

Emphasis Spread and Depharyngealization in Lebanese Arabic

ABSTRACT

This paper explores the phenomenon of emphasis spread in Lebanese Arabic and its counteract, depharyngealization. While emphasis can spread leftward and rightward, this research details the exact rules that govern the mechanisms by which this process operates in Lebanese Arabic. Experiments were run with native Lebanese Arabic speakers to determine whether vowel properties, rather than the pharyngeal features of the consonant, are crucial in retaining emphasis. Emphasis retention and spread is strongly promoted and sustained in the vicinity of back vowels, while front vowels tend to block emphasis. Depharyngealization occurs when the emphatic consonants sit in an environment of vowels that are incompatible with the pharynx for secondary articulation, or if tautosyllabic with a guttural consonant. An important consequence for emphasis spread is the fact that it is mirrored in English by those who speak Lebanese Arabic as a native language. Native speakers of Lebanese Arabic were asked to pronounce English words with various vowels in different positions to test whether or not the speakers will pharyngealize the surrounding consonants by rule transfer. The results were consistent with what was found in Lebanese Arabic. When an English consonant precedes a vowel with similar characteristics to those that trigger emphasis in Lebanese Arabic, the speakers would pharyngealize the English consonant as well.

1. Introduction

Pharyngealized (emphatic) sounds are consonants which include a pharyngeal feature by involving the pharynx in their articulation. These consonantal sounds are articulated primarily in their underlying places of articulation, which are usually either alveolar/dental or velar, and secondarily by constricting the pharynx. These are usually referred to as *emphatics* (Davis, 1995). Emphatic consonants are characteristic of Arabic and its various dialects. Lebanese Arabic (LA) is no exception. LA has an extensive inventory of emphatics, which tend to be

rather ‘contagious’ when found in a word. This emphasis of consonants tends to spread, and that is why it is possible for every consonant to have a pharyngealized allophone. These pharyngealized allophones can only be realized when found in the proximity of an original emphatic consonant. Underlying emphatic sounds are in complementary distribution with their non-emphatic counterparts, while consonants that get pharyngealized as an effect of emphasis spread by being in the proximity of original emphatics have no opposition with their allophones. Underlying LA emphatics include:

[tʰ] [dʰ] (pharyngealized alveolar stops)

[sʰ] (pharyngealized alveolar fricative)

[ðʰ]* (Mostly realized as [zʰ], but realized as [dʰ] in some instances)

[qʰ]* has debuccalized to a glottal stop in all environments.

[rʰ]* is realized as an emphatic in some environments (i.e. it is an underlying emphatic although it has no opposition with the non-pharyngealized trill [r]).

[lʰ]* only in one word, namely, “Allah”.

When one of the aforementioned emphatic consonants appear in a word, and does not get depharyngealized –which happens in certain environments-, emphasis tends to spread to the neighboring sounds. The patterns of emphasis spread are said to differ according to dialect (Davis, 1995). In this paper, I collect and analyze data from LA to determine the pattern of emphasis spread, its triggers, the mechanism by which it operates as well as whether emphasis spread can be blocked. Depharyngealization will also be accounted for in order to create a more complete picture for pharyngeal spreading (or lack thereof).

2. Literature Review

In a study of emphasis spread in Najdi Arabic (Saudi Arabia), Alhammad (2014) found emphasis spreading rightward and leftward, but strictly within morphological roots. Affixes, such as the feminine marker *-at/-ah* or the feminine sound¹ plural marker *-āt*, were not affected by the spread of emphasis. This is starkly different from what is found in LA, where affixes do undergo the effects of emphasis spread. Alhammad (2014) also shows the retention of vocalic features within the affixes, since they are not affected by emphasis spread, so *-āt* is retained as a low central vowel in all environments. In LA, vocalic features largely depend on the consonant preceding or following the said vowel. For instance, *-āt* is retained (and moves further back) if preceded by an emphatic sound, while *-āt* loses its back and low features if preceded by a non-emphatic consonant *-āt* becomes *-ēt*. LA vowels, in certain combinations and realizations, have the ability to “bend” consonants to their will and trigger depharyngealization. The opposite is also true. In some environments, the emphatic consonants (underlying or affected) allow vowels to retain their backness feature, or otherwise accommodate the pharyngeal features of preceding or following consonants. Alhammad also maintains that emphatic stops can only pharyngealize fricatives. Huneety and Mashaqba (2016) conclude that “suffixes become emphatic when they are tautosyllabic with an emphatic segment”, in their analysis of Juffin Arabic, a dialect of Jordanian Arabic spoken in the north of Jordan. While this holds true for some suffixes in LA, it is not always the case, as numerous counterexamples exist. The feminine sound plural marker *-āt* pharyngealizes if and only if tautosyllabic with an emphatic segment, but not other suffixes, such as the 3rd singular feminine marker for the past tense *-it*. For the latter, it is enough for a pharyngealized sound to be present in the word to become emphatic, provided the distance is not

¹ Sound as opposed to broken is a term for nouns which follow a regular pattern/rule in Arabic.

