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Extension of Old and Modern Dadds: A Phonological, Descriptive, and Analytical Study

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Abstract

Extension is a characteristic tackled by scholars through study and analysis . The discussion was confined to modern " Dadd" , but they never identified the nature of the old one . This is where the idea of this study stems from . The study tries toidentify the nature of both " Dadds " and how their difference impacts the particular as well as the general features .

Thus the study surveys and discusses the opinions of the ancient and modern scholars . Due to that , the study adopts the descriptive analytical method which at the end showed that extension of the old " Dadd" is solely aerial as air extends in the furrow along with the side of the teeth without any frontal extension of the tongue . As for the extension of the modern " Dadd " , it has two types : aerial seen in the air which forces the tongue to move to the front , and organic seen in the frontal extension of the tip of the tongue .

Key words : " Dadd " . extension . teeth . aerial . organic) "Sheen", "Seen" (Arabic alphabets, organic)

Introduction:

Undoubtedly, any type of science, since its inception passes through stages of development through time. Thus phonology, like other sciences, develops in various aspects some of which are comprehended by creative minds that are able to analyze sounds physically in order to explain the nature of articulation. Other sounds can never be explained by secular law but through what the tongue had inherited from the consecutive generations. Those sounds were influenced by the environment and the community producing specific phonemes among which are the following examples:

1- "Qaf" phoneme: Jabal (2006) mentioned that the Qaf has four types:
   - A- The classical, an upper high voiced and tense phoneme produced when the extreme back of the tongue meets the epiglottis with a complete closure of air stream
   - B- Modern, an upper high voiceless and tense phoneme produced when the extreme back of the tongue meets the epiglottis; it is the "Qaf" pronounced by the educated in Egypt and other countries.
   - C- The Sudanese Qaf which is similar to (Ghein) (17th Arabic letter), an upper voiced relaxed fricative produced when the back of the tongue draws near the epiglottis.
   - D- The rural (Bedouin Qaf), a tense voiced lower phoneme produced when the third part of the back of the tongue touches the upper soft palate.
   - E- "Taa' (Eleventh letter of Arabic alphabets) during the olden days this phoneme was pronounced like today's "Dadd", an emphatic' "Dal" (8th letter). Thus Talal was pronounced Dalal, different from how pronounced today. The old classical "Taa" was an upper tense voiced phoneme. Such a pronunciation is heard in Upper Egypt and Yemen. It went through a certain development which deprived it from voicelessness and led to a different pronunciation as we pronounce it today. "Taa" today is a voiceless emphatic phoneme, it is equivalent to the emphatic "Ta" (Bishr, 2000). It is equivalent to the old emphatic "Dal", according to Seebaweyh. Had it not been for closure the "Taa" it would have been pronounced "Dal" and "Sad" becomes "Seen" and "Thaa'" "Thal" and "Dadd" could have been dropped from speech. (Seebaweyh, D. T).

2- "Dadd" phoneme was pronounced with friction as air is released from either the right or the left side of the tongue. It might be articulated with stream of air released from both sides, but now pronounced emphatically with the tongue touching upper teeth.

This pronunciation dictates a change in some of its features: the change of the movement of articulators from one position to another eventually leads to change in air direction released from lungs toward the glottis.

The "Dadd" has been described as an extended phoneme, a description discussed in many books without an precise explanation on the mechanism of the two pronunciations: the old and modern. Bishr said" we exactly don't know what expansion means" (Bishr, D. T). This is the idea which prompted this research in an attempt to answer the following questions:

1- What does the extension of "Dadd" mean?
2- What does the extension of modern "Dadd" mean?
3- What is the impact of different extensions on the features of both phonemes?
4- What is the difference between the extension of the old and modern "Dadds"?

The nature of this research dictated dividing it into two topics preceded by an introduction and an end with a conclusion and findings. The first topic discusses old "Dadd" with regard to place of articulation, extension, and features,while the second topic focuses on modern "Dadd" with regard to place of articulation, extension, and features as well.

The first topic: Old "Dadd": its place of articulation, extension, features and, place of articulation for the ancients.

Whoever examines books of heritage finds that scholars agreed on a specific mechanism of the articulation of "Dadd", without a definite illustration of what extension meant as seen in the following:

1- Al-Khaleel said that "Jeem, sheen, and Dadd (Arabic alphabets) are oral. (Al-Farahedee)
2- Siebaweyh (D. T) said that the place of articulation of "Dadd" is alveolar.
3- Ibn Jenni, (2000), said that the tip of the tongue and the alveola constitute the place of articulation of "Dadd" which can be articulated from either the right side or the left as needed.
4- Al-Mubarred (D. T) said that the place of articulation of (Kaf, Sheen, and Jeem) is alveola, while "Dadd" contrasts with them as air is released either from the right or left side of the mouth.

