

Emphasis Spread in Libyan Arabic

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Abstract: *Libyan Arabic contains a set of emphatic consonants that have a phonological effect on neighbouring segments by pulling them farther back and lower in the mouth, a process referred to as emphasis spread or pharyngealization. The analysis of the data indicates that the domain of emphasis spread in Libyan Arabic can be a syllable or an entire phonological word. Emphasis does not spread across word boundary; however, it can affect morpheme boundaries, thus targeting prefixes and suffixes. The paper concludes that there some opaque phonemes such as /ʔ/, /j/ and the front non-low vowels /i:/, /i/ and /e:/ that can block the spread of emphasis. This follows from that fact that such segments are antagonistic to pharyngealization as they are high and forward in the mouth.*

Keywords: *emphatics, pharyngealization, emphasis spread, opaque phonemes.*

1. INTRODUCTION

Emphasis spread refers to a phonological process through which an underlying emphatic consonant spreads its emphatic feature across adjacent segments (Thomson 2006, Al-Masri & Jongman 2004, Watson 1999, Vijver 1996, Davis 1995). Emphasis is a controversial feature. It is often referred to as pharyngealization, however, not all emphatic consonants are necessarily pharyngealized. Watson (1999) argues that though most emphatics are pharyngealized, there are some emphatic segments that are libialized as the case of /m/ in Yemeni Arabic. Hoberman (1995), on the other hand, points out that emphasis can be realised as pharyngealization, uvularization, or verlarization (see Laufer and Baer, 1988).

The pharyngealized realization of emphasis and its effect on adjacent segments will be the focus of the present study. I present data from Libyan Arabic (LA)¹ addressing three issues: a) the domain of emphasis spread, b) its direction and c) the phonemic capability of blocking emphasis spread. The paper consists of four sections. The first section identifies the emphatic consonants in Arabic with special reference to emphatics in LA. The second describes emphasis spread in Arabic and reviews studies on emphasis spread in some Arabic dialects. The third section proposes an analysis for emphasis spread within an auto-segmental phonology framework. The fourth presents the conclusions.

1.1. Emphatic Consonants in Arabic

Emphatic consonants are a characteristic of Semitic languages including Hebrew, Arabic and modern Arabic dialects. Emphatics are traditionally defined as "... a group of verlarized or pharyngealized interdental and dental consonants" (Finch 1984: 32). Arabic has four emphatic consonants: /t/, /d/, /s/ and /ðʕ/². These consonants have four corresponding plain cognates: /t/, /d/, /s/ and /ð/. In addition to their primary articulation which they share with their plain counterparts (dental/alveolar contact), emphatic/pharyngealized consonants have a secondary articulation involving "... backing of the tongue towards the pharyngeal wall" (Yeou 2001: 1).

¹The data in the study were collected from native speakers of different varieties of western Libyan Arabic referred to as LA.

² I use a subscript dot to refer to emphatics. For segments affected by emphasis, these will be underlined.

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Modern Arabic dialects contain a set of pharyngealized coronal consonants known as emphatics. Phonologists distinguish between two sets of emphatic consonants. The first is primary emphatics and it includes /t/, /s/, /d/ and /ðʕ/. The second is referred to as secondary emphatics and includes /r/, /l/, /m/ and /b/ (Blanc 1953; Mitchell 1956; Harrell 1957; Broselow 1976; Ghazeli 1977). The main difference between the two is that primary emphatics contrast with a set of non-emphatic phonemes (i.e. /t/, /d/, /s/ and /ð/), whereas secondary emphatics do not (Younes 1994: 216-217).

Libyan Arabic has three main primary emphatic consonants. They are /t/, /s/ and /d/. These emphatic consonants occur in all positions and contrast minimally with their plain/non-emphatic counterparts /t/, /s/ and /d/, as evidenced in the data below:

(1)

- | | | | |
|--------------------|----------------|---------------|----------------|
| a) /ʃɑ:m/ [ʃɑ:m] | ‘he fasted’ | /sæm/ [sæm] | ‘poisonous’ |
| b) /t̤i:n/ [t̤i:n] | ‘mud’ | /ti:n/ [ti:n] | ‘fig’ |
| c) /d̤ɑ:l/ [d̤ɑ:l] | ‘going astray’ | /dæl/ [dæl] | ‘the letter d’ |