more than two syllables. Other methods of research and attempts to account for emphasis spread concern phonetics and grounded phonology, where the latter argues for a close intertwining of phonetics and phonology (Archangeli and Pulleyblank, 1994). Proponents of this approach describe the shape of the tongue when pronouncing original emphatics and segments that are pharyngealized as a result of spread. Israel et al. studied emphasis spread in Lebanese Arabic using rtMRI (real time magnetic resonance imaging). Among the results, they note that “word-finally, emphaticization is weaker but significant (2012: 3; §3.3)”. Out of the scope of this paper are the results that include tongue shape, retraction or otherwise, which is found in researches which adopt the grounded approach. Davis (1995) relies on this theory and expounds on emphasis spread using features like [ATR] (advanced tongue root) and [RTR] (retracted tongue root). While this paper does not make any judgments about that method, the aim is to describe emphasis spread (and depharyngealization) in their respective phonological environments. Al-Bataineh (2019) reaches the conclusion that Optimality Theory, rather than Feature Geometry better explains emphasis spread (harmony) and the involvement of emphatic /r/. Blocking and directionality can also be comprehensively understood using OT. Depharyngealization is discussed in Davis’s study of a dialect of Palestinian Arabic (1995) mentioning data that appears in Herzallah (1990). The co-occurrence of “underlying uvulars” (/q/ /χ/ /ʁ/) -realized as [g], [x], [ɣ] respectively- leads to the depharyngealization of original emphatics to their non-emphatic counterparts, but only if the emphatic sits to the left of the underlying uvular. In LA, things are not so clear cut. The voiceless velar stop [k], for instance, depharyngealizes the voiced alveolar stop [dʕ] into [d] when they co-occur in a word if [k] precedes [dʕ]. Haddad (1983; cited in Kenstowicz 1994:42, in Watson 1999) shows that labialization of the non-final [i] occurs to prevent depharyngealization when the emphatic maps onto the “CiCiC” template. The rules and

constraints that govern emphasis spread (harmony) are not absolute and differ from one dialect to another. This is an important starting point for analyzing emphasis spread in LA.

3. Methodology

The data was selected in a way that tries to encompass all possible environments. Different templates (binyanim) have also been included to describe the phonological changes that take place when the vowel combination changes. The specifics of phonological criteria for choosing words here depended on a lot of factors, including vowel length before or after the underlying emphatic, vowels one and two syllables before or after the emphatic consonant, and emphatics situated word-initially, word-medially, and word-finally with the different vowel combinations. The existence (or lack thereof) of underlying emphatics helped detect protecting environments, spread reach and the potential for depharyngealization. As a result, the data was chosen solely on a phonological basis. The underlying emphatic in each word was capitalized during transcription in order to avoid confusing underlying emphatics with consonants that get pharyngealized as a result of emphasis spread. Liturgical language and words that occur in religious contexts and official ceremonies, and other terms that require Standard or Classical Arabic pronunciation were avoided. The reason for excluding such terms is that Modern Standard Arabic pronunciation (based on Classical Arabic) bears ‘unnatural’ rules that native speakers of LA (myself included) would otherwise not abide by. It is important to note, however, that comparisons must be made with Classical Arabic in environments where depharyngealization occurs, to avoid mistaking the depharyngealized underlying emphatic with its non-emphatic counterpart. The inclusion of English words was a means to verify whether this sound change can affect foreign language pronunciation for native speakers of LA. If emphasis spread can be triggered by vowels (back), then English does not need underlying emphatic consonants for spread to occur, but rather the

familiarity of spread-triggering vowels in English among speakers of LA should induce this phenomenon. A medley of words was collected and analyzed based on how people pronounce them, confirmed by informants, and based on my intuition as a native speaker (of the Beirut accent of LA). This point touches upon what is, perhaps, the research's greatest limitation. There is an abundance of dialects and accents in Lebanon. People living within 10 kilometers from each other may have drastically different pronunciation of the same input. Haddad (1984) had pronunciations from Raifouni and Damouri Lebanese, based on the accent of people from Raifoun and Damour, two Lebanese towns which are merely 50 kilometers apart. Regional differences seem significant. Hence, this research cannot generalize its findings and analysis, but rather describe one dialect (or possibly more) of Lebanese, which is a popular and general dialect nonetheless. Among the limitations is also the fact that the pharyngeal pronunciation of the words in the data cannot be confirmed using phonetic devices or measurements, as such devices were not available. An obstacle may arise here due to the phonological nature of emphatic consonants. If we do not measure empirically, how are we to know that a sound has been pronounced with emphasis [+pharyngeal] feature? Apart from relying on each informant's intuition (and mine), there are vocal alternations that are licensed according to whether or not a segment is pronounced emphatically. Low, back vowels and front mid vowels are one instantiation of this alternation. Alongside intuition and consonantal features, vowels may prove to be a way to confirm emphatic pronunciation. However, phonological analysis is believed to be sufficient enough to predict with precision the causes (environments) of this sound change.

