

## DEMOISTURIZATION VARIATIONS OF THE ARABIC PHONEME “JEEM”

Tareq Ibrahim Al-Ziyadat <sup>1</sup>

### ABSTRACT

The study aims to determine the demoisturized sound among the variations of Arabic phoneme, Jeem, the fifth Arabic alphabet, through examining the manner of articulation of these variations. It will also examine how place of articulation affects the air causing this demoisturization. The researcher made use of an explanatory diagram and the computer program (praat) and came up to the following findings: 1) Classical “Jeem” is not a combination of plosiveness and friction. 2) It also retains some moisture which facilitate gliding of the tongue forward to create narrowness that results in friction. 3) The Levant “jeem” is more moisturized than the classical one as its stable moisture is exposed to a strong rush of air. 4) Caireen “jeem” is not demoisturized. Because air rushes out intermittently, it doesn’t create demoisturization which requires a continuous air flow.

**Keywords:** Caireen jeem; Classical jeem; Levant jeem; Demoisturization.

---

### 1. Introduction

Phonology is one of the fields in which scholars differ with regard to phonemes which are constantly developing. To the ancients, Arabic phonemes were articulated differently from what they are pronounced now by modernists. That could be inferred from the different descriptions they assigned them. For example, (Qaf), 21<sup>st</sup> Arabic alphabet, is for the ancients voiced, but for modernists voiceless. The “Daad” phoneme 15<sup>th</sup> Arabic alphabet, was a major problem for scholars; for the ancients it was a fricative lax phoneme, while for the modernists it is a tense plosive one. Such a thing implies that the ancients articulated it differently from modernists. The variety of articulation did not happen inadvertently, but as a result of the phonemic development through passage of time.

It also happens that modernists also differ in articulating a phoneme, as the case with “jeem”. Some describe it to be a demoisturized phoneme in classical articulation, others describe the levant “jeem” to be the demoisturization. This controversial issue prompted the idea of this study in which the researcher attempts to specify the actual demoisturized phoneme. Based on that, he defines demoisturization, its features, conditions, and the mechanism of articulating classical and levant “jeem” comparing them in manners of articulation which affect demoisturization of the phoneme.

#### 1.1 Significance of the study

The study is significant as it sheds light on demoisturization feature of the phoneme “jeem”, a quality which has, to the knowledge of the researcher, been rarely discussed in Arabic

---

<sup>1</sup> Arabic Department, Isra University Amman, Jordan. Email: [wesam\\_198221@yahoo.com](mailto:wesam_198221@yahoo.com)

phonology.

Thus, the current study will determine what demoiaturization is, its conditions, and the phoneme to which such conditions apply. The researcher will do that by referring back to what the ancients and modernists said on the issue and to the details they provided regarding the manner of articulation of the phoneme “jeem” and the features that distinguish it from other phonemes. The present study is singled out for the analysis it performs using the (praat) computer program.

### 1.2 Questions of the study

The study tries to find answers to the following questions:

1. What does phoneme demoiaturization mean?
2. What are its conditions?
3. How do manners of articulation affect demoiaturization?
4. Which phoneme can be described the demoiaturization one?
5. To what extent, is the classical jeem a combination of plosiveness and friction?

### 1.3 Objectives of the study

The researcher aims to clarify the following:

1. Explain what Demoiaturization is and what are its conditions?
2. Illustrate the differences between phonemic variations of the “jeem” with regard to demoiaturization and manner of articulation.
3. Explain the effect of manner of articulation and air on the degree of demoiaturizaion.
4. Determine the influence of moisture on phoneme articulation.
5. Discuss the structural issue of classical “jeem” to figure out whether it is compounded from plosiveness and friction or from stop and friction.

## 2. Methodology of the Study

The nature of the study dictated adopting the descriptive analytical method. The researcher will collect what the ancients and modernists said on the issue of demoiaturization, discuss that in depth in order to achieve the objective of the study comparing it through explanatory drawings and images.

## 3. Literature Review

Kantino in his book “lessons in Arabic phonology”, which was translated by Saleh Qarmawi in 1966, discussed Arabic “jeem” which he described as “tense and lax phoneme”. He meant that it is a tense phoneme that ends lax with friction. Scholars got along with him in this, but disagreed on the issue of whether the “jeem” structure is caused by plosiveness and friction or from stop and fiction? Then he followed up the development of the phoneme “jeem” in which it is pronounced as “Kaf” “22<sup>nd</sup> alphabet in Arabic” and the pronunciation like the phoneme

“sheen”, 12th Arabic alphabet. He indicated that the ancients never referred to laxity with which articulated “jeem” ends. Ibrahim [Anees \(1975\)](#) in his book “language phonemes” tackled the issue of classical “jeem” and its phonemic variations. He found out that it had developed producing the levant and Caireen

“jeems” and the same phoneme is pronounced “Daal”, 8<sup>th</sup> Arabic alphabet in upper Egypt.

He pointed out that classical “jeem” is demoiaturized, but if the place of articulation switches to the back palate, it loses demoiaturization. He also noted that it is closer to old Arabic “jeem”, if not itself, as the origin of the “jeem” is unknown.

