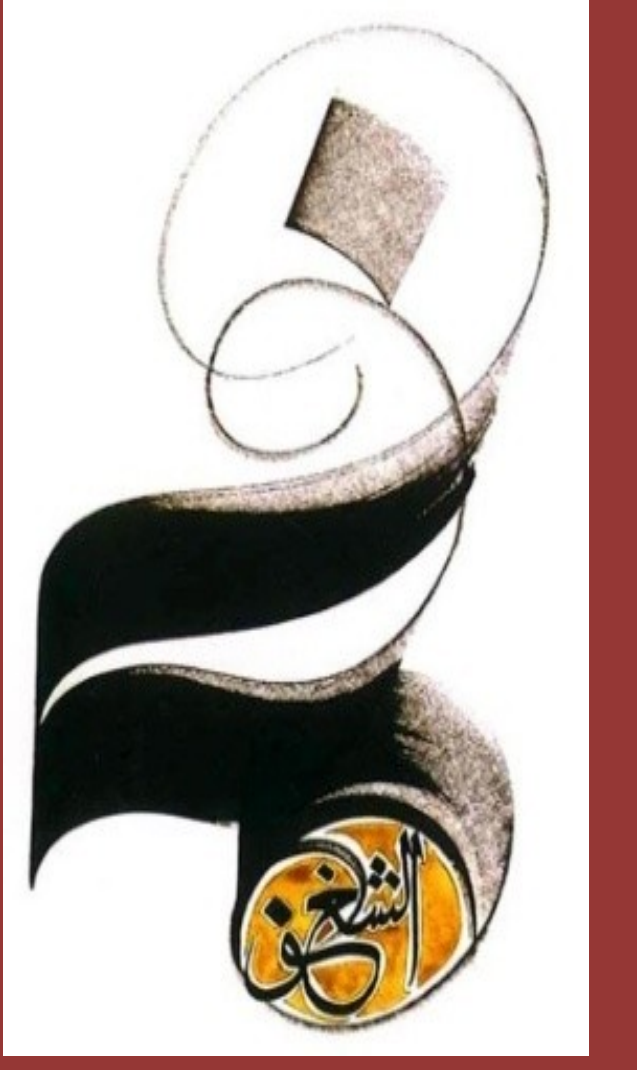


Pharyngeal Harmony in Moroccan Arabic

Directionality, Locality and Opacity

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ABSTRACT

This poster is about the phonological representation of pharyngeals and some problematic issues related to emphasis spread (ES) - i.e. pharyngeal harmony in Moroccan Arabic (MA).

I first raise the question of ES within the framework of Government Phonology (GP) (Kaye et al. 1985, Lowenstamm 1996, Scheer 2004) which claims that government, which underlies here ES, should be constrained by some principles. Then I tackle the question of the blocking of ES. As was pointed out by Gouma (2008), pharyngealization is generally blocked by segments having the frontness element I. However, there are some examples in which this is not the case in MA, I explain this kind of opacity. A last issue concerns the phonological status of vowels regarding pharyngealization. It is generally claimed that the pharyngeal class is made of consonants only. If this is true, why is it that vowels such as [a], [e] and [o], which have in their structure the element A, and occur in the pharyngeal environments, cannot be seen as underlying emphasis-bearing segments as well?

DATA and RESULTS

Government Phonology *Directionality and Locality*

GP claims that government which is represented here by the process of ES, should be encircled by certain principles:

1- *The principle of directionality*: It states that government, and therefore ES, should follow one and only one direction.

2- *The principle of locality*: It states that the governors (the pharyngeal consonants) should be adjacent to the governed segments (pharyngealized consonants).

3- The governed segment cannot govern another one.