From what preceded, we note the following:

1- The "Dadd" is produced by the tip of the tongue touches the alveola with a complete closure which allows air to get released causing an audible friction. Thus, the old described the "Dadd" as a relax fricative phoneme. Seebaweyh said that there are other relax fricatives in Arabic alphabets among which are the following: "Ha", "Haa' ", "Ghein", "Khaa' ", "sheen", "Saad", "Dadd", "zay", "seen", "Thaa' ", "Thal", and "faa' ". (Seebaweyh, D. T). An indication of such alphabets being relax is that scholars didn't include them in the tense phonemes. Ibn Jenni said that the tense alphabets are eight: "Hamza", "qaf", "jeem", "Taa' ", "dal", "taa' ", "baa' ", which are all pronounced in the following combination "ajdattabaqak" and "ajidukatabaqt". (Ibn Jenni, 2000). Kamal Ibn Bishr said that old "Dadd" seemed to combine the two features like the lateral alphabet "Lam" as air is released from both sides of the mouth and the fricative feature. (Bishr, 2000).
2- Scholars all agree to one pronunciation for the old "Dadd" which seems different from todays. When air goes out of the lungs through the vocal chords that vibrate because of air and the passage becomes narrow, the tongue takes two complementary positions: the front part of the mouth closes and the release occurs at either the right or the left side of the mouth or through both. This means that in the pronunciation of "Dadd" air stops for a short period then released changing its direction as happens with "lam:, "noon", and "meem" (Arabic alphabets) Bisher Said when "Dadd" is articulated, air is released from one side of the mouth or from both similar to the articulation of "lam". Thus the "Dadd" sounds to be lateral exactly like the "lam". (Bisher, 2000).

The Mechanism of Extension.

Extension is a phonological term limited to features peculiar to the "Dadd". Ibn Al-Jazery in his famous introduction said" extension is repeated in "ra" and "lam" for "sheen" and "Dadd" should be extended. (Nassar, 1992).

Scholars gave differentdefinitions for the term extension:

1- Kamal Ibn Bishr stated that extension may be interpreted by the extension of air being released from one side of the mouth or from both as explained by the ancients. Thus, "Dadd" is lateral like "lam". (Bishr, 2000).
2- ZakariaNassar said "linguistically speaking extension which means becoming longer is a name given to "Dadd" as air extends till it reaches the point of articulation of "lam". The difference between extension and becoming longer is that extension is in the point of articulation while the other is in the letter (Nasser, 1992).
3- Mohammed Hasan Jabal said what is meant here is that the pronunciation of "Dadd" the tip of the tongue extends from the inception of pronouncing it till the end. (Jabal, 2006). In a statement quoted from (Seebaweyh, D. T), he illustrates how "Dadd" extension stretches till it reaches the point of articulation of "lam" when the tip of the tongue touches the gum, but doesn't come in between the alveolar ridge as the case with "Taa": (Jabal, 2006)
4- Abdul SaboorShaheen said that "extension implies extending the articulation of a certain phoneme till it touches the point of articulation another one. Such a description applies to the old relax "Dadd" in which air is released through the sides of the tongue from both sides, left or right or from both but mostly from the right one. This kind of articulation of the old "Dadd" extends till reaches that of lateral "lam" thus described as extension that some Africans pronounce it "lama". (Malbridge, D.T).

By examining the afore-mentioned sayings, we notice that they move in two trends:

The first sees that extension is implied in the articulation of "Dadd" touches that of "lam" without illustrating the point.

The second sees that extension lies in the air released causing friction, according to Kamal Bishr.

We might say that extension means the need to be longer as a thing was short and needed to be elongated for completion. This applies to the "Dadd" phoneme from two sides: the released air (aerial extension) and articulation (organic extension), each complements the other, but consecutively; the organic precedes the aerial. Air is the force behind organic extension (tip of the tongue extension). It is natural that the tongue is forced to move forward under air pressure. The two types of extension might be illustrated as follows:

First, Frontal Organic Extension

The study described this extension organic, not articulatory as the researcher, by articulation, means point of articulation. Tongue extension doesn't indicate articulation as this occurs through sides of the tongue and teeth.

The tongue plays its role in the process of articulation as an articulator. Organic extension means that the tongue glides to the front a little above the alveola. This process results from the air that forces the tip of the tongue to touch the alveola causing a closure; thus the air finds a release from both sides of the tongue. Such a process precedes aerial extension where air affects the tongue. This type of extension is characterized by moving specifically to the front where the tongue can never extend but to the front.

Lateral Aerial Extension

This means that the air extends to the part touching the teeth when released after the tip of the tongue had a closure resulting in air release from the other edge of the tongue. In this kind of extension the tongue plays an effective role in changing air direction. This extension differs from the previous one in that it changes in relation to the tongue position.

