Substitution in Natural Phonological Classes:
Ancient Arabic Dialects as a Model

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Abstract

This article deals with the phenomenon of substitution in natural phonological categories, focusing on ancient Arabic dialects as a model. Arabic dialects show phonological, and sometimes morphological, differences, although the ancients considered Arabic dialects to be "different" but linguistically correct. Despite this, a distinction was made between eloquent languages such as Quraysh and the vilified languages as described by al-Suyuti and Ibn Faris, with Quraysh being said to be the most eloquent. The article defends a linguistic view that all ancient Arabic tribes were equally eloquent. The theory of "feature engineering" will be used to explain the phonological changes that occurred in Arabic dialects.

Keywords: Substitution, Natural Phonological Classes, Ancient Arabic Dialects, Features Geometry

Introduction

This article discusses the phenomenon of substitution in natural phnological classes, taking the ancient Arabic dialects as a model. It is well known that Arab dialects had phonemic and sometimes morphological differences. Although the ancients considered the Arabic dialects as 'different' (Al-ssoyouti, 1897, p.24) and considered 'the speaker of the Arabic language to be correct and not mistaken'(Al-ssoyouti, ibid., p.78), we find that oftentimes a distinction is made between eloquent languages such as the language of Quraysh and reprehensible languages as described by Al-Suyuti in Al-Mizhar and Ibn Faris ; the latter argues that 'Quraysh is the most articulate of the Arabs ... Do you not find in their speech the 'ʕanʕanah' of Tamim, nor the 'ajrafiya' of Qays ...'. (Cf. Al-ssoyouti, 1998, pp. 210-211) This is not justified either on the phonetic or on the phonological level.

We will be defending a linguistic perception that all ancient Arab tribes were equally fluent. We will use the theory of Feature Geometry to explain the phonetic alternations that occurred in Arabic dialects.

The article is organised as follows : In the first section, we will present some definitions of the phenomenon of substitution by ancient and modern scholars and compare them in order to draw conclusions. We will also differentiate between the phenomenon of substitution in morphological and phonological categories. We will deal with the phenomenon of substitution in natural phonetic classes ; on the other hand, the second section will treat the phenomenon of substitution in natural phonological classes.

1- Preliminaries

1.1 - Substitution: definition

Al-Asterbadi (1978) claims that subtitution is '' The replacement of one letter in place of another.'' (Pp.193-197). Ibn Faares argues that, ''One of the Sunnahs of the Arabs is the substitution of letters and putting some of them in the place of others.'' (P. 209). According to Abo-Al-tayeb (1960), substitution is the act of '' replacing a letter with a letter while keeping the other letters of the word'' (p.9). The definition of substitution is also given in Al-Mizhar : ''What is meant by substitution is not that the Arabs deliberately substitute one letter for another, but rather that there are different languages for similar meanings, where two words converge in two languages for the same meaning until they differ only in one letter.''(Al-ssoyouti, 1998, p.356).

Modern linguists have defined substitution as ''the replacement of a letter for another, while maintaining the rest of the letters of the word, so the two words or images may share two or more letters, and one of them is replaced by another letter where the two letters share the same place of articulation or both a place of articulation and a phonetic feature, where the condition of convergence in articulation between them is required.'' (Abo-Al-tayeb, 1960, p.9).

From these definitions it is clear that ancient and modern linguists stipulated in the substitution the restriction of place, proportionality in meaning and convergence in the place of articulation and a phonetic feature.

In this regard, some researchers believe that scholars in the past were divided into two groups :1) Linguists, those who were interested in compiling dictionaries and collecting words, who limited the phenomenon of substitution to the type of words cited by Al-Zajaji, Ibn Al-Sakit and others, i.e. a word has two forms that are used, or at least permissible in use. 2) Grammarians, who expanded the issue of substitution to include al-I'lal, so we see them count the following words as commutative : *samaʔ - qaaʔil – siyyaam - mizaan - sayyid –xaafa –-mawqin- sabr- istabara,* etc. (cf. Anis, 1978, p.78). Thus, we see that grammarians have confused two different phenomena.

1.2- Categories of substitution

Linguists have distinguished between two types of substitution.

1) **Morphological or standard substitution** : It is the standard substitution used by all Arabs, and the total number of its letters is eight. These they combine in the phrase " طويت دائما " ، 'always folded' (Ibn Maalik, 1967, p.300) ; this substitution is the most famous in the *Ifta3ala* formula such as : Istabara - Izdahara - iddakara (originally /id-dakara /).

In morphological substitution, you do not use the substituting word, but you use the substituted word, and if you used the substituting word, it would be wrong. In other words, the branch is used, not the root.

2) **Linguistic substitution** : This is the one we are concerned with in this article ; it is not standardized in Arabic speech, but it varies according to different tribes ; one tribe says : *madaħa* and another says : *madaha* (praise).

Ibn Faares claims that : ''One of the Sunnahs of the Arabs is the substitution of letters for each other. For example, the Arabs say *madaħahu* (he praised him) and *madahahu* (he gave him praise), and *alxaylu rifalu* and *rifanu* (a swaggering horse). The linguist Abo Al-tayeb claims : ''The meaning of substitution is not that the Arabs deliberately substitute one letter for another, but rather that there are different languages for agreed meanings, and the two words converge in two languages for the same meaning until they differ only in one letter.'' The proof for this is that one tribe does not speak a word with one letter and another without it, nor with *ṣād* once, and with a *sīn* another time, as well as the substitution of the definite article *laam* for the definite article *miman*, and the glottal stop for the pharyngeal ʕ; A case in point is the substitution of ʔann for ʕann; the Arabs do not share any of this, but that these are different peoples.'(Al-ssoyouti, 1998, pp. 460-461).