Problem : In MA we have some examples in which pharyngealisation spreads both leftward and rightward at the same time. Consider the following examples:

- (1) - /stʕəl/ 'a seal'
 [sʕ tʕ a lʕ]
- (2) - /tʃatʕi:r/ 'bargaining'
 [tʃʕatʕe:rʕ]
- (3) - /madʕlu:m/ 'being oppressed'
 [mʕadʕlʕo:mʕ]

In these examples, the pharyngeal consonants are /tʕ/ and /dʕ/. These consonants spread their pharyngeal feature to both segments on the right and on the left. These examples, among many others in MA, show that the principle of locality is fitted. However the principle of directionality is not. On the other hand, the same examples show us that principles 2 and 3 cannot be both satisfied. Assuming principle 2 (locality), the pharyngealized vowels [a] in (1) and [e:] in (2), and the pharyngealized consonant [lʕ] in (3) should be the cause of pharyngealisation of the following segments. Now, since [a], [e] and [lʕ] are already governed by the preceding phoneme, this violates principle 3. Assuming principle 3, the consonant [dʕ] in (3) governs the following [lʕ] but the latter cannot govern the following vowel. Thus, since this vowel is pharyngealized, it is necessarily governed by the adjacent [dʕ].

Opacity in Emphasis Spread Blocking

According to most of the studies, ES is, generally, blocked by segments having the frontness element I as a head. This is true in MA data also. However, there are some cases in which it is not. Consider the following examples:

- (4) - /ʃitʕa:n/ 'satan'
 [ʃʕ e tʕ a:n]
- (5) - /tʃatʕi:r/ 'bargaining'
 [tʃʕatʕe:rʕ]
- (6) - /bi:dʕa/ 'an egg or white'
 [bʕe:dʕa]

In these examples, the high vowel /i/, which is supposed to block ES, does not do so. Many examples like these are found in MA. I argue that they can be seen as cases of classic phonological opacity. In (4), (5), and (6), [e] derives from an underlying diphthong /ai/ in which the element I is *not* a head.

- (4') - /ʃaitʕa:n/ [ʃʕ e tʕ a:n] 'satan'
- (5') - /muʃa:tʕarah / [tʃʕatʕe:rʕ] 'bargaining'
- (6') - /baidʕah/ [bʕe:dʕa] 'an egg'

Assuming that derivational model where ES occurs before monophthongation, these underlying forms are no longer problematic. In MA, ES is, thus an opaque rule.

Future Research

In this part, I make the hypothesis that some vowels can also be viewed as emphasis bearing segments, as far as the pharyngeal class is concerned (Gouma 2009).

Heath (1989: 49) observed that in MA when the /r/ is near a back vowel it is realized as pharyngealized but when it is near a high front vowel it is realized as non pharyngealized:

- (7) [mu:di:r] 'director' [mu:ldʕdʕa:rʕ] 'house master'
 [kbi:r] 'high' [kbʕa:rʕ] 'high, pl'
 [wazi:r] 'minister' [wizʕarʕa] 'ministry'

Now, these examples run counter to the claim that [pharyngeal] is a distinctive feature of the rhotic in Arabic, as is shown in (8).

- (8) a - /bra/ [bræ] 'needle'
 b- /ʒra/ [ʒræ] 'he ran'
- But:
 a' - /brʕa/ [brʕa] 'he is cured'
 b' - /ʒrʕa/ [ʒrʕa] 'it happened'

We support our hypothesis that vowels in Arabic may be seen as emphasis bearing segments, by another example from CA (Gouma 2009). Let's take the name of God in Arabic, which is 'Allah'. This word is said to be the only one in which the /ʕ/ is pharyngeal. However, this turns out to be false if we take into account the vocalic environment.

In the word 'Allah' the first two letters 'al-' correspond to the definite article [ʔal] in CA, which always starts with a glottal stop. When this article is preceded by a morpheme or a word finishing by a high front vowel [i], only the final [l] is kept. And in this case, the [ʕ] is no more pharyngealized:

- (9) - /ʔal-la:h/ [ʔalʕ-lʕa:h] 'Allah'
 - /li-ʔal-la:h/ [li-l-læh] 'for Allah'

But when the same word is preceded this time by another morpheme ending in a low vowel [a] or a high back one [u], the /l/ becomes again pharyngealized [ʕ]:

- (10) - /huwa-ʔal-la:h/ [huwa-lʕ-lʕa:h] 'It is him Allah'
 - /inna-hu-ʔal-la:h/ [inna-hu-lʕ-lʕa:h] 'he is Allah'

CONCLUSIONS

Three important conclusions may be drawn from this study: first, GP is not able, with the current form of its principles, to explain the process of ES. The second conclusion is that apparent exceptions to ES may be due to phonological opacity. Third, at least in MA and CA, some vowels, having the element A in their structure as the head, may be viewed as emphasis bearing segments.

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