It is worth noting that the emphatic / ðʕ / does not exist in almost all varieties of LA. This may be due to the fact that /ð/ is always replaced by /d/ in the speech of Libyans. Likewise, the emphatic counterpart of /ð/, i.e. / ðʕ / undergoes the same process and is replaced by the emphatic form of /d/, i.e. /d̤/. With regard to secondary emphatics, there are five secondary emphatic consonants in the language, which are /l/, /r/, /b/, /m/, and /z/. The occurrence of secondary emphatics is limited as they occur normally and exclusively with low vowels, unlike primary emphatics that can be found in all vocalic environments (Younes 1994: 217). Furthermore, secondary emphatics are found in a restricted number of words most of which are borrowings from foreign languages. The data below illustrate secondary emphatics in LA:

(2)

- | | | |
|----------------|-------------|--------------|
| a) /la:m̤ba/ | [la:m̤ba] | ‘lamp’ |
| b) /ba:n̤a:ni/ | [ba:n̤a:ni] | ‘bananas’ |
| c) /za:r̤/ | [za:r̤] | ‘he visited’ |
| d) ba:ba: | [ba:ba:] | ‘father’ |
| e) ma:ma: | [ma:ma:] | ‘mother’ |

2. EMPHASIS SPREAD IN ARABIC

Emphasis spread involves spreading the feature [emphatic] from a coronal consonant to colour all the segments occurring within its span (Haddad 1984: 256). This process takes place in modern Arabic dialects; however, the pattern of emphasis spread differs from dialect to another. For instance, emphasis spread in some dialects such as the Cairene dialect spreads throughout the entire word, whereas in Abha dialect of Saudi Arabia it “... rarely spreads beyond an adjacent vowel” (Davis 1995: 465). In respect to the domain of emphasis spread, some linguists have argued that emphasis spread is a syllabic phenomenon (Lehn 1963; Harrell 1967; Obrecht 1968). Others, however, argue that the domain of emphasis is the word (Davis 1991). Furthermore, some other linguists support the idea that certain phonemes are capable of blocking and/or restricting ES (Maamouri 1967; Ghazeli 1977; Card 1883; Herzalah 1990). Finally, linguists in general tend to agree that word boundaries in Arabic block ES (Younes 1993: 120).

More interestingly, it is widely argued that Arabic dialects manifest asymmetries in terms of rightward and leftward spread of emphasis. Herzallah (1990) points out that in northern Palestinian Arabic, emphasis spreads leftward from an underlying emphatic to the beginning of the word, whereas rightward emphasis spread is normally restricted to a following low vowel (Davis 1995: 466). Herzallah also adds that some phonemes tend to be opaque to rightward emphasis spread but not to leftward spread (ibid.).

Davis (1991) conducted a study on the spread of emphasis in two Arabic dialects, namely Cairene and Palestinian Arabic. He found out that in terms of regressive spread of emphasis, the two

dialects undergo the same process in the sense that any phoneme preceding an underlying emphatic consonant is pronounced as a pharyngealized segment. The domain of spread is also similar, which is the entire phonological word. However, the two dialects differ in the progressive spreading of emphasis. In Palestinian Arabic, progressive spread is subject to the feature co-occurrence restriction but this is not the case in Cairene dialect (Davis 1991: 16). Furthermore, Davis (1995) studied emphasis spread in two Palestinian Arabic dialects, northern and southern. He concluded that Palestinian Arabic exhibits both rightward and leftward spread of emphasis. His results show that leftward spread is unbounded within the phonological word whereas rightward spread is blocked by [+high, -back] vowels.

2.1. Emphasis Spread in Libyan Arabic

Libyan Arabic displays two types of spread: regressive and progressive. Both are discussed with data illustrating the influence of emphatics on neighbouring segments.

2.1.1. Regressive Spread of Emphasis

Regressive spread of emphasis refers to the spreading of the feature (+emphatic) onto adjacent segments starting from the emphatic and spreading leftwards to the beginning of the word. The data below illustrate regressive spread of emphasis in lexical items with and without prefixes and suffixes.