From Abo Al-tayeb's words we conclude that the phenomenon of substitution does not mean that it is a deliberate, voluntary process carried out by the speaker of the language

whenever they want, but rather it is a process related to history and usage. The speaker finds themselves facing multiple words, and the similarity between them indicates that one of them has developed over the years, and that the rapprochement between the two sounds in the place of articulation, or in the place of articulation and the phonetic feature together, is what called for one to be replaced by the other." Likewise, a speaker within a single linguistic clan cannot use two different forms such as : /dalaʕ/ - dalaħ / sardin - sardil /.

According to linguists, substitution is "the replacement of one phoneme with another in the same phonetic environment, for it is required that the substituted and the substituting sounds be related phonetically, and that this does not lead to a semantic change, as the ancients say : *saqr, ṣaqr, zaqr, matta, madda, maṭṭa, makka, bakka, litham and lifam*, which is what is called in their terminology, " the increased derivation." (Cf. Al-waadi, 2020, p. 54).

2- Substitution in natural phonetic classes

Now we move to discussing substitution in natural phonetic classes ; before that, we need to point out that a natural phonetic class consists of a group of sounds that have phonetic similarity and that share a set of pronunciation characteristics and phonetic rules. These sounds can alternate at the root level and may not be combined ; there are also restrictions and rules that operate within each natural phonetic class. Sibawayh had classified the sounds of the Arabic language into 16 places of articulation.

However, with the theory of Feature Geometry, which is characterised, according to Al-waadi (2020, pp.267-9), by the adoption of a tree of features that are arranged hierarchically under a number of clusters, by the description of voiceless and voiced sounds with the same features ; they are also characterised by the fact that the segments of a single cluster share the same phonetic characteristics and are subject to the same phonological rules, thus forming a natural class. This results in reducing the number of the places of articulation of phonemes (segments) by grouping them around the active articulators only, namely the lips, the tip of the tongue, the back of the tongue, the pharynx and the larynx. The new grouping of Arabic phonemes as mentioned in McCarthy (1988, 1994) is as follows:

3) Natural sound classes

    a- labials: , b, m, f
    b- Sonorant alveolars : l, r, n
    c- Ostruent alveolars : t, Ɵ, ð, d, s, z, D, t̲, s̲, š
    d- Glides : w, j
    e- Dorsals : k, g, q
    f- Gutturals : ʔ, h, ʕ, ħ, ɣ, x

2.1- Labials

2.1.1 Alternation between /b/ and /m/

People say Makkah and Bakkah ; the Almighty said : "The first house that was established for people was the one in Bakkah, blessed and a guide for the world." The Almighty said : "He is the one who stopped their hands from you and your hands from them in the belly of Makkah after you prevailed over them, and Allah is the one who sees what you do." People also say : From the clouds are the daughters of Makhr and the daughters of Bakhr ;

According to Ibn Jinni : *basmuk* is used to mean *masmuk* ; so the /b/ is a substitute for the /m/, and a *salhab* man instead of *salham*, i.e. tall. As can be seen in (4a) below. The /b/ is subsituted for /m/ : *makkah / bakka, masmuk / basmuk, bakhr's daughters / makhr's daughters*. In the Moroccan dialect, we find an extension of this alternation between /m / and /b/, such as : /yatabaxtar/ vs. /yatamaxtar/ (strut), /naʒib/ vs. /naʒim/, /raʒab/ vs. /raʒam/, (see 4b). Phonetically, this alternation between /b/ and /m/ is justified by the fact that these two sounds share the same articulator, the lips, and alternate in the speech of articulate Arabic speakers. Phonetically, the phonemes that share the feature [+nasal] and [-nasal] alternate in Arabic, but not in one of its roots. This explains the non-occurrence of roots such as *mb/*bm, as shown in the example in 4b.

4):
a-   /makka/ vs. /bakka/, /masmuk/ vs. /basmuk/, /baxr/ vs. /maxr/
b-   /jatabaxtar/ vs. /jatamaxtar/ , /naʒib/ vs. /naʒim/
c-   *mb/*bm

2.1.2. Alternation between /b/ and /f/

For the ancients, /f/ is a "sound" that comes out of the lower lip and the tips of the upper folds, a soft whisper, and /b/ is a "sound" that comes out of between the lips (cf. Siibawayh,1975, pp.433-4) and the same description can be found among the moderns : /f/ is a "fricative labial sound" and /b/ is an "explosive labial sound" (Bichr, 1980, p.118).

In some languages, you can find forms like a /xazab/ (i.e. ceramic) cup and a /xazaf/ (i.e. ceramic) cup (Ibn Al-sikkit, 1903, p.15). Similar examples include /naqib/ and /naqif/ and /manqub/ and manquf/ (decayed trunk) (cf. Abo-Al-tayeb, 1960, p.21). The /f/ has replaced the /b/ : In modern dialects we find an extension of this substitution as in : /fħal/ vs. /bħal/ (same). /b/ and /f/ are produced by the same articulatory organ, the lips. If we refer to phonotactic constraints, we find that the collocation between /f/ and /b/ is not possible in the root whether in Arabic or any Semitic language (Abo-Al-tayeb, 1960, p.22) This explains the non-occurrence in roots of sequences like : *fb* or *bf, as in (5c) below.