Malbridge in his book “phonology”, translated by Abdul Saboor Shaheen 1987, tackled classical “jeem” describing it as the phoneme that combines plosiveness and friction or tensity with laxity. He mentioned that the “jeem” is a combination of two phonemes, one is closer to “Daal”, which is the first variance, and the other is closer to “sheen” which is the second. He defined demoiaturization without elaborating on its mechanism and variations of the “jeem”. He discussed what was restricted to the classical “jeem”.

[Shaheen \(1985\)](#), in his book “Language Development” assigned a chapter for classical “jeem” and its features elaborating on its place of escape and mechanism of articulation. He afterwards discussed the phonemic variations of the developed articulated “jeem” in its three forms: Caireen /g/, voiced velar, levant jeem /ʒ/ (alveo palatal), and the classical one /dʒ/ (palatal), the demoiaturized.

[Bisher \(2000\)](#) in his book “phonology”, assigned a chapter for Arabic “jeem” indicating that it has various forms of articulation: classical /dʒ/, Caireen, /g/, and Syrian /ʒ/.

In this, he agreed with scholars, but was distinguished in highlighting that the “jeem” is characterized by being fricative stop different from other plosive stop phonemes. He also discussed the development of “jeem” pointing out that the Caireen one is the origin of articulation and that the other variations are developed forms of that origin. To support his claim, he provided a set of evidences among which was that the Caireen jeem is the original one in Semitic languages to which Arabic belongs.

Jeitan, Tayseer (2017) in his dissertation on “The phonemic stylistics of Al-Anaam Surah” chapter No. (6) in the holy Quran, the researcher tackled classical jeem highlighting point of escape. He also mentioned that it is a compound of plosiveness and friction in which the phoneme starts like what modern scholars say from a position close to that of “Daal” and ends close to that of levant “jeem”. He also mentioned that some scholars call the “jeem” the dual phoneme with reference to what occurs through its articulation.

As the previous studies were short of any details of the demoiaturization phenomenon in Arabic “jeem”, this prompted the researcher to investigate and analyze such an issue in the current study, hoping that it will add up a new thing to Arabic phonology.

#### **4. Discussion and Analysis**

In this part of the study, the researcher will discuss four major topics: demoiaturization, meaning and conditions, classical jeem /dʒ/, levant jeem /ʒ/, and Caireen jeem /g/.

##### ***4.1 First topic: demoiaturization, meaning and conditions***

When checking demoisturization in Arabic dictionaries, we find that it refers to thirst or water retention. In “Lisan Al-Arab” an Arabic dictionary, it defines thirst to be anti-watering. A thirsty place is that where water is scarce, “Utash” are diseases that inflict humans in which their thirst is never quenched. ([Ibn Manthoor, 1993](#)).

As for the term “Taateesh” (make someone feel thirsty), it implies two elements: the event itself-thirst, the doer and the receiver. This means that the word “Taateesh” incorporates three elements, the event, the agent who caused that, and the receiver who suffered from lack of water. Moreover, anything can never be made thirsty, unless it quenches thirst first. Thus, becoming thirsty is sequential to having lost water and moisture. The object, as a result becomes dry and demoisturized.

Terminology wise, Malbridge (n.d) defined “taateesh” saying that sound starts when air is detained between the middle of the tongue and the parallel palate, then is suddenly released. As the area the tongue occupies is relatively large, when compared to the retention that occurs behind the gum, the tongue doesn’t separate itself from the palate the same moment, causing friction. The articulator intensifies this friction a little to produce a compound ‘jeem’ that incorporates some intensity and laxity. Thus the “jeem” in foreign transcription has two symbols /dʒ/ as /d/ stands for intensity and /ʒ/ for laxity.

The preceding discussion reveals that demoisturization is the outcome of the friction that occurs at the point of articulation when the tongue moves away from the gum in the phoneme “jeem” which Malbridge described as the classical jeem which scholars labeled as compound of two phonemes (d), and levant jeem (ʒ).

#### ***4.2 Demoisturization conditions***

It is now clear that demoisturization will affect only wet or saturated things. Certain tools control and affect it.

The wetter and more saturated the things are, the stronger and faster the tool of demoisturization is. The only tools of demoisturization in human’s articulatory system are air, in addition to, long mouth opening which only happens at articulation. This is the subject of the current study which elaborates on the mechanism of demoisturization during articulation occurring when air passes through the articulatory system.

There is no doubt that the articulatory manner of each phoneme differs from those of others. Had this difference not exist, all phonemes would have been articulated the same and this never creates a language by which humans can communicate. The oral cavity with its articulatory obstructions create certain positions which affect air movement on its way from lungs to mouth. This will also help to dry moisture found in the oral cavity. The faster the air is and the wider the cavity is, the stronger the air will be in demoisturizing, a factor that affects sound resonance. Avicenna was aware of the role of moisture in phoneme articulation. In his letter, he elaborated on the amount of moisture in each phoneme. On the phoneme, “Ein”, the 18<sup>th</sup> Arabic alphabet, he assures that air closure is not complete, but strong and deeper as it moves into the throat. When released from the larynx; it is the wettest and the

highest moisturized. The straight rush of the air shatters moisture (1982; 114). It is noted that Avicena found a relation between non-complete closure which contributes to air rush and moisture which is shattered, due to air obstruction that affects phoneme articulation creating the needed resonance.