(3)

a) /ʕa:ba:ʔa/	[ʕa:ba:ʔa]	idiocy
b) /ba:ʕ/	[ba:ʕ]	‘bus’
c) /naʔaʔa:t/	[naʔaʔa:t]	‘activities’
d) /frʌʔ/	[frʌʔ]	‘he imposed’
e) /haʔ/	[haʔ]	‘luck’
f) /bi+ʕa:li /	[biʕa:li]	‘he will pray’
g) /bi+ʔɔb /	[biʔɔb]	‘he will carry/lift’
h) /mæ+ʕa:d+hæ:+/	[maʕa:dha]	‘he didn’t hunt it’

The data in (3) indicate that all phonemes before the emphatic consonant surface as pharyngealized segments. The future prefixes ‘bi-’ and negation prefix ‘ma-’ show dissimilar behaviour. Emphasis does not spread beyond /i/ as in the lexical items with the future prefix ‘bi-’. However, the underlying /æ/ in the negative pro-clitic ‘ma-’ is affected by emphasis and thus shows up as /a/. The data also show that the domain of spread can be the syllable or an entire phonological word. Thus, Libyan Arabic seems to pattern similarly with Cairene Arabic and Palestinian Arabic in terms of the domain of emphasis spread, which is the phonological word. This is in contrast with the claims of Lehn (1963), Obrecht (1968), Ali and Daniloff (1972) and Sayed (1981) who “... have argued that emphasis spread is a syllabic phenomenon” (Younes 1993: 120).

2.1.2. Progressive Spread of Emphasis

Progressive or rightward spread of emphasis starts normally from the emphatic consonant and extends to the end of the word affecting the segments following the emphatic, as illustrated in the data below.

(4)

a) /ʔa:sa/	[ʔa:ʕa]	‘glass’
b) /ʔa:za/	[ʔa:ʕa]	‘fresh’
c) /ʕɔ:t+ak/	[ʕɔ:ʔak]	‘your voice’
d) /ʕa:d+hæ:/	[ʕa:ʔha]	‘he hunted it’

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e) /ʕaʔla:n/	[ʕaʔla:n]	‘not working’
f) /ɖa:ba:b/	[ɖa:ba:b]	‘fug’
g) /ʔrʌt+hæ/	[ʔrʌtha]	‘I dismissed her’
h) /mɔʃtaʔi:l/	[mɔʃʔaʔi:l]	‘rectangle’
i) /mæ+ʃa:d+hæ+ʃ/	[masa:ɖhaʃ]	‘he didn’t hunt/catch it’

The data in (4) show that emphasis spreads rightwards from the emphatic consonant affecting all adjacent segments. A piece of evidence for this process lies in the change of the plain counterparts into emphatics when they occur adjacent to an emphatic. For instance, the verb /ʃa:d/ ‘hunted’ is pronounced as [ʃa:ɖ]. The /d/ surfaces an emphatic /d/ due to the presence of the underlying emphatic /s/. However, examining other forms of the same verb, /d/ is realised as /d/. In forms such as [ʃi:d+hæ] ‘hunt it’ (2nd msc. sing. ‘you’) and msc. sing. ‘you’) and [ʃi:d+u+hæ] ‘hunt it (2nd ‘hunt it (2nd msc. pl. ‘you’), the /d/ surfaces as plain /d/.

Furthermore, the data suggest that emphasis spreads not only to cover the stem but also to colour the suffixes attached. This can be seen in (4 c, d, g). In (4d) for instance, when the feminine morpheme ‘-ha’ is added to the verb, emphasis spreads into the suffix and the vowel surfaces further back than normal. Thus, morpheme boundaries do not seem to block emphasis spread. However, looking at more data, the matter does not seem as simple as that. In fact, there are some phonemes in Libyan Arabic that can block rightward spread of emphasis. This is illustrated in the data below.