5):

a)

/kabaħa/ vs. /kafaħa/

/naqib/ vs. /naqif/
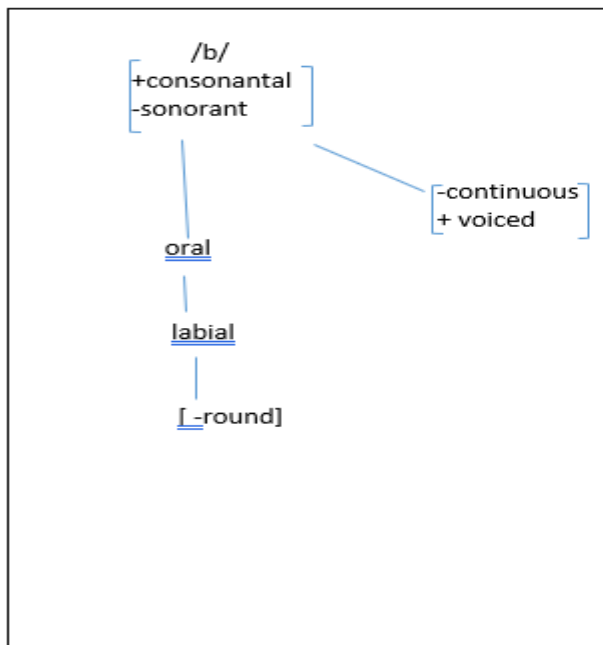
/naqaba/ vs. /naqafa/

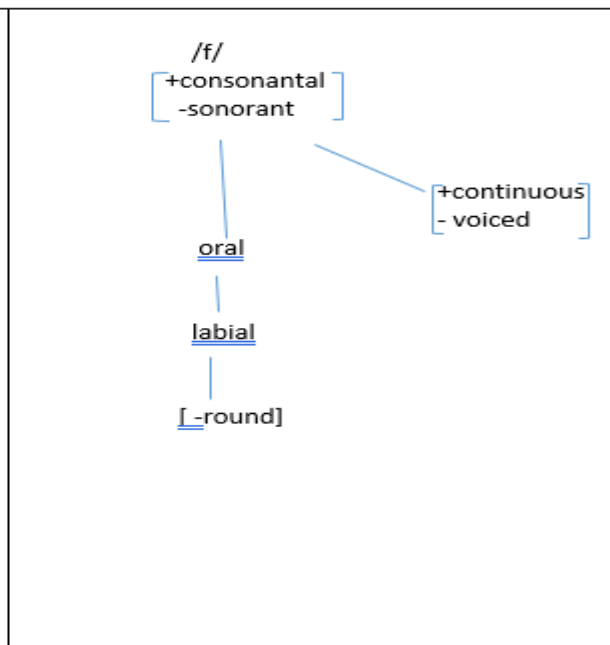b)　　/bħal/ vs. /fħal/

c)　　*bf vs. *fb

Hence, it can be said that labials form a natural phonological class because they are phonologically related and share the same phonological rules, as shown by the feature tree in (6a-c).
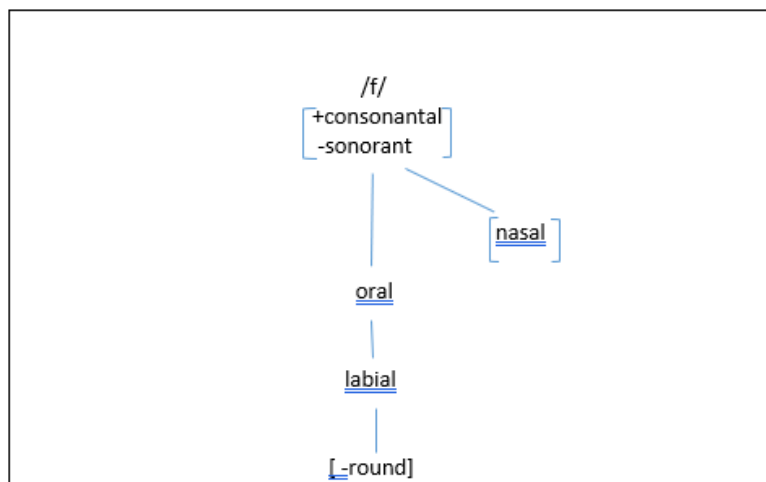
6):

2.2 Class of Obstuent alvoelars

2.2.1 Alternation between /s/, /z/ and /ṣ/

The substitution in these letters was famous among the Arabs, for they share the same place of articulation. The reason for this is that /s/ and /z/ are produced, according to the ancients, between the tip of the tongue above the alveolar ridge; the difference between these sounds is that /s/ is voiceless and /z/ is voiced (cf. Siibawayh, 1975, pp.434-5). However, modern linguists believe that /s/ is a voiceless fricative alveolar and /z/ is the voiced counterpart (cf. Bichr, 1980, p.12) ; As for the ṣadh /ṣ/, it is a voiced emphatic fricative (Bichr,1980, p.120). Evidence of this substitution includes *bazaqa*, *basaqa* and *baṣaqa*, (spit) : Abu Zakariya Ibn Abi al-Harifish al-Bardi reported that two Arabians quarrelled and one of them said *sakr* (falcon) and the other utered ṣakr ; so they appealed to an old Arab who pronounced it *zaqr* (Al-zajaii, 1992, pp.64-66). Other examples include /riʒs/, /riʒz/, /riʒṣ/ (satan). Another example is *abzaqat, absaqat and abṣaqat* (she spits).

a) The alternation between /s/ and /z/ is also emphasized in the following examples :

/šasaba alfarasu/ vs. /šazaba alfarasu/ (the horse shaked)

/ irtaʒaza/ vs. /irtaʒasa/ (move)

/saɣsaɣahu/ vs. /zaɣzaɣahu/ (winked with the spear) (cf. (Al-zajaii, 1992, pp. 66-**7**):

/sarata/ vs. /zarata/ (drop and scopp a morsel) (cf. Ibn Mandour, 1988, p.307)

b) The alternation between /ṣ/ and /s/ is showcased in the following examples :

/ašxaṣa/ vs. /ašxasa/ (to malign)

/ṣinaaya/ vs. /sinaaya/

/šammaṣtu/ vs. /šammastu/ (to sun) (cf. Ibn Al-sikkit, 1903, p.42)

These three sounds (s, ṣ and z) share the characteristic of whistling that accompanies their pronunciation ; that is why they are called aspirated or whistling sounds. They share the characteristic [+sibilant]. That is, when pronounced the air is obstructed by an additional barrier in addition to the basic barrier. If we refer to the Arabic phnotactic constraints, we find that the coccurrence of /s/, /z/ and /ṣ/ is not possible in the roots of the Arabic language, especially in neighbouring locations. This explains why roots such as those in (7b) are not attested. We find an extension of these alternations in Moroccan Arabic such as *zaʔtar, saʔtar, ṣaʔtar*. See (7a) below :

