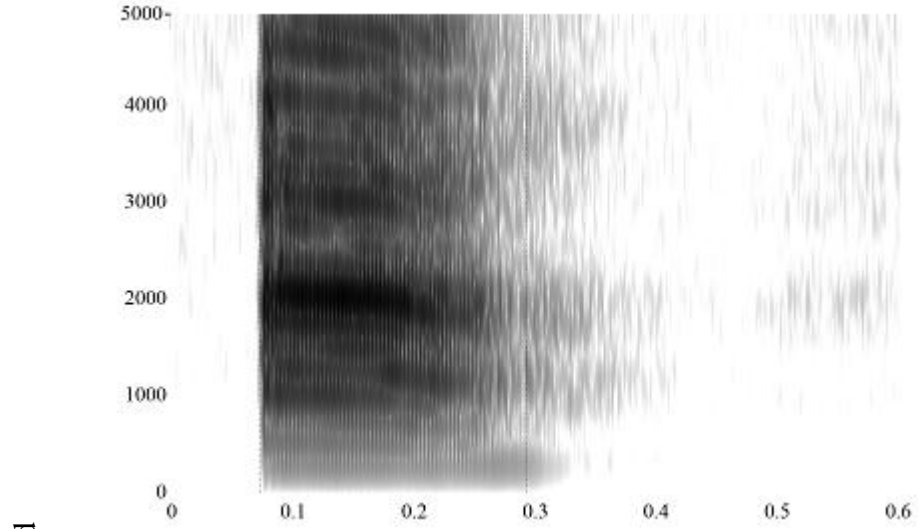


Figure 3: Location of long vowels of Mahrouna according to their formant values

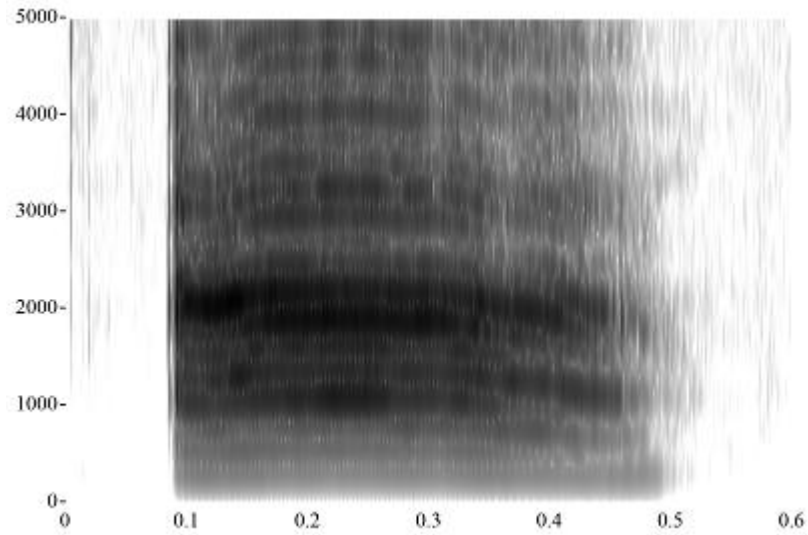
# APPENDIX D

## PRAAT SPECTROGRAMS



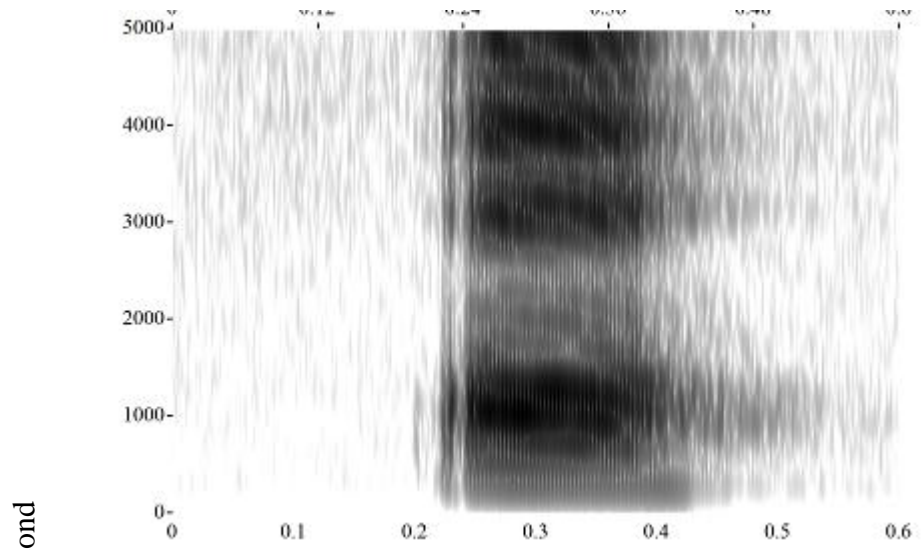
[æ]