(5)

a)	/ʃjæm/	[ʃjæm]	‘fasting’
b)	/ʃajjæd/	[ʃajjæd]	‘hunter’
c)	/naʃi:hə/	[naʃi:hə]	‘advice’
d)	/ʃe:d+hæ/	[ʃe:dhæ]	‘her hunting’
e)	/ʃe:hə/	[ʃe:hə]	‘a cry’
f)	/ʕaʔʔæn/	[ʕaʔʔæn]	‘thirsty’
g)	/ʔwi:l/	[ʔwi:l]	‘tall’
h)	/ʔa:libæt/	[ʔa:libæt]	‘students fem.’
i)	/ʔalaba:t/	[ʔalaba:t]	‘demands’
j)	/ʃi:næʕæt/	[ʃi:næʕæt]	‘industries’
l)	/bi+ʃali+hæ/	[biʃalihæ]	‘he will perform it (the prayer)’
	/bi-ʔɔb /	[biʔɔb]	‘he will carry/lift’

The data in (5) indicate that there are certain phonemes that can restrict or block the spread of emphasis. These phonemes are /i:/, /e:/, /ʃ/ and /j/. These phonemes are capable of blocking rightward spread of emphasis. Accordingly, emphasis cannot spread forward when the emphatic consonant is immediately followed by the consonants /ʃ/ or /j/, or when non-low vowels such as /i:/, /i/, /e:/ intervene between the emphatic and adjacent segments. The data in (5 a, b, d, f, h and l) manifest the blocking of emphasis by these phonemes. For instance, the /ʃ/ and /j/ in [ʕaʔʔæn] and [sajjæd] respectively prevent the emphasis from spreading rightwards. Likewise, non-low front vowels such as /i:/ and /e:/ in [ʔa:li:bæt] and [ʃe:dhæ] prevent rightward spread of emphasis.

Comparing (5h and 5i), one can see that emphasis spread colours all segments in (5i), but it does not do so in (5h) due to the presence of underlyingly dissimilar vowels in both words. In (5h), the vowel /i:/ in [ʔa:li:bæt] prevents the emphatic feature of /t/ to be transferred onto the segments

following /i:/, resulting in producing non-emphasized segments. However, in (5i) [ʔalaba:ʔ], emphasis spreads throughout the entire word due to absence of blocking barriers, affecting all segments including the final plain /t/.

It is worth noting that in regressive spread, the phonemes /j/ does not block emphasis spread. For example, in comparing (5f) [ʕaʔʕæn] and (3c) [naʔaʔa:ʔ] we can notice a symmetry in the phonological behaviour of /j/ in blocking and permitting the spread of emphasis in both regressive and progressive spread. /j/ blocks emphasis to spread from the emphatic /t/ in (5f) to the following segments only when it occurs immediately after the emphatic, but it does not block emphasis spread in other environments as in (3c). Thus, when /j/ is not preceded immediately by an emphatic, it has no role in blocking emphasis spread, as in (3c).

3. PHONOLOGICAL ANALYSIS OF EMPHASIS SPREAD

In this study I consider emphasis as a property of the emphatics which spread emphasis onto neighbouring segments. Using auto-segmental phonology, I propose an analysis for emphasis spread in Libyan Arabic. Following Card (1983: 32), an adequate analysis of emphasis spread must meet at least three main criteria:

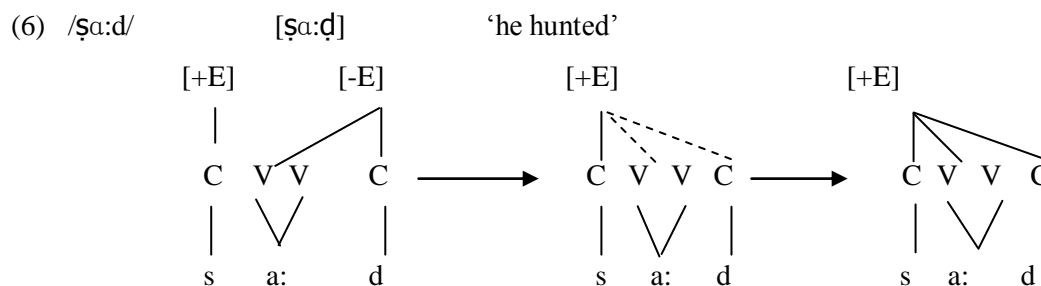
- (a) representing emphasis as intrinsic property of one segment in the word
- (b) illustrating emphasis spread and why it is blocked in some environments
- (c) offering a means for representing the emphatics and the emphasized segments

3.1. Emphasis and Distinctive Features

Phonologists proposed different features to represent the feature [+emphatic]. Chomsky and Halle (1968: 306) consider Arabic emphatics as ‘pharyngealized consonants’ having the feature complex [-high, +low, +back]. Emphatics have also been considered as verlarized sounds having the feature [-high, -low, +back] (Brame 1970). Broselow (1979) uses the feature (+constricted pharynx) to distinguish the primary emphatics from non-emphatic consonants. Finally, in recent phonological accounts, Davis (1995) and Watson (1999, 2002) use the feature [RTR] (retracted tongue root) to distinguish emphatic from non-emphatic segments. In this paper, emphatic segments will be said to have the feature [+emphatic].