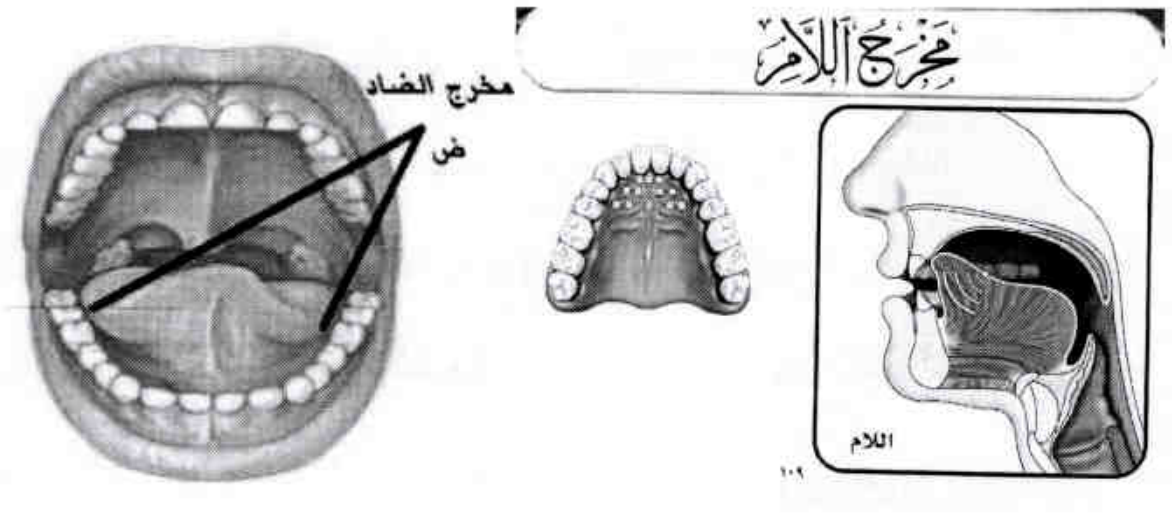
The point of articulation of the “Dadd” is that of “lam” as air escapes the same way it does with the “lam”, but differs in two things:

First, the amount of air and friction are more because the tongue presses more on the upper palate narrowing the space in which air spreads causing more vibration, but quickly escapes from the edge of the tongue touching the teeth which directs air to the narrow passage between them and edge of the tongue. As for the “lam” the position of the tongue differs as it leaves a space for air to relax avoidingtensity when released, but the teeth don’t affect air passage.

Second, air escapes from one side of the tongue. As for “lam”, it has one correct articulation. Ibrahim Anees said the articulation of this phoneme passes through the larynx making vocal chords to vibrate having its course in the pharynx and the sides of the tongue where a hissing sound is audible when air passes through one side of the mouth or through both, the tip of the tongue touches the hard palate preventing air release from middle of the mouth escaping from its sides. (Anees, D. T).

The aerial extension is formed when the tip of the tongue obstructs the large amount of air which escapes from the sides of the tongue having a passage in the lower palate which pushes it forward. Running through the passage has two advantages:

1- Absorbing the large amount of air, as known, the old “Dadd” is fricative and the fricative phoneme needs a large amount of air to create the audible friction.
2- Reducing pressure of the stream of air coming out of the lungs as it touches front teeth to be redirected by the sides of the tongue, thus touching the lateral teeth causing it to move forward. The following pictures illustrate that:



(3) (2) (1)

Picture (1): “lam” articulation.

Picture (2): from the lower edges of the tongue.

Picture (3): “Dadd” articulation.

One can imagine the stages of “Dadd” articulation after air gets into oral cavity as follows:

1- Air rushes out of the lungs making the vocal chords to vibrate because of air pressure.

2- The tongue moves upward in a concave shape pushing air to the upper palate.
3- Air escapes from the edge of the tongue which is completely closed.
4- The tongue redirects air which seeps out from one side of the mouth or from both diffusing the latent power when touching tip of the tongue being closer to the gum.
5- The air changes its direction after the second obstruction with lateral teeth and spreads through the lateral passage of the lower palate side by side with the teeth, thus air extends till released through the mouth.

The Impact of Extension on Features of Old "Dadd"

It is natural that sound features would be affected through the movements of articulators whether those were laryngeal, oral, or nasal. Those features could be divided into two categories: one is related to sound resonance, voiced or voiceless, harshness or softness, hissing. The second is related to the air stream in the articulatory system directed and controlled by articulators. The stops describe air closure which occurs with the alphabet "Ba", the plosive describes air explosion after closure, fricative describes air friction when released. If we want to describe the movement of the articulator, we say that the stop sound is a closed one because closure occurs when two articulators meet. Bassam Baraka said "Arabic stop consonants (or plosives) are formed when the air passage for air coming out of the lungs is totally obstructed, but temporarily, at a certain point in the sound passage. As a result of this air closure, compressed air is suddenly released producing a plosive sound. (Baraka, D.T).