Thus, the demoiurization process is in need for the following:

1. A special articulatory manner and particular positions articulators take allowing air to eliminate moisture, a position that requires narrowness that leads to audible friction.
2. Air should move fast in order to remove moisture and demoiurize place of articulation.

#### **4.3 Second subject: classical jeem (d3)**

The phoneme “jeem” is one of those phonemes which was a problem for modern phonologists because when they traced its escape as described by the ancients and compared that to what they came up to, they found that the ancients didn’t notice certain aspects in their description. For example, Sebaweyh said “the escape of” “jeem, sheen, and Ya”, 5<sup>th</sup>, 13<sup>th</sup>, and 28 Arabic alphabets respectively, occurs between the middle of the tongue and mid-hard palate (Sebawey; 433). He also mentioned some of the unfavored alphabets to read “In reciting the Quran and poetry, which are unfavored in reading: “Kaf” between jeem and “Kaf”, “jeem” that is similar to “kaf” (velar) and the jeem similar to “sheen”.

They found out that classical “jeem” /d3/ had developed throughout ages and ended up with a group of “jeems”: classical, that of Quran and poetry, transcribed as /d3/, the one between “kaf” and jeem, known as Caireen jeem transcribed as /g/, velar, and the Levant jeem spoken in Jordan, Syria, and Lebanon, and transcribed /3/ ([Shaheen, 1985: 186](#)).

Such a variation implies that there are three mechanisms to articulate these three phonemes, each has its own features. It also implies that the “jeem” was once pronounced as one which developed throughout ages to have two more forms. The difference between scholars is mainly confined to classical and Caireen jeems, /d3/, /g/, respectively.

Some like, [Bisher \(2002\)](#), said that the Careen “jeem” /g/, the velar one, is the origin as there are clear historical traces that the modern Caireen jeem, /g/, is the origin ([Bisher: 320](#)); while others like [Al-Hamad Qadoori \(2003\)](#), sees that classical jeem /d3/ is the origin. He affirms that the it was the “jeem” used by Arabs during the period of Quran revelation. It is the one articulated by Quran readers and many of speakers of Arabic today. It is the one tackled by scholars of Arabic Tajweed (Quran reciting) scholars who described it to be a tense phoneme articulated at the middle of the tongue that faces the upper palate (Qadoori: 244).

When considering the description the ancient Arabs gave to the jeem “(attributed to Qureish)”, one of the major Arab tribes, which was known for eloquence, one can find that in a word like /wad3ada/, the description is not quite accurate when compared to what the modernists had come up to. Sebawey says that the jeem’s ascape is from the middle of the tongue and mid- upper palate similar to escapes of (jeem, sheen and ya) (Sebawey: 433). Such

a description doesn't specify the exact point of escape of the phoneme, but accounts for the place of articulation for such phonemes with their variations.

In considering modernists descriptions, we find that the exact description of the escape is elaborated on in the following:

- 1- [Jabal, \(2006\)](#) pointed out that in articulating the demoiaturized "jeem" air rushes through the vocal cords making them vibrate till it reaches oral cavity where the front part of the tongue rises to closely touch the front palate then releases slowly producing the tense phoneme "jeem" (Jabal:102)
- 2- [Bisher, \(2000\)](#) stated that articulating the "jeem" phoneme starts by raising front of the tongue toward front palate and back of the gum which holds back the air released from the lungs. Then, instead of sudden separation (as the case with plosive stops), the tongue retracts slowly giving air an opportunity to touch separated organs ([Bisher](#): 310).

The two preceding statements reflect that all scholars agree on "jeem" to be a phoneme produced when front of the tongue closely touches back of the gum which never allows air to escape. It is a different manner of articulation. From the view point of modernists, in other tense or plosive phonemes, when the two articulators meet, they separate very quickly creating a resonant plosive. In the case of "jeem", the articulators slowly move away without causing any plosiveness, but an audible friction is heard. Fandarees called this explosion (the failure one). In accordance with that, scholars termed "jeem "the compound phoneme" because it combines two manners of articulation: plosiveness and friction. [Al-Nuri, \(2007\)](#) pointed out that this consonant "the jeem" combines plosiveness with friction, i.e., it starts plosive and ends fricative (157). If we follow the "jeem" escape, we find that after air passes through the vocal cords causing them to vibrate, it reaches a point of escape where the front of the tongue rises toward the upper gum touching it and holding air back. The tongue then slowly moves away creating a kind of friction where the explosion happens?

It is known, in phonology, that complete closure resulting from the meeting of two articulators is followed by an explosion, pending that the articulator's separation occurs fast which never happens with the "jeem". The separation slowly occurs preventing explosion. Therefore, articulating the "jeem" passes through two processes: air stop and friction, as referred to by Bisher when he said: "in the classical jeem as pronounced today, air is detained once articulation starts, then is followed by a slow passage of air causing an audible friction at the escape itself". There is a stop at the onset and friction at the end ([Bisher](#): 311).

Articulating "jeem" passes through two stages which affect demoiaturization. What happens in the stages is as follows:?