7): a- /zaʔtar/, /saʔtar/, /ṣaʔtar/

b-   *sz- *zs- *ṣz

2.2.2 Alternation between /d/ and /ð/

An example of this substitution is shown in (8a): *idraʕafat* vs *iðraʕafat* (the camels went faster). A similar alternation is attested in Moroccan Arabic (see 8b below) : *ustad* vs. *ustað* (teacher), *ðahab* vs. *dahab* (gold). Most Arabic colloquialisms have dispensed with the [+continuous] feature, (i.e. fricative). This alternation between /d/ and /ð/ is phonetically justified by the fact that they share the same articulatory organ which is the tip of the tongue, i.e. [crown] ; phonetically, they meet at the level of the [+continuous] feature, and Arabic phonemes that meet on this feature alternate and do not abut by each other, which explains the nonexistence of roots such as : *dð/*ðd, as shown in (8c).

8): a-   /idraʕafat/ vs /iðraʕafat/

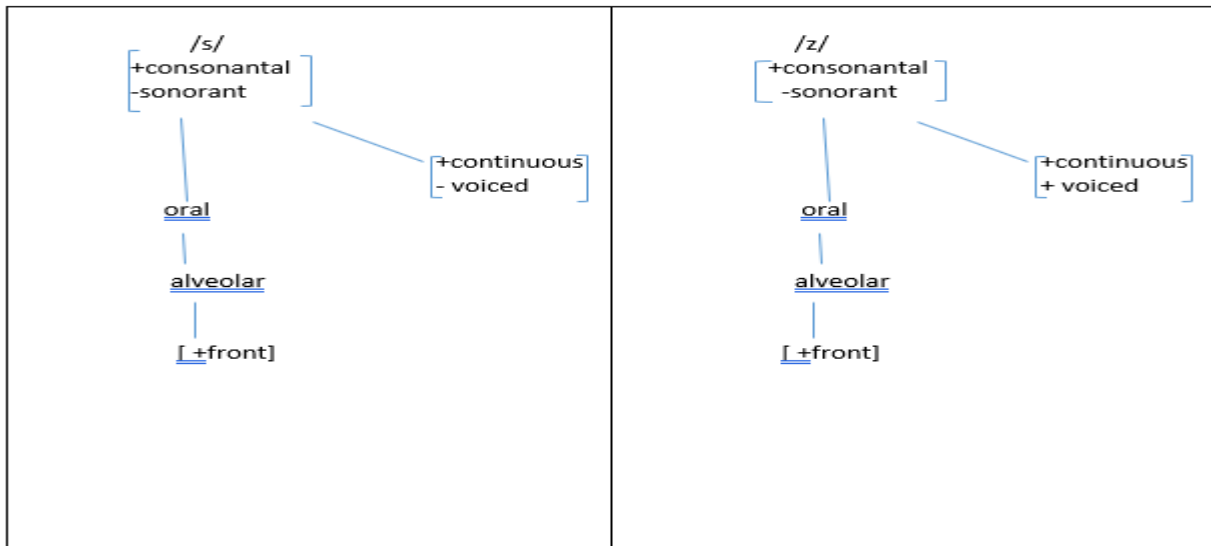 b-   /ustad/ vs. /ustað/ ; /ðahab/ vs. /dahab/

  c-   *dð/*ðd

Thus, we can conclude that the obstruent alveolars form a natural phonological class that shares a single rule, namely the rule of forming a geminate with the definite article ; this is made possible since they share a set of features as the feature tree in (9a-c) shows.
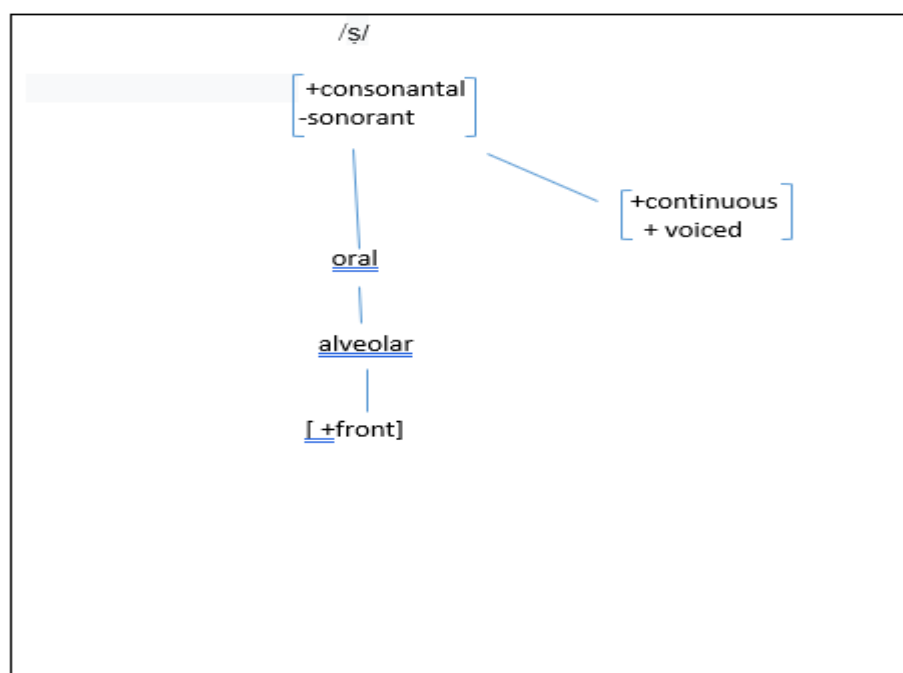

9):

c)