4. Data & Analysis

4.1.1 The feminine marker and the /a/ [e] dichotomy

The feminine marker in LA is *-at*, with the final /t/ debuccalizing to a [h], or even disappearing altogether, if not followed by a noun. Pronounced in isolation, *-at* is realized as [a(h)], and this is why loan words that end with /a/ can be borrowed into LA with the feminine marker instead of a long /a/ (cf. [fe:tura] spelled with feminine marker from Italian ‘*fattura*’ as opposed to [sinema] from French ‘*cinema*’ spelled with a long /a/ vowel). This difference in spelling is crucial in determining whether the low /a/² can be raised to a mid [e]. Words which are spelled with a long /a/, albeit pronounced exactly like those which are spelled with the feminine marker, cannot undergo this change. If a word is otherwise spelled with a feminine marker, and the consonant preceding it is not a pharyngeal/uvular (realized as velar) or an underlying pharyngealized consonant, then the feminine marker is pronounced [e]. Pharyngeal/uvular³ consonants include:

/ħ/ voiceless pharyngeal fricative
/ʕ/ voiced pharyngeal fricative
/χ/ voiceless uvular (LA velar [x]) fricative
/ʁ/ voiced uvular (LA velar [ɣ]) fricative
/h/ glottal fricative
/ʔ/ glottal stop (the ones that are originally /q/ as well)

Table A

For any other consonant preceding the feminine marker, the final /a/ raises to a mid [e]:

² /a/ is realized as a back [ɑ] if it is not raised to a mid [e].

³ Called “guttural” by McCarthy (1994)

Non-emphatic, non-pharyngeal/uvular consonant: /tʕawila/ ‘table’ (Classical Arabic) – [tʕawle] (LA)

Uvular (velar) consonant: /χauχa/ ‘plum’ (CA) – [xauxa] (LA)

4.1.2 Implications for emphasis spread in LA

Table 1 shows that emphasis does not spread to the last syllable if the consonant preceding the feminine marker allows the latter to be pronounced [e]

Table 1

1. [Tʕa:be] ‘ball’	No emphasis spread
2. [Tʕa:se] ‘helmet’	No emphasis spread
3. [ʃʕaTʕa:fe] ‘toilet sprinkler’	Emphasis spreads leftwards
4. [ʃʕalʕTʕa:ne] ‘she is wrong’	Emphasis spreads leftwards
5. [Sʕaħi:fe] ‘newspaper’	No emphasis spread
6. [Sʕayʕdʕale] ‘pharmaceutical studies’	Emphasis spreads rightwards, but not to the last syllable
7. [Sʕuʕu:be] ‘difficulty’	Emphasis spreads rightwards, but not to the last syllable

For masculine nouns lacking a final [e] or /a/, emphasis does spread regardless of the final consonant:

(8) [ʒʕunʕTʕa:sʕ] ‘bowl’

Where /s/ is pronounced as [sʕ] here.

Emphasis can also spread to the last syllable if the penultimate consonant preceding the feminine marker /a/ is pharyngeal/uvular:

(9) [r^ʕD^ʕɑːf^ʕɑ] ‘breastfeeding’

(10) [f^ʕɑS^ʕɑːh^ʕɑ] ‘eloquence’

Note that emphasis spreads leftwards and rightwards in ‘eloquence’.

Table 2 shows that for words ending with a long /a/⁴ vowel, penultimate consonants are subject to emphasis spread regardless of their underlying place of articulation:

Table 2

1. [T ^ʕ ɑːz ^ʕ ɑ] (from Classical Arabic /T ^ʕ ɑːzadʒ/) ‘fresh’	Emphasis spreads rightwards
2. [D ^ʕ ab ^ʕ b ^ʕ ɑ] ‘he put it away’	Emphasis spreads rightwards
3. [S ^ʕ ar ^ʕ r ^ʕ af ^ʕ ɑ] ‘he exchanged it’	Emphasis spreads rightwards (2 syllables)
4. [S ^ʕ ab ^ʕ ɑːy ^ʕ ɑ] ⁵ ‘young women’	Emphasis spreads rightwards (2 syllables)

The singular form of ‘young women’ (4) in Table 2 is [s^ʕabiyye], where emphasis is blocked starting from the syllable which contains [i] onwards.

4.2.1 The feminine sound plural

To form the sound plural of feminine nouns in LA, -āt is added at the end of the word, replacing the feminine marker -at. Just as with the feminine marker, the rule that governs the pronunciation of the vowel depends on the consonant preceding it. Emphatics and pharyngeal/uvular take a

⁴ Final long vowels are realized as short vowels in LA. If emphasis spreads to the syllable containing the /a/ vowel, it is realized as [ɑ], otherwise retained [a].

⁵ Some speakers can escape emphasis spread by raising the long back vowel [ɑː] to [eː] which prevents emphasis spread rightwards completely [s^ʕabeːya].

back [ɑ:] vowel while for all else, a front [e:] vowel takes the place of /a:/. Table 3 takes nouns from Table 1 with the feminine sound plural marker added to observe the changes:

Table 3

1. [Tʰɑ:be:t] ‘balls’	No emphasis spread
2. [Tʰɑ:se:t] ‘helmets’	No emphasis spread
3. [ʃʰɑTʰɑ:fe:t] ‘toilet sprinklers’	Emphasis spreads leftwards
4. [Sʰuʃʰu:be:t] ‘difficulties’	Emphasis spreads rightwards but not to final syllable

4.2.2 Implications for emphasis spread

There is no difference in the spread of emphasis with the feminine sound plural marker if the preceding consonant was a non-emphatic or a non-pharyngeal/uvular. The final /t/ is also blocked from receiving emphasis, unlike what happens when the preceding consonant is indeed emphatic or pharyngeal/uvular, where the final /t/ is realized as a pharyngealized [tʰ] as an effect of emphasis spread. Unlike other dialects of Arabic where emphasis cannot spread to affixes (Alhammad, 2014), LA demonstrates the possibility of emphasis reaching final affixes as shown in Table 4.