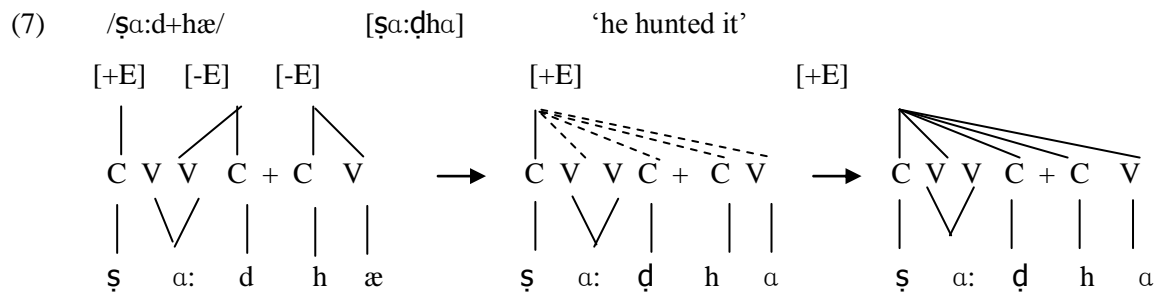
3.2. Analysis of Emphasis Spread in Libyan Arabic

Emphasis spread can be explained in auto-segmental terms as a rule of feature spreading. Thus, we can assume that the segments adjacent to the emphatics are not intrinsically associated with the feature [+emphatic] until this feature spreads over them and makes them surface as pharyngealized segments. The segments which are affected by the emphatics “... are conditioned allophones and display the feature [+emphatic]” (Elgadi 1986: 23). In other words, emphatic consonants are specified for the feature [+emphatic]¹ in the lexicon, whereas the segments affected by the emphatics have the feature [+emphatic] as a phonetic feature added to their underlying representation. In what follows, I provide analyses of some data used in this study using the autosegmental phonology framework.

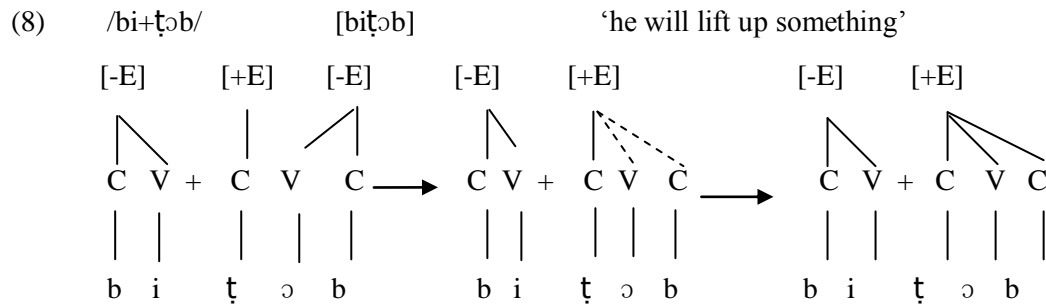


In (6), the feature [+E] spreads from the emphatic consonant /s/ rightwards onto /a/ and /d/ turning them into pharyngealized segments.