2.3 The class of sonorant alveolars

2.3.1 Alternation between /l/ and /n/

These three letters (sounds) were called approximants by Al-Khalil because ''they result from airstream that passes along the side(s) of the tongue." He indicated that they are produced by the same articulator. He argues that : "The r, l, and n share the same place." (Cf. Al-faraahidi, 1967, p.65). However, Siibawayh's description of these sounds specified that they are alveolars ; for him /r/ and /n/ are produced as a result of moving " the edge of the tongue from the bottom to the end of the tip of the tongue, and from there to the upper palate and above the folds, where the /n/ is articulated." (Cf. Siibawayh, 1975, pp.433-4). He also adds that : " the place of articulation of /n/ raises the back of the tongue a little because it deviates to the /l/, towards the place of articulation of /r/." For Ibn Jinni (1985), the articulation of /l/ is characterized by moving : " the edge of the tongue, from its lowest point to the end of the tip of the tongue, close to the hard palate above upper teeth." (Pp. 51-52).

Modern linguists such as Moukhtar (1975) call these sounds alveolar sounds. This is similar to Siibawayh's description of /l/, a lateral alveolar pronounced by having the tip of the tongue close to or touching the ridge behind the teeth, blocking the nasal cavity by contacting the back wall of the throat accompanied by a vibration in the two vocal cords. /n/ is pronounced by bringing the tip of the tongue into contact with the alveolar ridge and lowering the soft palate to open the nasal cavity and create a vibration in the vocal cords (cf. Ramadaan, 1982, pp.47-48). A set of evidence has come to prove the substitution between these two sounds ; this substitution has been attributed to Qays, Tamim, Asad,

Qaim Allah, Kaleb, and Tayyab. This is what Al-Zajaji mentioned in "Bab Al-Nun and Al-Lam" ; examples include : *abbantu almayyit* vs. *abbaltu almayyit* (made eulogies to the dead); *israjil* vs. *israjin* (Israel). In this regard, Al-Farraa recited :

The people of the market say, When we came here, this and the Lord of the house is an israjina (Israelite).

Other examples include *jibril* vs. *jibrin* (archangel Gabriel) ; *ismail* vs *ismain* (name); *qilla* vs *qinna* ; *ʕunwan* vs. *ʕulwan*   (address) ; *hattalat* vs. *hattanat* (rain pourring) ; *laʕallaka* vs. *laʕannaka* (you may) (cf. Al-zajajii, 1992, pp. 92-94).

Such substitution is attested in Moroccan Arabic. Consider the following examples: *sardin* vs. *sardil* (sardines) ; *ħlu* vs. *ħnu* (sweet) (see 10b).

These two sounds agree in loudness, openness, and place of articulation ; they are characterized as 'middle sounds', oscillating between intensity and softness ; still, they differ at the level of the distictive feature [+nasal] that alternates in the Arabic language ; this explains the non-existence of roots such as : *nl/*ln, as shown in (10c).

10):

a-   /jibril/ vs. /jibrin/

   /ʕunwan vs. ʕulwan/

   /hattalat/ vs. /hattanat/

b-   /sardin/ vs. /sardil/
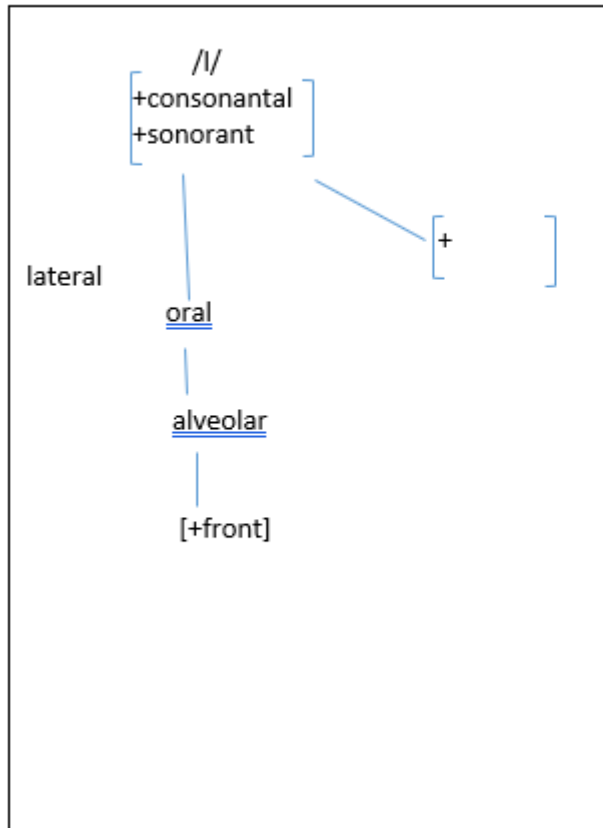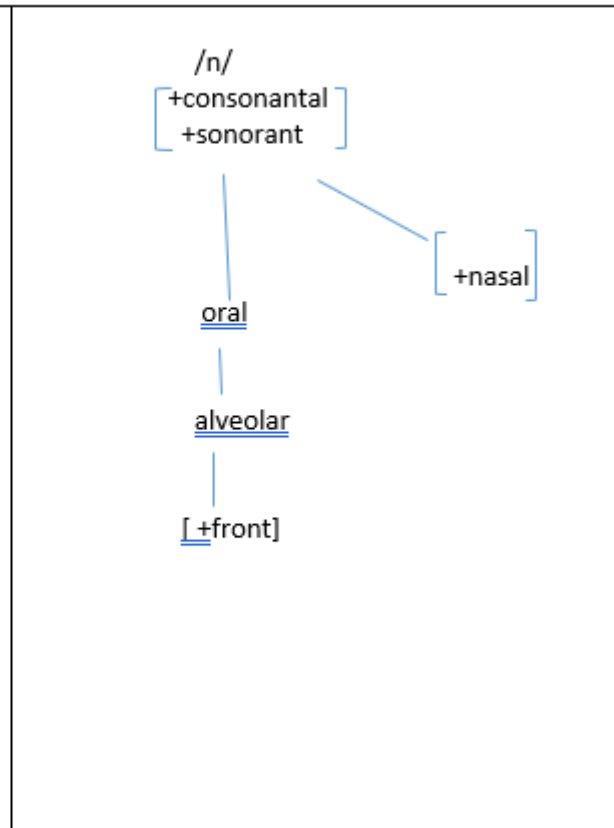
   /ħlu/ vs. /ħnu/