Table 4

1. [Tʰayʃʰɑ:rʰɑ:tʰ] ‘airplanes’	Emphasis spreads rightwards
2. [hʰfɑ:Dʰɑ:tʰ] ‘diapers’	Emphasis spreads all across the word
3. [ʔihtiʃʰɑTʰɑ:tʰ] ‘preventive measures’	Emphasis spreads rightwards. It spreads leftwards up until the syllable ending with [i]

4. [S ^h in ^h a:ŋ ^h a:t ^h] ‘industries’	Emphasis spreads rightwards
5. [biT ^h a:ʔ ^h a:t ^h] ‘cards’	Emhpasis spreads rightwards. Leftwards spread blocked by [i]
6. [T ^h ab ^h b ^h a:χ ^h a:t ^h] ⁶ ‘cooks (fem.)’	Emphasis spreads rightwards

4.3.1 The third person feminine singular past conjugation:

To get the third person feminine singular past tense of verbs, *-at* is added to the end of the verb. LA speakers, however, raise the vowel /a/ in this *-at* ending to a mid, central schwa [ə]⁷. When this vowel is raised and centered, it allows for emphasis to spread beyond the boundary of the morpheme to an emphatic pronunciation of the subsequent [t^h] in *-at*. Table 5.1 shows the verbs from Table 2 conjugated for the third person feminine singular past and adds two more verbs in order to illustrate the way emphasis spreads in such case:

Table 5.1

1. [D ^h ab ^h b ^h ət ^h a] ‘she put it away’	Emphasis spreads rightwards
2. [S ^h ar ^h r ^h af ^h ət ^h a] ‘she exchanged it’	Emphasis spreads rightwards
3. [s ^h t ^h ah ^h D ^h am ^h ət ^h a] ‘she found her funny’	Emphasis spreads all across the word
4. [f ^h aD ^h D ^h ət ^h l ^h a] ‘she emptied her(DATIVE)’	Emphasis spreads all across the word

⁶ The otherwise velar fricative goes back to its original uvular place when it receives emphasis as a result of spread and is pronounced [χ^h].

⁷ For speakers of other dialects of LA, this vowel is realized as the original [a] in this case, for which emphasis does not spread, otherwise moving to a back [ɑ] for which emphasis does spread.

Table 5.2 adds the suffix *-ne* ‘me (ACCUSATIVE)’ to the verbs in Table 5.1. Unlike (4) in 5.1, emphasis does not spread to the final suffix.

Table 5.2

1. [Dʰabʰbʰətʰne] ‘she put me away’	Emphasis does not spread to the final syllable
2. [Sʰarʰrʰafʰətʰne] ‘she exchanged me’	Emphasis does not spread to the final syllable
3. [sʰtʰahʰDʰamʰətʰne] ‘she found me funny’	Emphasis does not spread to the final syllable
4. [fʰaDʰDʰətʰle]/[fʰaDʰDʰətʰne] ‘she emptied me(DATIVE)’/ ‘she emptied me(ACCUSATIVE)’	Emphasis does not spread to the final syllable

4.3.2 Implications for emphasis spread

Table 5.1 demonstrates that emphasis can spread across entire words, cutting across syllables and segments. Morpheme and affix boundaries do not play a role in emphasis spreading to neighboring sounds. Monomorphemic and polymorphemic words function alike when it comes to emphasis spread, as long as vowels allow it. In Table 5.2, emphasis did not spread to the final suffix because of the front, mid vowel [e]. These data show that front vowels block emphasis spread, while central and back vowels do not. High, mid or low does not matter as (7) in Table 1 shows that high back vowels allow emphasis spread. Front vowels, such as [i] and [a], on the other hand, turn the syllable into an opaque one, to which emphasis cannot spread. One way to counteract this is the labialization of [i] which will be the focus of the coming section. On the other hand, if a speaker wants to escape emphasis spread, one way is to raise and front the long [ɑ:] to a mid, front [e:] vowel. This can only be done within a syllable which does not contain an

underlying emphatic, see (4) in Table 2. If the [ɑ:] is tautosyllabic with an underlying emphatic, then it cannot be fronted or raised.

4.4 Labialization and depaharyngealization

4.4.1 Labialization as an antidote to depaharyngealization

Labialization in simple terms involves the rounding of the lips when pronouncing a sound. While labialization can occur for both consonants and vowels, LA's front, high [i] can be labialized to a back, high [u] or [o]. The consequences of such labialization (or lack thereof) thus must be assessed, since according to our findings, front vowels block emphasis spread while back vowels allow it. In some instances, if [i] is not labialized,⁸ not only does it block emphasis spread but also cause depaharyngealization. To better illustrate this dichotomy, consider these two words from Classical Arabic (which appear in LA with a different pronunciation):

1. [Sʕifr] 'zero'

2. [fiTʕr] 'Muslim Holiday, breaking of the fast'

These two words are realized as [sifr] and [foTʕr] respectively in LA, and whereas the exact vowels cannot be accurately described, the front vowel for the former is the closest to the one pronounced. The underlying emphatic consonant of the former gets depaharyngealized, while the latter retains its emphatic pronunciation and also spreads it to the neighboring sounds. The position of the underlying emphatic (situated in the onset vs. in the coda of the syllable) could have been the trigger for labialization/depaharyngealization, or the underlying manner of articulation (fricative vs. stop). Davis (1995) ascribes depaharyngealization of [sʕ] and [dʕ]⁹ in

⁸ In the case when [i] appears in the neighborhood of an emphatic, and does not get labialized, then it is realized as a near-high near-front [ɪ].