- 1- First stage: the front of the tongue touches the gum holding back air due to this closure. Here, air plays no role in demoiaturization as it is held back. What happens is that air stream rushing quickly from the lungs passes through the vocal cords causing them to vibrate thus, decreasing force of air rush till it stops at the point of closure where it loses the acquired force which becomes zero. This is what [Al-Ilmiyeh and Isteitieh \(2014\)](#) calls negative pressure.

Thus, at this stage the phoneme still retains moisture kept behind internal closure which helps in articulating the phoneme in order to easily move to the second stage.

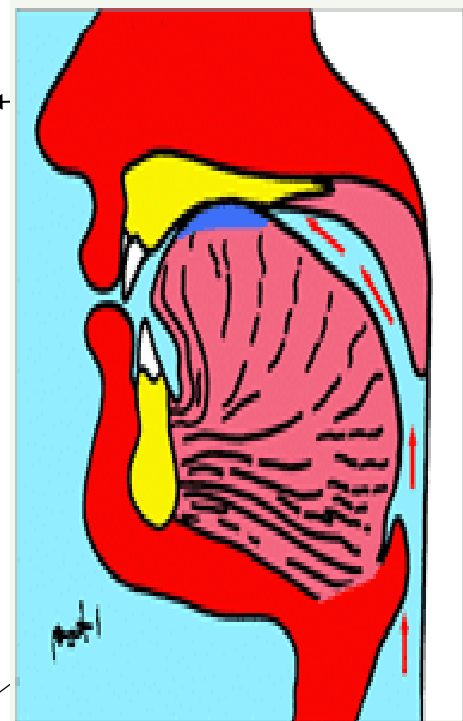
- 2- Second stage: the tongue slowly moves away from the gum creating some sort of narrowness which allows air to seep away from the closure area without any explosion; it creates an audible friction, instead, that leads to minor demoiaturization that results from slow separation and the strict narrowness which prevents plenary demoiaturization as the case is with the phoneme “sheen”. This demoiaturization is minor because of two factors:

First, the air flowing from the lungs faces narrow vocal cords which make it lose its force to flow fast.

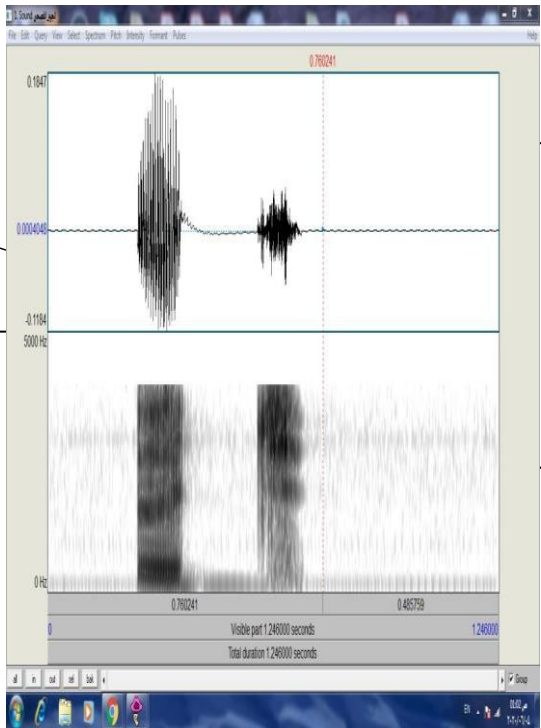
Second, complete air closure at the area, in addition to tongue slow separation from the gum, retains some moisture preventing plenary demoiaturization. Such a thing helps the tongue to glide slowly forward. Had a plenary demoiaturization happened, gliding would have become more difficult and that might affect the correct articulation of the phoneme.

The following picture illustrates that:

First stage: Air closure area resulting from edge of the tongue touching back of the gum. The closure is between two wet organs- the tongue, saliva producer, and the moisturized area above it. Thus, air gets some moisture which restricts its ability for demoiaturization.
Second stage: It is the stage where slow separation between the tongue and hard gum occurs, as the tongue glides forward aided by the moisture that lost a small portion because of air leak, being pressurized in the closure area.
The area where air flowing from the lungs is obstructed. This decreases air speed before it reaches closure area.

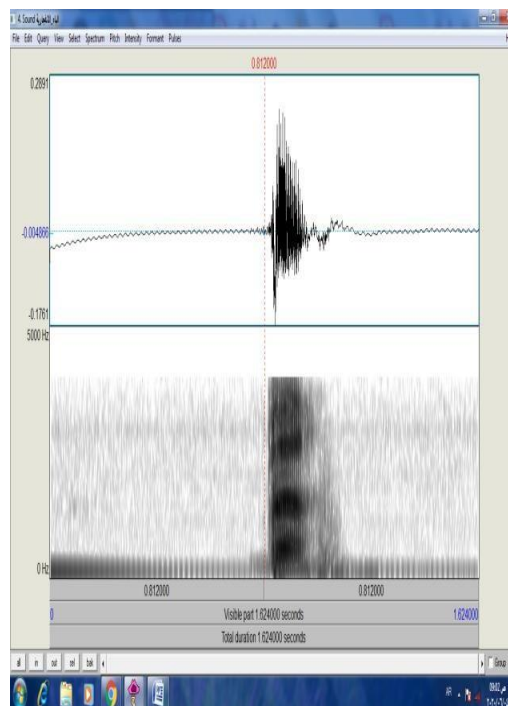


From what preceded, one can notice that classical Arabic “jeem” /d3/ consists of two parts: air stop and air friction, two consecutive processes that do not concurrently occur. Air stop never demoisturizes, but a step towards that. When air stops at the moisturized area, it carries some moisture particles, but after the slow separation, it doesn’t greatly demoisturize. Thus, the demoisturization in the classical “jeem” is confined to the second part, not to the whole phoneme. To illustrate the influence of that, look at the spectroscopy of the phoneme “jeem” using (PRAAT) program for (Boersma & David 2017).