Frequency in cycles per second

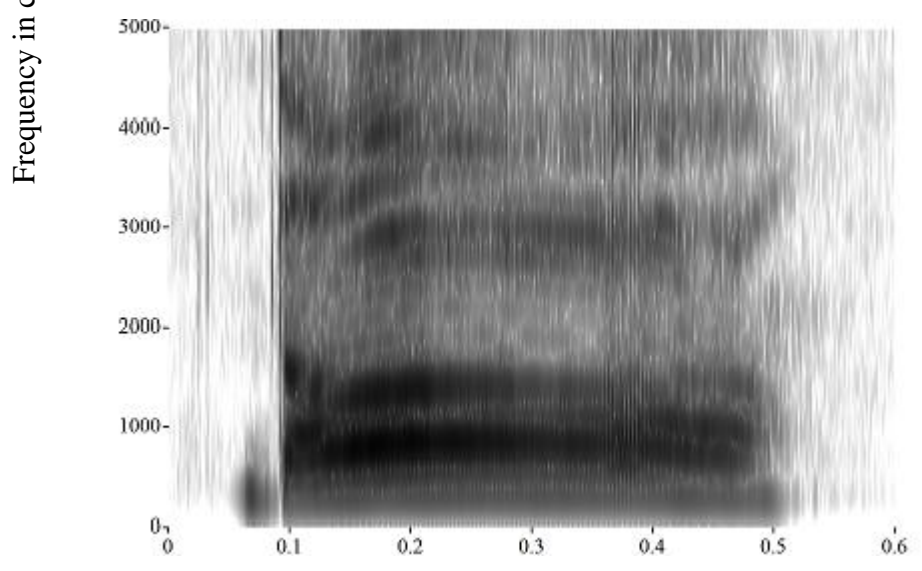


[æ:]

Time in seconds

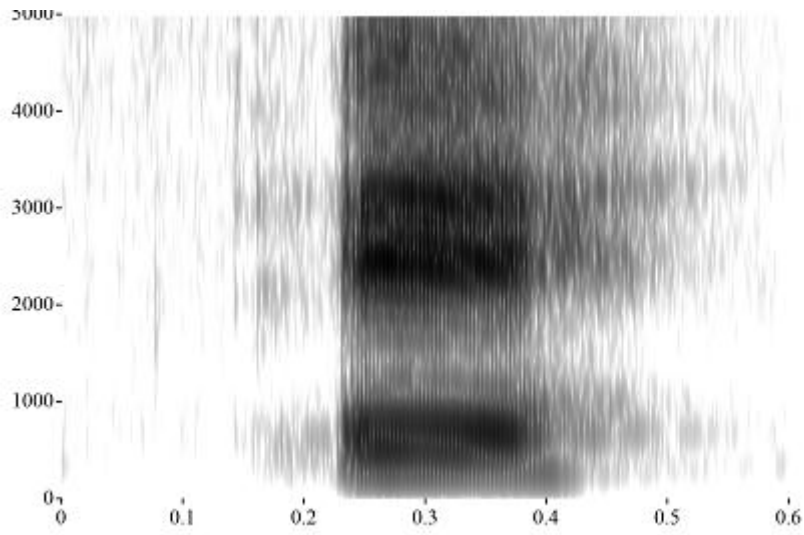


[a]



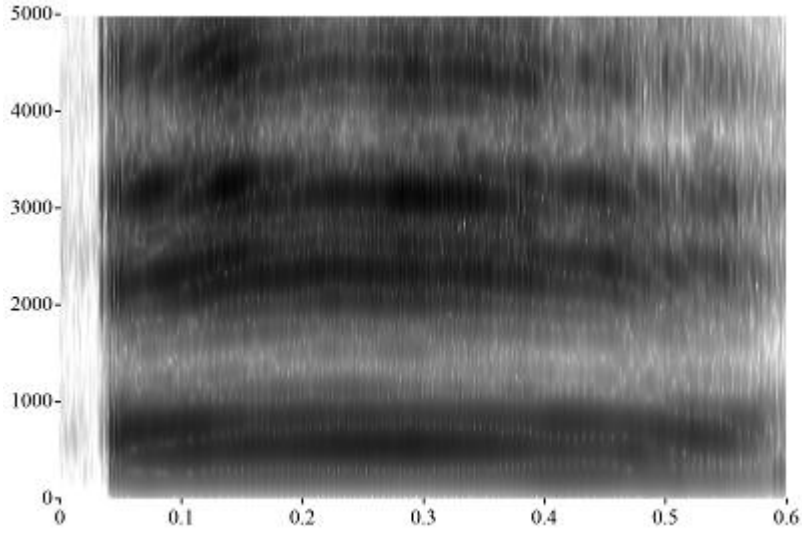
[a:]