⁹ For the dialect under consideration in Davis (1995), this is a pharyngealized dental fricative [ðʕ], which is found in LA either as a pharyngealized alveolar fricative [zʕ] or [dʕ].

Palestinian Arabic to the presence of one of the underlying uvulars “later in the word.”

According to Davis, then, depaharyngealization can only happen if one of the uvular consonants appear to the right of the emphatic, which is not the case for LA where depaharyngealization can happen without the existence of uvulars in the first place. To be able to identify the factor behind labialization or depaharyngealization, Table 6.1 shows data with different vowel combinations and different underlying emphatics:

Table 6.1

1. [x ^ʕ oD ^ʕ or ^ʕ] ‘proper name’ (CA [xiD ^ʕ r])	Labialization and spread. Underlying emphatic is a stop in the coda
2. [T ^ʕ ob ^ʕ b ^ʕ] ‘medicine’ (CA [T ^ʕ ibb])	Labialization and spread. Underlying emphatic is a stop in the onset
3. [ʔ ^ʕ oS ^ʕ or ^ʕ] ‘shortness’ (CA [Q ^ʕ iS ^ʕ ar ^ʕ])	Labialization and spread. Underlying emphatic is a fricative in the onset
4. [f ^ʕ uD ^ʕ D ^ʕ α] ‘silver’ (CA [fiD ^ʕ D ^ʕ α])	Labialization and spread. Underlying emphatic is a stop geminate.
5. [sɪdɪr] or [S ^ʕ od ^ʕ or ^ʕ] ‘chest’ (CA [S ^ʕ adr])	Depharyngealization or Labialization and spread.
6. [xasɪm] ¹⁰ ‘discount’ (CA [yaxs ^ʕ im] NON PAST)	Depharyngealization. Underlying emphatic is a fricative in the onset
7. [x ^ʕ as ^ʕ om ^ʕ] ‘opponent’ (CA [xas ^ʕ m])	Labialization and spread. Underlying emphatic is a stop in the coda

¹⁰ Might be an analogy with the similar sounding [ħasɪm] ‘discount’.

4.4.2 Depharyngealization causes

Depharyngealization can only happen if the underlying emphatic is in the onset of the syllable in CA. Even then, depharyngealization may be optional. This means, then, that there must be another factor at play here. Table 6.2 presents words where depharyngealization is not optional:

Table 6.2

1. [Diris] ‘molar tooth’	Depharyngealization before [ɪ]
2. [Di:ʔa] ‘narrowness’	Depharyngealization before [i:]
3. [rakaD] ‘he ran’	Depharyngealization after velar
4. [Dihke] ‘laughter/smile’	Depharyngealization before [ɪ]
5. [Sifir] ‘zero’	Depharyngealization before [ɪ]
6. [Sidiʔ] ‘truth’	Depharyngealization before [ɪ], [ʔ]
7. [Sandu:ʔ] ‘box or crate’	Depharyngealization before [ʔ]
8. [Safaʔ] ‘he slapped’	Depharyngealization before [ʔ]
9. [Taraʔ] ‘he tapped’	Depharyngealization before [ʔ]
10. [ʃanTa] ¹¹ ‘backpack or bag’	Depharyngealization
11. [Sfi:ha] ‘meatloaf’	Depharyngealization before [i:]

The data in Table 6.2 is crucial in determining the underlying cause of depharyngealization.

Moreover, these data show that the point raised in Davis (1995) holds for some words in LA, but is incomplete. To attribute depharyngealization merely to preceding underlying uvulars does not

¹¹ This is a loanword from Turkish, which does not have emphatic consonants. We know that this [t] which is non-emphatic now is a remnant of the emphatic [tʕ] because the final feminine marker is retained as [a] and is not raised to [e].

take into account words which have depharyngealized emphatics without a trace of uvular consonants. This means that words like ‘[Sɪfɪr]’ and ‘[rakaD]’ should be pronounced emphatically, which they may, for Palestinian Arabic, but not LA. The possible causes for depharyngealization, then, are more varied for LA. Table 6.2 (1,4,5) shows that an emphatic sitting in an onset position followed by [ɪ] may undergo depharyngealization. I say “may” here and not “must” because labialization is still a viable solution to counteract depharyngealization in some cases (cf. (5) in Table 6.1). In fact, the issue seems to be greater than a matter of choice. Consider the word in ‘6.2; 5’ [Sɪfɪr], the prohibition on labializing the vowels and thus retaining the emphatic pronunciation of the consonants works as a protective mechanism against having two words with two distinctive meanings but the same pronunciation. This means that depharyngealization in this case happens specifically because we have another word which looks and sounds similar [Sʰoʰʔorʰ] ‘yellow ADJ. PL.’. Yet, this is not always the case. ‘6.2;1’ could have been easily pronounced as [Dʰorʰosʰ], but instead speakers chose the depharyngealization path. However, it is important to note that [Dɪrɪs] in the plural would be [Dʰrʰɑ:sʰ], which suggests that this word undergoes **active** depharyngealization as opposed to **lexicalized** depharyngealization. This shall be further discussed in the coming section. Another cause for depharyngealization is situating the emphatic consonant before a long [i:] segment. This has been shown in ‘6.2; 2,11’. Again, this is not always the case as [i:] can follow an emphatic and still not trigger depharyngealization as in [mSʰi:be] ‘catastrophe’. Lastly, [ʔ] (coming from a debuccalized [q]) being present after the emphatic increases the chances for depharyngealization. The fact that depharyngealization is not unconditional, where counterexamples can be given, suggests that depharyngealization is not an absolute process, but rather an unstable state of the emphatic consonant. An emphatic consonant, especially [sʰ] (but also [dʰ] and [tʰ]) situated before