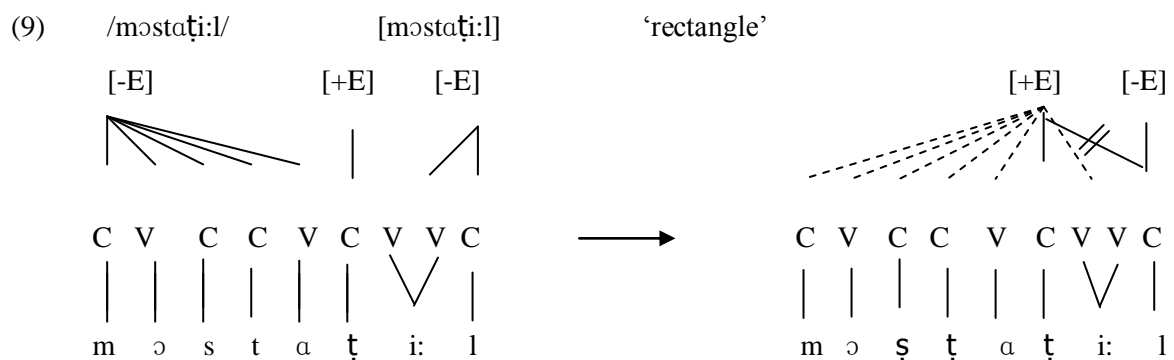
¹ Henceforth, I will use [+E] to refer to the feature [+emphatic] and [-E] to refer to [-emphatic].



The data in (7) can be explained in the same way as (6) taking into account that in addition to the stem, emphasis spreads beyond morpheme boundary and colours the suffix ‘-ha’.