Time in seconds



[e]

Frequency in cycles per second

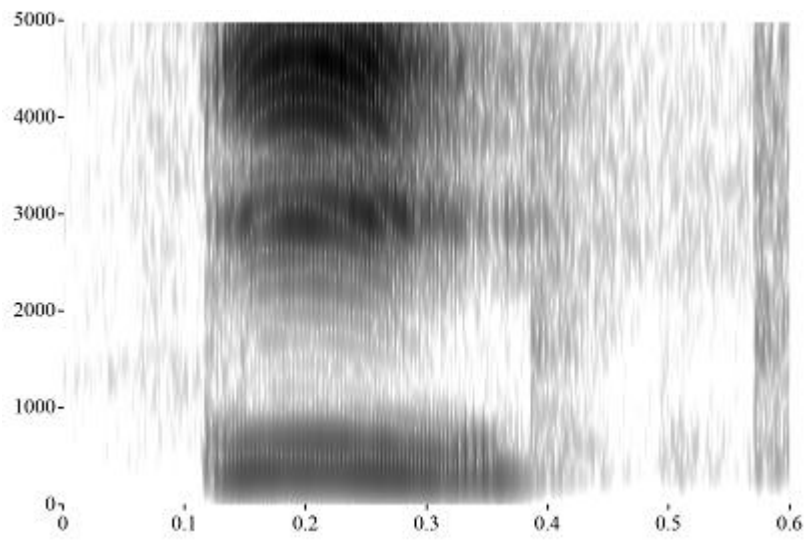


[e:]

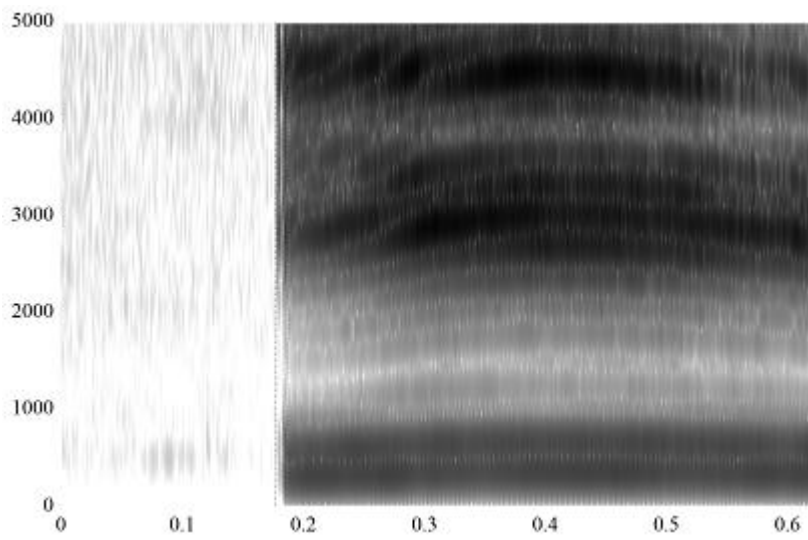
Time in seconds



Frequency in cycles per second



[i]



[i:]

Time in seconds

APPENDIX E  
DEMOGRAPHIC DATA

Interviewee	Gender	Age	Occupation	Days spent in Beirut per year
1	Female	18	university student	1
2	Female	23	teacher	1
3	Female	24	cashier	10
4	Female	26	teacher	0
5	Female	26	housewife	0
6	Female	40	housewife	0
7	Male	22	clerk	14
8	Male	22	photographer	0
9	Male	25	teacher	7
10	Male	29	electrician	0
11	Male	30	teacher	14
12	Male	38	fisherman	7
13	Female	48	housewife	4
14	Female	50	housewife	1
15	Female	52	teacher	0

16	Female	54	teacher	1
17	Female	55	housewife	1
18	Female	57	housewife	7
19	Male	48	waiter	0
20	Male	48	baker	0
21	Male	48	shop owner	2
22	Male	49	clerk	1
23	Male	50	soldier	14
24	Male	52	retiree	0
25	Female	65	housewife	0
26	Female	66	housewife	0
27	Female	67	housewife	0
28	Female	80	housewife	0
29	Female	84	housewife	0
30	Male	68	retiree	0
31	Male	79	retiree	2
32	Male	80	retiree	0
33	Male	81	retiree	0

34	Male	83	retiree	4
35	Male	84	retiree	0

Table 18: Demographic data