[ɪ], [i:] and [ʔ] loses its stability and is thus susceptible to depaharyngealization. It should be noted that in ‘6.2; 3’, the emphatic consonant gets depaharyngealized when tautosyllabic with the voiceless velar [k]. This word is perhaps a marginal occurrence, as velars do not usually couple with emphatics, and if emphasis spread were to operate, [k] would become [q] (McCarthy 1994; §12.4), which has debuccalized to a glottal stop in all environments, creating further complications and so depaharyngealization is triggered. This means that emphasis spread is not optional when the vowels allow it, but favorable, as it allows the underlying emphatic to retain its pharyngeal feature. Thus, we can talk about ‘de-emphasis spread’ as well. If an underlying emphatic gets depaharyngealized, it tends to spread. However, this should be further investigated as it falls out of the scope of this paper. The next section discusses depaharyngealization in depth, detailing the two postulated types of depaharyngealization.

4.5 Lexicalized and Active depaharyngealization

4.5.1 Lexicalized depaharyngealization

Word-initially	Word-medially	Word-finally
[s] سـ	سـ	س
[sʕ] صـ	صـ	ص
[z] ز	ز / زـ	ز / زـ

Figure 1 Arabic Spelling of [s] and [sʕ]

Since depharyngealization is the unstable state of the emphatic consonant, varying degrees of instability might cause a permanent loss of the pharyngeal feature. This can be seen with words that have lost the emphatic pronunciation of its underlying pharyngealized consonants all across the paradigms they belong to. These words, thus, would have been lexicalized as having a non-emphatic pronunciation of its consonants. To this extent, I suggest the existence of two subcategories of lexicalized depharyngealization, namely, weak and strong, wherein the weak words retain the emphatic consonant in spelling, but not in pronunciation, while the strong ones completely lost the emphatic, in spelling too, so much so that the remnants of the once-pharyngealized consonant can only be found in Classical Arabic. Such words are no longer even recognized as having once had the emphatic consonant. Table 7.1 illustrates with examples from Table 6.2 the case of weak lexicalized depharyngealization inflected for various categories, as well as showing their spelling¹²:

Table 7.1 Weak Lexicalized Depharyngealization

Singular	Plural	Causative	Verbal noun	Participle/Passive
1. [sɪfɪr] ‘zero’ صفر	[sfu:ra] صفرة	[saffar] صَفَّرَ	[tɪsfi:r] تصفير	[msaffar] مصَفَّرَ
2. [safʔa] ‘slap’ صفقة	[safʔa:t] صفقات	[saffaʔ] صَفَّقَ	[tɪsfi:ʔ]/[safɪʔ] صفق	[masfu:ʔ] مصفوق
3. [tarʔa] ‘tap’ طرفة	[tarʔa:t] طرفات	[tarraʔ] طَرَّقَ	[tarɪʔ] طرق	[matru:ʔ] مطروق
4. [sandu:ʔ] ‘box’ صندوق	[sana:di:ʔ] صناديق	[sandaʔ] صندوق	*[sandaʔa] صندوقة*	[msandaʔ] مصندوق

¹² Consonants in Arabic have different spelling according to where they are in a word.

5. [rakde] ¹³ ‘a run’	[rakde:t]	[rakkad]	[rakɪd]	[mrakkad]
ركضة	ركضات	ركض	ركض	مرّكض

As can be seen, the emphatic pronunciation has been lost all across the board for the words in ‘7.1’. While ‘1’ can be explained by a prohibition on labialization (see 4.4.2), the retention of the emphatic in spelling is crucial in distinguishing **[sɪfɪr]** ‘zero’ from **[safar]** ‘travel’, which is spelled with the non-emphatic [s]. The causative of these two words, then, would be **[saffar]** ‘to make zero OR to make travel’, with the only way to know which one is meant is through spelling. Words ‘2,3 and 4’ show that emphatics are less stable in the vicinity of the glottal stop (debuccalized [q]). Consider the name of a Lebanese village **[ʔa:na]** ‘Qana’, spelled with a long /a/ internally and finally. If glottal stops could trigger emphasis spread, this would have been the perfect environment to have the /a/ move further back to a low [ɑ] and subsequently have an emphatic pronunciation of the word ***[ʔʕa:nʕɑ]**, which is not the case. Then, if glottal stops are underlying uvulars (Davis, 1995), or have the feature [pharyngeal] (McCarthy, 1994), then they must play a role in the spread of emphasis, or in this case, depharyngealization. If an emphatic consonant sits close to a glottal stop, but is not tautosyllabic with it, that consonant is prone to weak lexicalized depharyngealization. Strong lexicalized depharyngealization, on the other hand, happens when an emphatic [sʕ] is tautosyllabic with one of the gutturals mentioned in McCarthy 1994. Greenberg (1950) and McCarthy (1991) (cited in Davis, 1995) “have observed that Arabic in general has a number of morpheme structure conditions that disfavor roots containing (obstruent) consonants articulated with the same place articulator “. Perhaps this explains why depharyngealization happens in the first place, especially with the glottal stop. If one consonant