<p>This shows the first stage of articulating “jeem”. It is the stage where air is stopped after closure. The spectroscopy shows sound density which is caused by air retention that acquires moisture of the area retained from the tongue and hard gum. Air didn’t lose anything except that its pressure becomes zero, due to the stop, a preparatory process for slow explosion.</p>		<p>During the second stage of articulating classical “jeem” / d3/, it appears that the amount of moisture was never affected, due to demoisturization to which air was exposed after the slow separation of the tongue from the gum. It is true that it was affected as the black color in the spectroscopy shows, but that was minor. Therefore, scholars called it the “jeem” of little demoisturization or of less tensity.</p>
--	---	--

What we notice in the previous spectroscopy is that “jeem” is not a combination of plosiveness and friction. No. (1) shows the amount of air accumulated in closure area, where as in No. (2) shows how air gradually escapes, known as friction. Had the air been plosive, it would have rushed out quickly in one move. But if we examine the sound of a plosive phoneme like (ba), the second Arabic alphabet, we notice the difference between them with regard to air escape.

Dark area (1) shows the level of air accumulation released from lungs before articulating the phoneme. It is completely compressed because the two lips are lightly closed in preparation for the explosion. It doesn't come along with the lightly shaded area (2). This reveals that detention and explosion are two integrated stages. Detention is followed by explosion without a pause in between. Still they don't come along like what happens in classical "jeem".



The lightly shaded area is that in which articulation starts. It shows that air rushes out quickly in one move creating a quick, sudden explosion. Therefore, the sound of (ba) is plosive as held behind the lips explodes quickly after release. What assures that is the lightly shaded area doesn't come along with the other area, the darkly shaded one that refers to air detention that stops at the articulation of classical "jeem".

The structure of classical "jeem" /dʒ/, as viewed by modernists affirms that the first part is close to "Daal" phoneme, 8<sup>th</sup> Arabic alphabet, and the second part is demojurized like the Levant "jeem" /ʒ/ (Al-Nuri: 157). This view confirms that demojurization in classical "jeem" lies in the second part, not the first because air forms a wave that moves slowly but never demojurizes.

#### 4.4 The Levant jeem /ʒ/

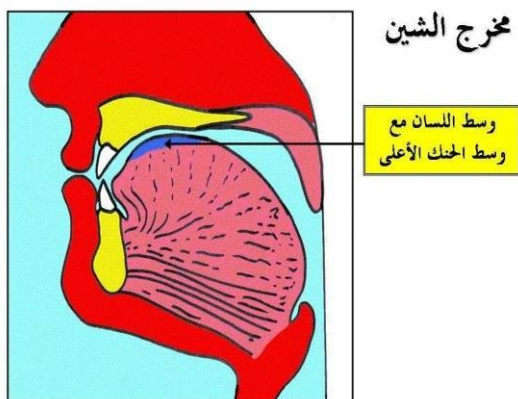
This name is given to the variant “jeem” pronounced in the Levant (Syria, Lebanon, and Jordan). It is much easier to pronounce than the classical one. It is close to the (sheen) phoneme. For example, the word /jamal, dʒəməl (camel), /dʒ/ is voiced while the sheen “ʃ” is voiceless (Qaddori: 242). Ibn Yaesh (2004) pointed out that “sheen” is “Jeem’s” sister in place of articulation (537). They are both fricatives as air spreads out of escape. Avicena said that “sheen” is similar to “jeem” with the exception of closure, thus “sheen” is closure-free “jeem” (76).

Jabal (2006) is describing the “sheen” says “sheen is produced when front of the tongue transversally rises to the front plate narrowing the area between tip of the tongue and front teeth that obstructs passing air. Therefore, air seeps out voicelessly from that narrow escape. (Jabal: 102).

Abdul Saboor (1985) says that the sheen is one of the phonemes in which air largely spreads out on the tongue surface enabling air to eliminate all moisture when the person proceeds in pronunciation.

This is one of the features that the Levant “jeem” borrowed from “sheen”. Still, the two phonemes differ, for the “jeem” is voiced while “sheen” is voiceless and the area occupied by “sheen” is larger than that of Levant “jeem” (187).

The following figure illustrates the points of escape for “sheen” and Levant “jeem”



The narrow area that causes friction. The figure shows that air doesn't stop for the outlet is open and that helps in demoiaturization and moisture elimination.