c- *nl/*ln

This is illustrated by the feature tree in (11), which shows that the sonorant alveolars form a natural phonological class.
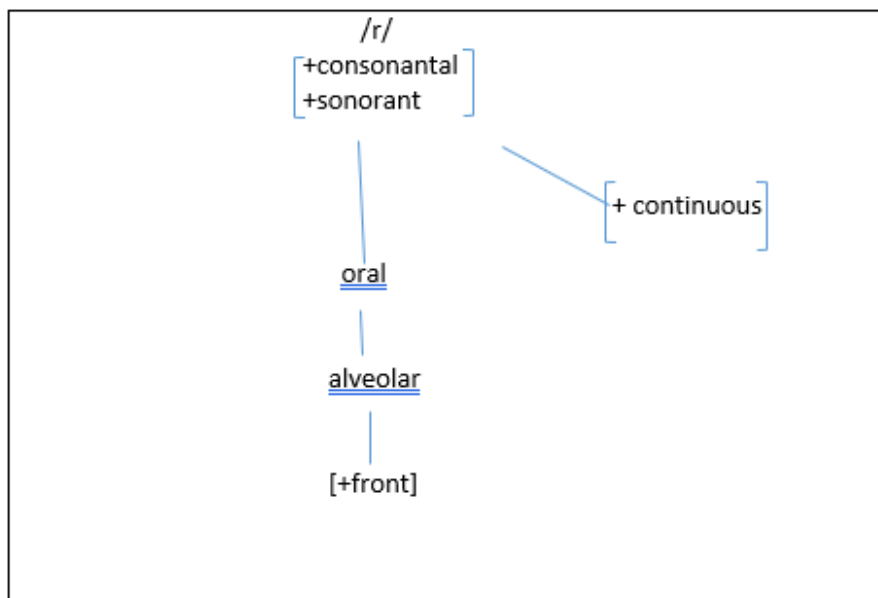
11):

a)

b)

c)

2.4 The class of laryngeal glides /ʔ, h/

The hamza /ʔ/ and haaʔ /h/ are two phonemes that come from the far end of the throat: "The throat has three sounds, and the farthest ones are the hamza and the haaʔ."

(Cf. Siibawayh, 1975, pp.433-4). The hamza is an explosive sound that is pronounced when the opening of the glottis is completely closed, blocking the air in the throat; when the opening of the glottis opens, an explosive sound is heard. There is disagreement between the ancients and moderns about the loudness and whispering of the hamza; while the ancients considered this letter muffled, the moderns considered it whispered, because the two vocal cords do not vibrate while pronouncing it; rather, the two vocal cords are the ones that come togeteher to produce the sound of the hamza. As for the haaʕ, it is a soft (fricative) letter (sound) pronounced by the air exiting the lungs, rubbing against the area of the vocal cords with a narrowing of the airway as the air passes into the throat. (Cf. Ramadaan, 1982; Moukhtar, 1982).

Modern phoneticians refer to the sounds of hamza and haaʕ as laryngeal sounds; the substitution of hamza for haaʕ has been attributed to Yemen, Tayyah, and the people of the Hijaz. The evidence for this substitution is shown in the following example: ʔayaa fulan and hayaa fulan (come mate). Ibn al-Sakit cites a poet saying:

And she went away an angry horse, and lifted up her voice, and said, "hayya, father! Every girl admires her father.

Other cases attest this alternation, viz.: *ʔarraqat/ harraqat almaʔ* (she poured water); *ʔiyyak/hiyyak* (pay attention) ; *ʔayaa zayd/ hayaa Zayd* (come Zayd); *izmaʔarrat aynuhu/izmaharrat aynuhu* (his eyes turned reddish) ; *ʔayhaat / hayhaat*. (Cf. Ibn Al-sikkit, 1903, pp.25-26).

2.4.2 Alternation between / ʕ/ and /ʔ/

Alayn / ʕ/ is a soft, open fricative sound that is pronounced by narrowing the throat at the level of the epiglottis and protruding the epiglottis backwards until it almost touches the back wall of the throat, while at the same time the soft palate rises to block the nasal cavity and cause the vocal cords to vibrate. As for the hamza, its place of articulation and characteristics have already been discussed. An example of the alternation between the hamza and the ayn is as follows : *kaθaʔa allaban* (Milk is thick) ; *ʔawmun ʔakkun* vs. *yawmun ʕakkun* (a sunny and hot day); *ʕusun vs. ʔusun*.

The phenomenon of replacing the hamza with alayn is a Tamimi phenomenon that has been proven in Arabic texts, where they make the substitution of the hamza with a ayn ; this is called al-ʕanʕanah. According to linguists, the disreputable of languages are those that "include al-ʕanʕanah, a characteristic of the language of Qays and Tamim ; according to *Al-ssoyouti* (1998) these two tribes start words with ayn instead of hamza : ʕannak for ʔannak, ʕaslama for ʔaslama, and ʕudun for ʔudun,." (See 12a). The reason for replacing the hamza with the ayn can be explained by the difficulty of pronouncing the hamza because it requires a great muscular effort. Ibn Yaeesh (n.d.) maintains that: " al-Hamza is a heavy sound that comes out of the far end of the throat … it is the most difficult letter to pronounce. It is the language of Quraysh and most of the people of the Hijaz, which is a

kind of approval for the heaviness of the hamza." The Arabs resorted to getting rid of the hamza by three ways: a) Replacing it with /ħ/, b) reducing it, or replacing it with a ayn. Thus, the heavy hamza, which is labelled [-continuous] (i.e. explosive), was replaced by a ayn, a soft [+continuous] fricative sound close to it. If we refer to phonotactic constraints, we find that the combination of the ayn and the hamza is out of the question. This explains the non-attested sequence *ʕʔ/*ʔʕ, as shown in (12c). An extension of this alternation is found in modern Egyptian dialects. Consider laʔ and laʕ. Similarly, in Sudan, we find cases like alʕafyun and alʔafyun, (see 12b).