¹³ The actual pronunciation of consonant clusters in LA has to be either all voiced ‘[ragde]’ or all voiceless ‘[rakte]’

had to lose the [pharyngeal] feature, it must be the underlying emphatic, and not the glottal stop. With strong lexicalized depaharyngealization, the reflex of [sʕ] is typically a voiced alveolar fricative [z], but the voiceless counterpart [s] is also possible, Table 7.2 shows data that contain this change:

Table 7.2 Strong Lexicalized Depaharyngealization

1. [zaʕtar] ‘thyme’ زَعْتَر	LA spelled with [z], CA with [sʕ] صَعْتَر
2. [bazaʔ] ‘he spat’ بَزَق	LA spelled with [z], CA with [sʕ] بَصَق
3. [zaʔʔaf] ¹⁴ ‘he clapped’ زَقَف	LA spelled with [z], CA with [sʕ] صَقَف
4. [zyi:r] ‘small/little’ زَغِير	LA spelled with [z] ¹⁵ , CA with [sʕ] صَغِير
5. [sɪʔʕa] ‘coldness’ سَقْعَة	LA spelled with [s], CA with [sʕ] صَقْعَة

To further solidify and consolidate the case for strong lexicalized depaharyngealization, consider the fact that LA speakers still spell debuccalized [q] with <q> rather than <ʔ> albeit virtually non-existent. Moreover, the fact that some words have weak lexicalized depaharyngealization suggests that a change in spelling is another factor to be considered.

¹⁴ The glottal stop does not precede the [f] in Classical Arabic, the CA word is [sʕaffaq], so this involves a case of metathesis.

¹⁵ As opposed to all other words in this category, LA spelling of [zyi:r] may retain the original emphatic [sʕ] if written formally.

4.5.2 Active depaharyngealization

The second category of underlying emphatic depaharyngealization is active depaharyngealization. Words that undergo this process behave somewhat differently when declined and conjugated for various categories. While lexicalized depaharyngealization entails the loss of the emphatic pronunciation of the consonants for the whole paradigm, i.e. the emphatic pronunciation completely disappears, active depaharyngealization only occurs in some instances of the paradigm each word belongs to. For example, one might pronounce the singular form of a noun non-emphatically, even though it is spelled emphatically, but retain emphasis in its plural form, or vice versa. This suggests a degree of conscious effort on the part of the speaker. Table 8 displays words which undergo active depaharyngealization within their paradigms:

Table 8

Active Depaharyngealizing	Emphasis Retention
1. [diris] ‘molar tooth’	[Dʳᵃ:sᵃ] ‘molar teeth’
2. [sɪdɪʔ] ‘truth’ [se:diʔ] ‘truthful’	[tʰoSᵃdʲi:ʔ] ‘legalizing’
3. [dayyiʔ] ‘narrow’ [di:ʔa] ‘narrowness’	[mDᵃa:yᵃaʔᵃ] ‘annoyed’
4. [di:ʕa:n] ‘alas, it is lost IDIOMATIC’	[Dᵃa:ʕᵃ] ‘he/it got lost’ [Dᵃa:yɪʕᵃ] ‘lost, PARTICIPLE’

This contrast in distribution shows that speakers can actively and consciously depaharyngealize an underlying emphatic, and recall it when possible. Conversely, [sᵃ] may retain its emphatic pronunciation but go to a voiced pharyngealized alveolar fricative [zᵃ] when it sits next to a voiced sound (see note 11). This is exemplified by the word [ʔᵃaZᵃdᵃanᵃ] ‘on purpose’ as opposed to [ʔᵃa:Sᵃɪdᵃ] ‘intending, PARTICIPLE’. In conclusion, depaharyngealization as a

counteract to emphasis spread or even labialization, works in a similar fashion to its counterpart. More research should be done to shed light on this counter-phenomenon and predict its exact causes and favorable environments.

4.6 Emphasis Spread in English: An Arabic Perspective

Vowels that are typically associated with emphasis spread have the ability to trigger this phenomenon in LA. Namely, the back vowels [ɑ] and [o], even with their non-emphatic counterparts [a] and [u] present, can substitute the latter and subsequently cause emphasis spread. Table 9 shows words in LA which exhibit the effects of emphasis spread without having an underlying emphatic, vis-à-vis Classical Arabic pronunciation.