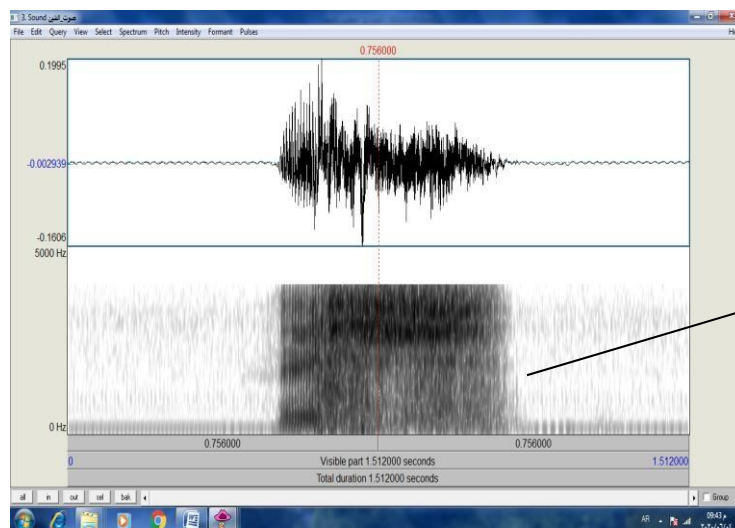
Both “sheen” and Levant “jeem” are fricatives where friction occurs at one stage, not at two. Thus, demoiaturization is greater in the Levant “jeem” than its classical counterpart.

Whoever examines the above figure finds out that both “sheen” and “jeem” are strong demoisturized phonemes because of the following:

- 1- Powerful air rushing out of the lungen. It is known that lax phonemes consume more air than plosives so, it maintains resonance till all air is used up. In other words, they are elongated phonemes that extend along with the air flowing out of the lungs (Al- Anani: 58).
- 2- Air escape is never closed: what happens is just narrowing of the escape area and that creates friction leading to demoisturization. But the “sheen” differs from levant “jeem” in three issues: amount of rushing air, escape width, and voicelessness, in addition, air speed in the “sheen” is great. [Al-Ilmiyeh and Isteitieh \(2014\)](#) pointed out that “air speed at” “sheen” articulation mitigates some of the moisture at the place of articulation, so sound in the “sheen” is harsh and dry.” (126).
- 3- Air spreads on a larger area: flat tongue helps air to freely move and spread. The area in the sheen is larger than that of the levant “jeem”.

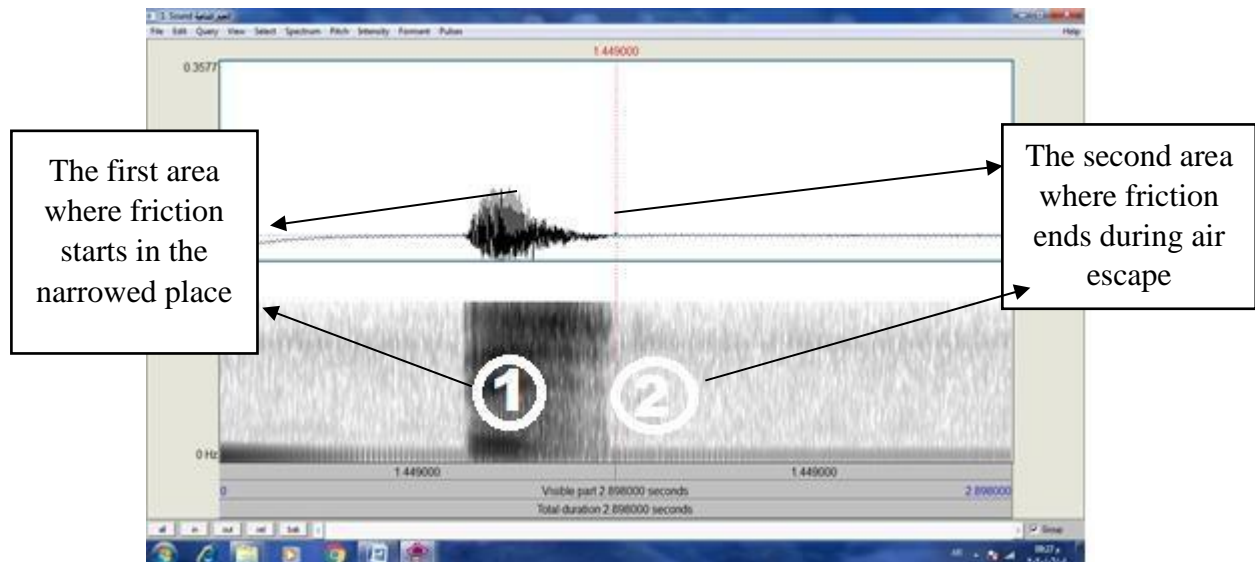
Such a thing can be explained through (PRAAT) program as follows:

First, The sheen



The extension represents the amount of air passing through escape area where sound is created and formed

The figure above shows that air spreads at a large area assisted by manner of articulation. The tongue takes a flat shape, this is what the spread of “sheen” means. The “sheen”, being voiceless, gave air power to move without being hindered by any obstacle except the one it meets at the middle of the tongue. The vocal cords, the first area where the first obstruction for air was supposed to occur, never happens because they are apart allowing air to pass freely.



The ranges of extension of articulating Levant “jeem” is noted through the way air escapes out in a gradual manner. Dark area (1) indicates the beginning of air friction with the narrowed area in the middle of the tongue. This friction disappears in a gradual manner as air moves forward strongly demoistruizing the wet area. Area (2) shows air decrease as it draws nearer to the mouth as a great portion of it leaked outside, not hampered by any obstacle.