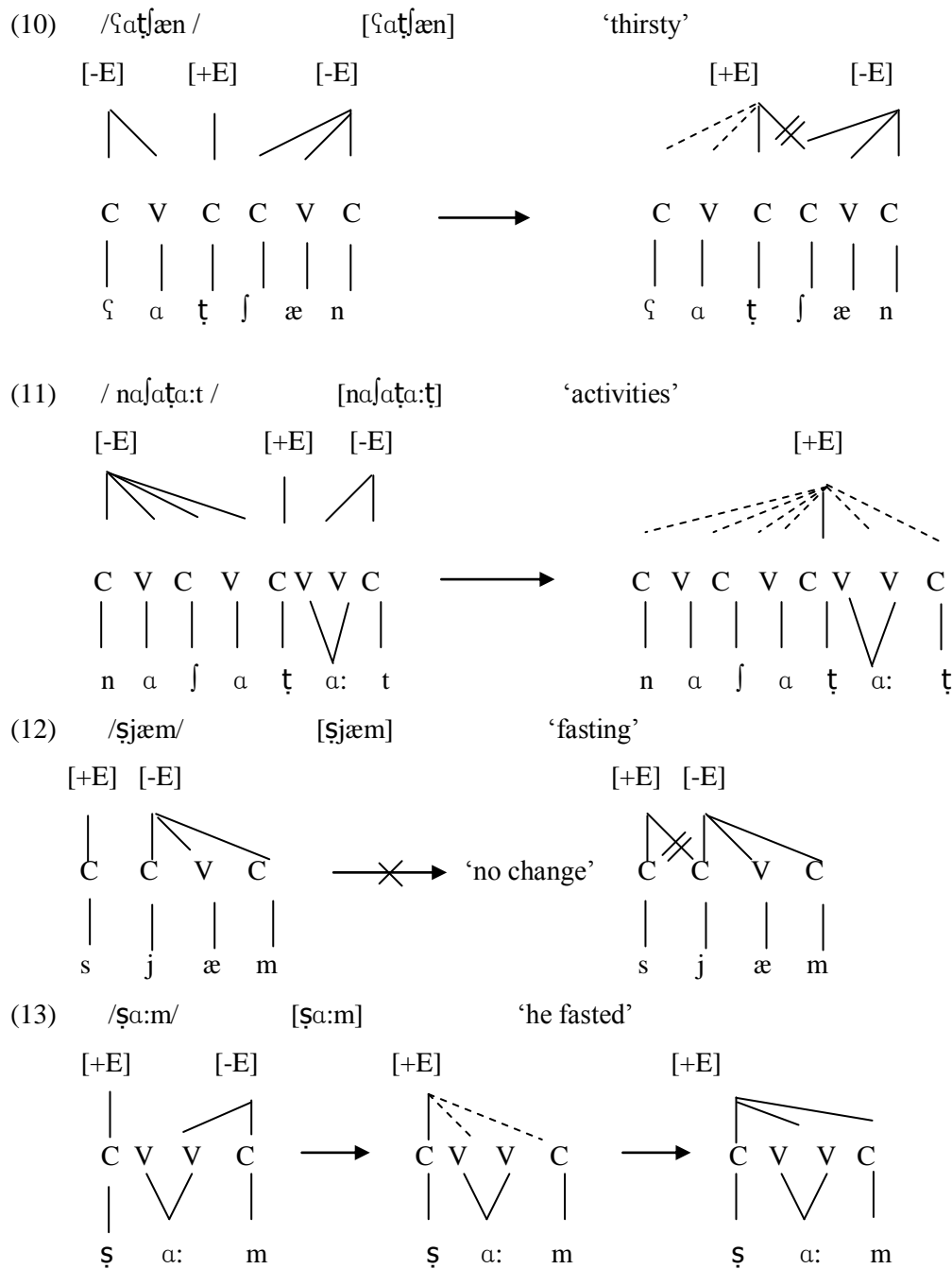


The diagram (8) demonstrates that emphasis spreads from the emphatic /t/ to the following segments but it does not spread leftwards to colour the preceding segments, i.e. the future tense prefix. This is mainly because the high front vowel /i/ blocks emphasis to spread leftwards.



The word /mɔʃtaʦi:l/ in (9) contains only one underlying emphatic consonant which is /t/. However, in the surface form [mɔʃtaʦi:l] all the adjacent segments acquire emphasis because of their proximity to /t/ and become emphasised except /l/ which remain non-emphasised due to the presence of the intervening /i:/ between /t/ and /l/. Emphasis spreads leftwards and it affects all the segments preceding it.

The interaction of the high front vowels /i/ and /i:/ in (8) and (9) with emphasis spread provides evidence for the analysis which assumes emphasis as a property of the emphatic consonant and not the syllable or the word (Card 1983: 31). If emphasis were an intrinsic property of the syllable or the entire word, the phonetic output of /ʦi:n/, for example, would be *[ʦi:n], with all segments emphasized. Thus, assuming emphasis as a property of the emphatic /t/ in such an example would provide us with the correct output /ʦi:n/. The emphatic /t/ spreads emphasis rightwards to colour only /i:/ which in return blocks emphasis spread, resulting in /n/ being unemphasised. Ghazeli (1977: 90-109) discusses the nature and the role of the high front vowels /i:/ and /i/ in counteracting the spread of emphasis, i.e. backing co-articulation. He argues that “... since these vowels include articulatory movements which are contradictory to emphasis articulation, i.e., forward movement of the tongue, they weaken the spread of emphasis to other segments” (Younes 1993: 131).



As mentioned earlier, there are some phonemes that are capable of blocking emphasis. These are the consonants /ʃ/ and /j/ and the front non-low vowels such as /i:/, /i/ and /e:/. We can notice that the consonant /ʃ/ blocks rightward spread of emphasis when it occurs immediately after an emphatic. However, /ʃ/ loses its blocking capability when it occurs elsewhere, i.e. not preceded immediately by an emphatic, as in (11).

Likewise, /j/ blocks the emphatic feature of /s/ in (12) from spreading to the following segments. In (13), the emphatic feature of /s/ colours the entire word due to the absence of any blocking segment. Like /i:/ and /i/, Card (1983: 27) characterizes /j/ and /ʃ/ as palatal segments associated with feature [-F2 Drop], which is the characteristic of non-emphatic segments. Davis (1993: 153-54) states that /ʃ/ and /j/ block the progressive spread of emphasis due to the fact that these phonemes are associated with feature [+high] which is incompatible with the spreading feature, i.e. [+emphatic]. The latter involves "... the retraction of the back of the tongue" (ibid 154).

4. CONCLUSION

Based on the analysis of the data under study, the paper concludes that the domain of emphasis spread in Libyan Arabic can be the syllable or an entire phonological word. Emphasis does not

spread across word boundary; however, it can affect morpheme boundaries and consequently may colour prefixes and suffixes. The paper also reveals that there are certain phonemes in the language that are capable of blocking emphasis spread. These opaque phonemes are /j/, /j/ and the front non-low vowels /i:/, /i/ and /e:/. These phonemes are antagonistic to emphasis spread because of their height and frontness in the mouth, which is contradictory to the articulation of emphatics, thus weakening the spread of emphasis to neighbouring segments.

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