Table 9

1. [dʕobʕayʕ] ‘Dubai’	CA: [dubay]
2. [ʔawʕwʕasʕ] ‘he shot/fired a shot’	CA: [qawwas] ‘he shot an arrow (archery)’
3. [wasʕsʕo:f] ‘proper name’	CA: [wassu:f]
4. [yʕosʕtʕorʕ] ‘provide cover’	CA: [yastur]

If emphasis can be triggered by vowels, or otherwise spread through rule transfer with the back vowels, then this phenomenon should be available in words borrowed from English into LA or otherwise through code mixing and switching. Rule transfer must be active when English words exhibit vowels close to [ɑ] and [o]. To check whether this is true, informants were asked to pronounce the words in Table 10, which were taken directly from English or underwent lexicalization.

Table 10

1. [bʰa:yʰ] ‘Bye’	Lexicalized
2. [fʰotʰbʰolʰ] ‘soccer’ [fʰatʰabi:l] ‘footballs’	Lexicalized
3. [ʃʰo:rʰtʰ] ‘shorts’ [ʃʰo:rʰtʰa:tʰ] ‘shorts PL’	Lexicalized
4. [mʰa:tʰʃ] ‘match’ [mʰa:tʰʃe:t] ‘matches’	Lexicalized
5. [lʰamʰbʰa] ‘lamp’	Lexicalized
6. [mʰalʰtʰi:] ‘multi-’	Borrowed
7. [lʰonʰdʰonʰ] ‘London’	Borrowed
8. [dʰolʰarʰ] ‘Dollar’	Borrowed/Lexicalized

It seems, then, that vowels too can instigate the process of pharyngealization and emphasis spread. One last piece of evidence concerns the way the English vowels <a> and <i> are pronounced by speakers of LA. [e:y] corresponds to <a> while [a:y] corresponds to <i>. The informants were asked to pronounce the initials ‘**LA**’ meaning Lebanese Arabic and ‘**LI**’ meaning Lebanese Investigation. Everyone pronounced the former as [al ey], while the latter was pronounced by most as [alʰ ayʰ]. This further reinforces the fact that vowels are actively involved in emphatic pronunciation and spread.

A good piece of evidence on the prohibition of the emphatic pronunciation of the velar [k], and the fact that it depharyngealizes its environment can be found in Table 11.

Table 11

1. [mʰa:tʰʃ] ‘match’

2. [ka:tʃ] ‘catch’

Unlike (1) in Table 11, (2) [ka:tʃ] ‘catch’ cannot be pronounced emphatically.

5. Findings and Recommendations

The goal of this research was to describe and detail the environments that allow emphasis spread in Lebanese Arabic, as well as the potential grounds for this process. Conversely, data were tested for environments that foster depharyngealization and its underlying causes. Lastly, data from the English language were analyzed and were found to behave in a similar fashion to the Lebanese Arabic data. The findings of this research can be summarized by the following:

1. The domain of emphasis spread is the whole word. Emphasis spread can cut across syllables and segments, as well as morpheme and affix boundaries.
2. Emphasis spread is not a byproduct of pharyngealized consonants, but a necessary condition for the preservation of the emphatic pronunciation of the underlying pharyngealized consonant.
3. The back vowels [ɑ], [o] and [u] were found in emphatic environments, while the front vowels [a], [i] and [e] were associated with emphasis spread block.
4. The process of emphasis spread was blocked in syllables containing [i:] [e] and [e:].
5. Depharyngealization was possible when the underlying emphatic sits in the onset of a syllable followed by [ɪ].
6. The emphatic consonant most prone to depharyngealization was [sʕ].
7. Labialization prevented depharyngealization.

8. Depharyngealization in some instances was an active process, where underlying emphatics in a word underwent depharyngealization in one or more declensions/conjugations, but retained emphatic pronunciation in others.

9. Lexicalized depharyngealization was another type of de-emphaticization wherein underlying emphatics in words lost their emphatic pronunciation all across their paradigms. Some words did not preserve the emphatic consonants in spelling, typically when the said consonant was tautosyllabic with a guttural sound.

10. Depharyngealization, like pharyngealization, can spread.

11. Velar [k] causes depharyngealization.

12. Speakers of Lebanese Arabic pharyngealize English consonants in environments containing the vowels [a], [a:], [o] and [o:].

Future research should aim to examine the link between labialization and depharyngealization in Lebanese Arabic. It should study the environments where labialization is possible and the consequent effect on depharyngealization and vice versa. The interaction between the velar [k] and pharyngeal consonants in other dialects of Arabic is important to give us a comprehensive understanding of both the pharyngeal consonants and [k]. This should be done by collecting words containing both a pharyngeal consonant and [k] and then analyzing them according to how speakers of a certain dialect pronounce them. Finally, the domain of de-emphasis spread should be examined and described to find out the exact environments where this is licit. This should help us determine whether depharyngealization behaves similarly to emphasis spread in that it can cross syllable and morpheme/affix boundaries.

6. Conclusion

Emphasis spread is a phenomenon found in many dialects of Arabic. Lebanese Arabic is a dialect of Arabic where emphasis spread is a prevalent and prominent process. To uncover the environments where this process operates, native speakers of Lebanese Arabic were asked to pronounce various words containing underlying emphatic consonants in different positions and combinations of vowels and other consonants. The converse of emphasis spread, depharyngealization was also central to this paper. Native speakers of Lebanese Arabic were also presented with data from the English language which was found in the lexicon of Lebanese Arabic and were asked to pronounce them. This helped to show that emphasis spread is not confined to Lebanese Arabic, but can also occur in other languages via rule transfer.

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