12):

a-

   /ʕakka/ vs./ʔakka/

   /ʔalʕusnu/ vs. /alʔusnu/

   /ʔaslama/ vs. /ʕaslama/

   /ʕudun/ vs. /ʔudun/

b-

   /laʔ/ vs. /laʕ/ (in Egypt)

   /ʔalʕafyun/ vs. /ʔalʔafyun/

   /ʔalʔunbub/ vs. /ʔalʕunbub/

c-

   *ʕʔ/*ʔʕ

2.4.3 Alternation between /ʕ/ and /ħ/

The **ayn /ʕ/** and **alħaa /ħ/** are both laryngeal sounds, coming from the centre of the throat. Siibawayh (1975) claimed that: " the middle of the throat is the place of articulation of the **ayn** and **alħaa''** (pp.433-4). The /ħ/ is a soft "fricative" sound that is pronounced by narrowing the airway in the throat space so that the passage of air causes friction while the two vocal cords do not oscillate. The sound of the **ayn** is the voiced fricative counterpart of **alħaa (cf.** Bichr**, 1980, p. 121**) . It is rare for non-Arabs to be able to pronounce the ayn correctly, while many Arabs pronounce the ayn as /x/ or /h/. Evidence for this substitution is provided by Siibawayh who argued: "What the Arabs have claimed in confirmation of this is the saying of the Banu Tamim, "Maħħum to mean maʕahum , and Maħħawla, to mean haʔulaʔ''. In the Koran, the word *buʕϴira* is pronounced *buħϴira*. According to Al-Farraa this substitution is a characteristic of the dialect of Banu Asad. It is narrated that , when Umar Ibn al-Khattab learnt that Ibn Mas'ud was reading "Let him be imprisoned until /ʕatta/ then", he wrote to him, "The Qur'an was not revealed in the language of Hadeel, so read the people in the language of Quraysh." This text attributes "**ħatta**" to Quraysh and " **ʕatta** " to Hadeel. The attribution of **ʕatta** ' to the dialects of Hadeel and

Taqeef is evidenced by what is reported from Al-Farraa who explained: " **ħatta** is the language of Quraysh and all Arabs except Hadeel and Thaqif, say ' **ʕatta** ' ''. (Cf. Al-zamakhchari, 1971, pp.391-2).

Ibn Aqeel said: "The Hadeel language replaces **alħaa** with **alayn**." Abu Ubaydah affirms that, " **Dabaħat alxaylu, taDbaħu Dabħan (**The horses have been sacrificed**) taDbaħu Dabħan and Dabaʕat Dabʕan**'' (See 13a). This phenomenon is called alfaħfaħa, which is the substitution of the letter **ħ** with **alayn**, as mentioned in Al-Mazhar by Al-Siyuti ; in other words, *alfaħfaħa* in the dialects of the Arabs is the replacement of the letter **ħ** with **alayn**. He mentioned this in the chapter "Knowing what Languages are Reprehensible " (cited in Abo Al-tayeb, 1960, pp.291-2). We find an extension of this substitution in the Moroccan dialect, such as *dallaħ*/*dallaʕ* (**watermelon**), *draʕha*/*draħha* (**her** arm), *zaʕtar*/*zaħtar* (origanum), *kaʕk* /*kaħk* (**cake**), as in (13b). The ayn and **alħaa** are two sounds that have similar position and share the same pharyngeal articulator; yet, they differ in voicing. If we refer to phonotactic constraints of the Arabic language, we find that the occurrence of **alayn** and **alħaa** is not allowed. This explains the non-existence of roots such as: *ħʕ/*ʕħ. (See 13c).

13):

a-

/buʕϴira/ vs. /buħϴira :

/ħatta/ vs. /ʕatta/

/Dabaħat / vs. /Dabaʕat/ alxaylu

b-

/dallaħ/ vs. /dallaʕ/

/draʕha/ vs. /draħha/

/zaʕtar/ vs. /zaħtar/

/kaʕk/ vs. /kaħk/

c-

*ħʕ/*ʕħ

Thus, it can be said that the gutturals form a natural phonological class that is subjected to a set of phonological and phonotactic constraints. This is evidenced by phonotactic constraints and the rule of high vowel lowering in the present tense stems of verbs when these intersect with the roots containing laryngeal sounds. In other words, the vowels of the stem of the present tense verb turn into a low vowel (fatha), as in /saʔala/ /jasʔalu/ (he asked vs. he is asking) and /fataħa/ **vs. /jaftaħu/** (he opened vs he is opening) The feature tree in (14) illustrates the common features of this class of sounds:

14): a)   b)
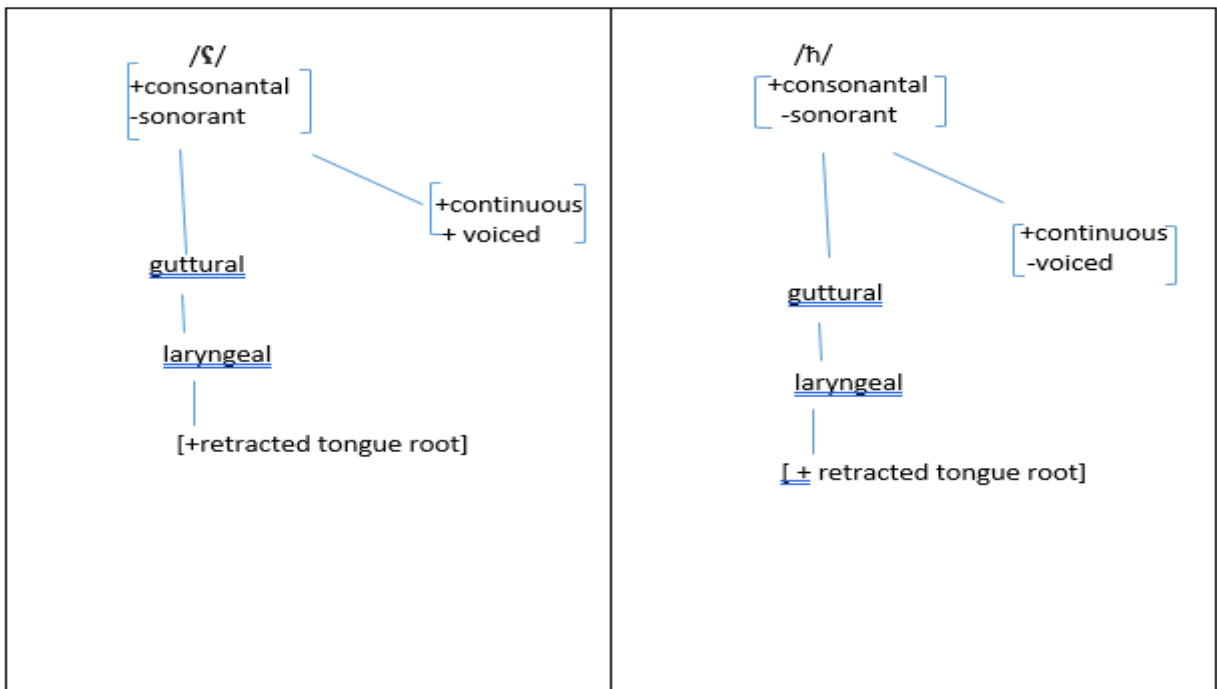
c)   d)
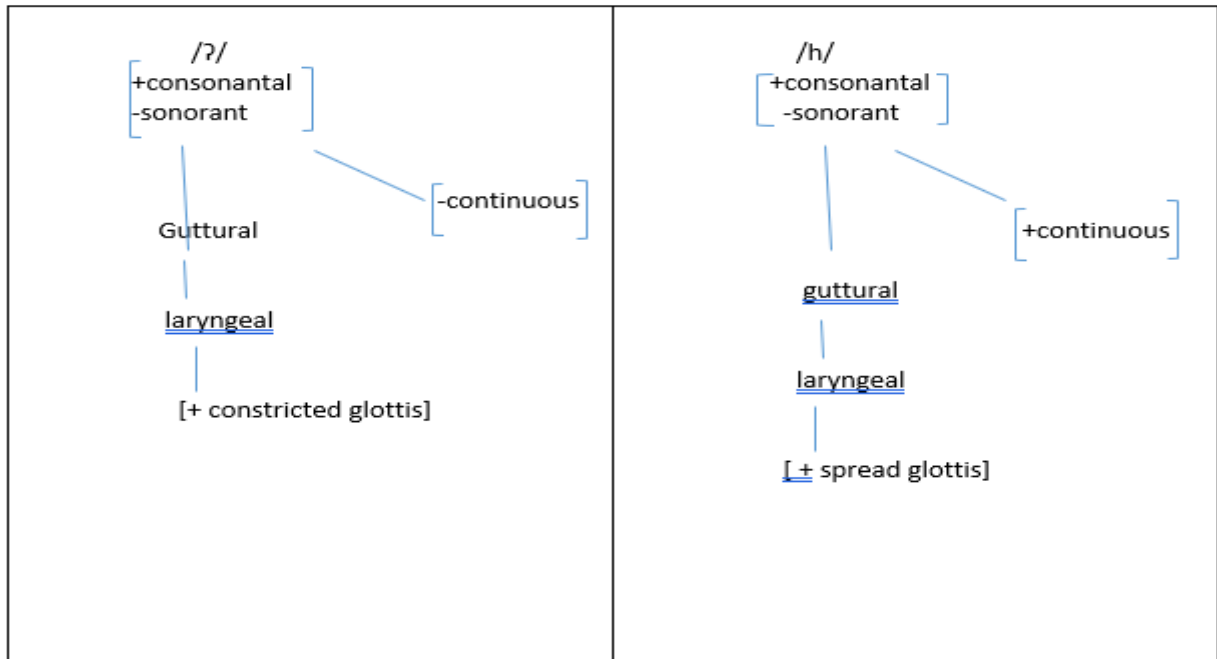
As alghayn /ɣ/and alkhaaʔ /x/ do not meet this rule, El Waadi took them out of the class of laryngeals.

Enter your results in this section in the same approved format (line, size, distance between lines), and a summary of the collected data must be presented in the form of ratios or totals, and then review the analysis that was performed on that collected data using both text and explanatory means (tables and figures referred to) In Appendix No. (), according to the method and tools presented above, and after presenting the results, their implications

can be evaluated and interpreted in light of the hypotheses, and compared to what others have reached in previous studies.

3- Conclusion

The phonetic alternations attested in Arabic speech are governed by phonetic and phonological laws; phonemes that alternate share either the same place of articulation or a phonetic feature. These differences, such as /ʔanna and ʕanna/, /ħatta and ʕatta/, /makka and bakka/ and other alternations governed by the presence of phonetic kinship between these phonemes, do not make the dialect of one tribe more eloquent than the other ; but these are variations licensed by the Arabic pattern, and the use of one of the alternating sounds without the other does not detract from the eloquence of the user, because eloquence is achieved by observing the rules of good composition and the patterns of morphological templates ; moreover, none of the ancient Arab dialects violated these two conditions. The proof of this is the circulation of ancient dialectal characteristics in our modern dialects.

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