If we compare the Levant “jeem” to “sheen”, we find that air spread in the “sheen” is much bigger. Consequently, the area needs a large amount of air and more freedom to move. This is what the manner of articulation of the “sheen” provides: flat tongue and no air obstruction before escape.

Thus, we understand that Levant “jeem” is the strongly demoistruized one, for which it was in articulation close to the “sheen” as the latter spreads more air to create demoistruization ([Al-Seigh:196](#)).

The fourth subject: The Caireen “jeem” /g/

This variation of articulation of the classical “jeem”, /dʒ/ was called by scholars Caireen “jeem” /ʒ/ for it is common in Cairo. It is pronounced close to (Qaf), 21<sup>st</sup> Arabic alphabet. Thus, a word like /dʒməl/ is pronounced /gəməl/. The “jeem” here corresponds to the English phoneme /g/ in go/ gou/. [Bisher \(2000\)](#) elaborated on the mechanism of its articulation saying: “When this variation of “jeem” is articulated, air is completely detained at the back palate when it suddenly bursts out making vocal cords to vibrate in the process of

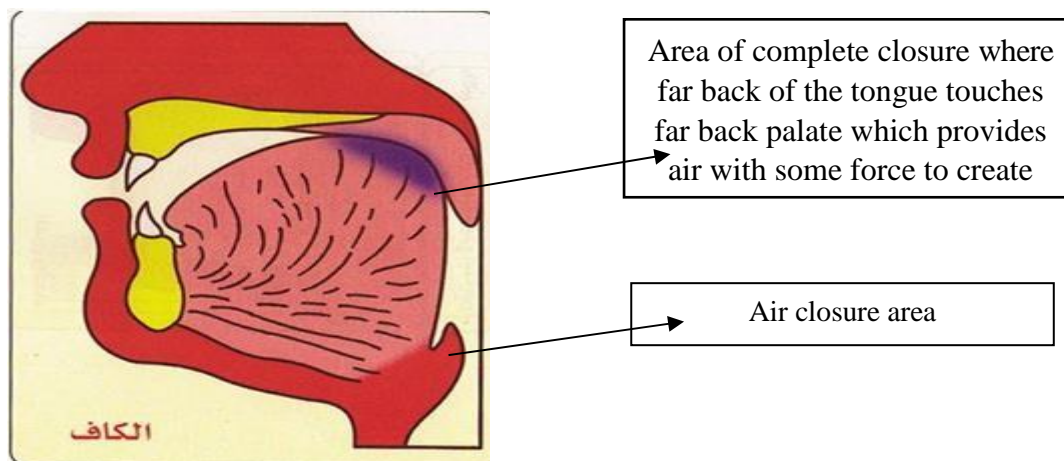
articulation.

This variation of “jeem” was also known to the ancients. Sebawey, for example, talked about the unfavored phonemes in reading saying “the “jeem” that is similar to the /Qaf/ sound with regard to escape. The articulation of each starts from the far back palate (velum) where air is completely detained as a result of far back of the tongue touching the far back palate closing air passage.

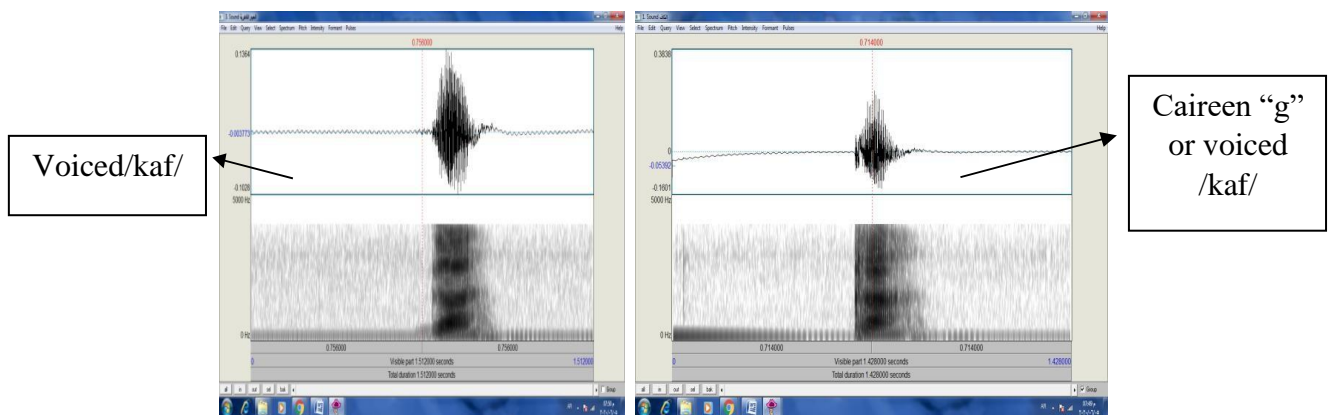
When the escape point is realised, air rushes forcefully and quickly. But still there is a difference between them, the Caireen /g/ is voiced while /k/ is voiceless. Thus, it might be called (voiced k). Bisher: (317), called it the far back stop plosive “jeem”. In that, he was referring to the manner of articulation and the distinctive features for which he called the far back (velar), as it is produced at the far back palate. As for being called stop plosive, that is because air is stopped then bursts which implies that air couldn’t demoiaturize it the way it does with its classical and Levant counterparts for the following reasons:

- 1- Air is completely obstructed, but demoiaturization requires free air movement.
- 2- At the release, air bursts preventing friction needed for demoiaturization.
- 3- It differs from both “jeems”, classical and levant, regarding manner of articulation as it doesn’t allow air to spread out to cause friction. Therefore, it is a plosive phoneme. As for the two “jeems” classical and levant, they are both fricative phonemes for modernists, but lax for the ancients.
- 4- It is a non-continuant phoneme because air escapes in one quick rush and demoiaturization requires air to escape in a continuous manner.

The following picture shows the escape for the phoneme (kaf)/k), and the Caireen /g/- voiced kaf.



To measure the range of air rush and the space the sound occupies, the two phonemes were pronounced more than once through (PRAAT) program to ensure information accuracy. The following pictures were the outcome:



The previous picture shows the similarity between the Caireen jeem /g/ and kaf,

/k/. They both share air rush and the extension of that rush including the waves contained, but they differ in sound vibrations which are higher in the Caireen jeem, due to voicedness resulting from narrowness of the vocal cords through which air passes.

As for demoisturization, they both are free of it which is apparently judged from the manner of articulation in which air escapes in one rush the moment it bursts after closure release and that prevents demoisturization which differs from manner of articulation of fricatives. [Anees \(1975\)](#) pointed out that the classical jeem developed in the Caireen variation as it drew nearer to the far back palate, becomes more tense losing what might be called demoistruization.

## 5. Conclusion

Through the discussion of the three variations of the jeem: the classical (d3), the Caireen, /g/, and the Levant /3/, the researcher came up to the following results:

- 1- Classical jeem is not a compound of friction and explosion.
- 2- Levant jeem is more demoistruized than the classical one for it is closer to “sheen” in air intensity, but differs in being voiced while “sheen” is voiceless.
- 3- Sound demoisturization requires a wet narrow escape with strong air.
- 4- Moisture greatly influences phoneme articulation as it hampers air movement and provides the sound with a certain tone. It also has another function in classical jeem for it helps tip of the tongue to glide forward allowing air flow.
- 5- Caireen jeem (voiced kaf) has no degree of demoisturization as it is produced at far back of the tongue touching the extreme back of the palate detaining air completely behind. When it is suddenly released, it produces a plosive sound devoid of demoisturization.

## 6. Recommendations

Based on findings of the study, the researcher would like to recommend the following:

- 1- To review synonymous terminology adopted by modernists to pin point the minute differences which revealed that the jeem is a stop fricative, not a plosive fricative.
- 2- To study the phoneme affecting articulation passage as air moves and changes manner of articulation through moisture and demoiurization.
- 3- To investigate moisture influence on forming secondary features of plosive and fricative phonemes.
- 4- To organize phonemes ascendingly or descendingly in compliance with the amount of moisture or demoiurization which affect them using modern tools as measurements.

## REFERENCES

- Al-Anani, Mohammed Isaac. (2008). *Introduction to linguistics*. Amman, Jordan: Dar Wael.
- Al-Hamad, & Qadoori, G. (2003). *Phonemic studies for Tajweed*.
- Al-Ilmiyeh, & Isteitieh, S. (2014). Fricative phonemes in Arabic between performance and quantity. *Journal of Human Sciences, Irbid*: Yarmouk University.
- Al-Nuri, M. J. (2007). *Arabic phonology*. Palestine: Jerusalem open University.
- Al-Seigh, A. A. (2007). *Phonemic terminology in Arabic studies*. Damascus, Egypt: Dar Al-Fiker.
- Anees, I. (1975). *Language phonemes*. Cairo, Egypt: Maktabat Al-Nahda.
- Bisher, K. (2000). *Phonology*. Amman, Jordan: Dar Ghareeb.
- Boersma, P., & Weenink, D. (2017). PRAAT: Doing phonetics by computer (computer program). Version 6.0.32.
- Fandarees. (2014). *Language*. Cairo, Egypt: National center for Translation.
- Ibn Manthoor. (1993). *Lisan Al-Arab*. (Arab tongue). Beirut, Lebnon: Dar Saber.
- Ibn Sina. (1982). *Resala Asbab Huduth & Al-Huroof*. (A letter on causes of letter occurrences). Verified by Mohammed Tayyan, and Mohammed Alam, Damascus: Arabic Language Academy.
- Ibn Yaesh. (2001). *Sharh Al-Mifsal*. (the detail explication). Beirut, Lebnon: Dar Al-Kutub Jabal, M. H. (2006). *The abridged in Arabic phonemes*. Cairo, Egypt: Al-adab library.
- Kantino, J. (1996). *Lessons in Arabic phonology*. Saleh Qarmawi, edit. Tunis University.
- Shaheen, A. S. (1985). *On language development*. Al-Risalah institution. (n.p).
- Sibawey. (1983). *Al-Kitab (the book)*. edit. Abdul Salam Haroon. Cairo, Egypt: Al-Khanji Library.