Thus, one can say that sound extension has nothing to do with sound resonance, but it is a feature related to air movement as it touches lateral teeth. The "Dadd" extension lies in its final stage of articulation, at the time air touches the lateral teeth and finds its way out through the lateral parallel teeth.

This type of air extension results in the following features:

1- Friction: it is a feature that explains what happens to air when released producing resonance.Extension dictates freedom of air movement though such freedom is limited to articulation which is a double-fricative sound. This means that the sound passes through two stages in friction: friction with vocal chords producing vibration of voiced sounds and an extended fricative which occurs before the release of air from oral cavity
2- Puffing: it is sound spread in the mouth during articulation. Extension requires free air passage to allow release. Puffing depends on two elements: the presence of a good amount of air and air passage be clear to allow air to pass. Scholars consider puffing a feature of certain phonemes such as: ("Dadd", "Tha'a", "Zay", and "Thal". Anyone who examines the statement realizes that what is meant by "Dadd" is the old one as it has the puffing which shares with the aforementioned phonemes. As for modern "Dadd" it has no puffing when articulated as air is blocked before it bursts and this contradicts with puffing. (Al-Sayegh 2007). Seebaweyh said "there are aspirated phonemes which when stopped, a puff of air is released in their articulation. Such phonemes are "Zay", "Thaa", "Thal" and "Dadd". In their

articulation, aspiration is heard. Some Arabs lower the sound at the articulation and the air is released through the teeth. (Seebaweyh, D.T.).

3- Weakness: when extension occurs and air infiltrates, thisweakens the sound. Tongue movement and reshaping it also weaken the articulation of the phoneme. Seebaweyh said "weak "Dadd" can be articulated from the right or the left side of the tongue, if you want, and that is less than the closure with the tip of the tongue. In the "Dadd" you combine the closure and the release from the point of articulation as you switch from right to left which weakens it, being released from edge of the tongue. Its articulation mixes with others and thus extends when mixed with other letters making it easy to switch to the left side. (Seebaweyh, D.T).

Ibn Yaeesh said "The weak "Dadd" is a phoneme which is difficult for some to articulate so they pronounce it "Taa" as it is produced at the edge of the tongue or they might intend to articulate it as it should, but failed, thus the point of articulation was between "Dadd" and "Thaa'".

4- Hushing: this means that the sound spreads over the tongue producing a hushing sound. (Al-Sayegh, 2000). This is a peculiar feature of the "Sheen" phoneme. Some scholars attributed it to other phonemes. Seebaweyh said "Raa'" (one of the Arabic alphabets) can't be reinforced by "lam" or "Noon" and thus doesn't have the hushing feature except when combined with other phonemes. Only in that case, it may hush in the mouth. (Seebaweyh, D.T). He saw that stop phonemes are more audible than others. This doesn't mean than the hushing phonemes have the extension feature, for example "Raa", "Thaa", "Taa", and "Sheen" are never extended. But the "Dadd"combines the two features extension and hushing, as these features are interrelated; every extended phoneme is extended but never the opposite because air in the extended phoneme doesn't leave through its normal passage but through another one by which it extends and spreads in the new point of articulation. Ibn Jenni said "the"Dadd" has the extension and hushing, but when diphthongized with "Taa", hushing disappears (Ibn Jenni, 2000). Ibn Bishr indicated that what is meant by hushing is relaxation and friction which occur in extending the articulation of "Dadd" (Bishr, 2000).

As for the two features, voiced and emphatic, they apply to sound resonance, not movement and these had nothing to do with extension. The voiced sound is the outcome of vibration of the two vocal chords and stop sound results from tongue shape when rises to the upper palate taking a position to produce suchu a sound as a result of the vibration of the vocal chords. (Steitieh2002). Mohammed Hasan Jabal considers the stop feature to be the strongest tool for emphatic sounds which are of two types: upper high phonemes which are always emphatic and the strongest, while others are not. (Jabal, 2006).

This research disagrees with what Ibrahim Anees claimed that the old "Dadd" was emphatic, but less than the modern one. He adds that original "Dadd", the old one, is less emphatically pronounced than what it is now. The two articulators slowly separate leading to a slower explosion than the sudden one in preparation for a transition from this type of phonemes and what follows from gentle ones. For example, when the old "Dadd" followed by "fat-ha" (letter inflection marker), we feel a transition between the two completely distinguished sounds, (Anees, D.T). Kamal Bishr disagrees with

the opinion that old "Dadd" is emphatic.He says that the old "Dadd"forthe ancients was not emphatic, not plosive but lax. In other words, in modern terminology, fricative. (Bishr, 2000).

Modern "Dadd": Point of Articulation, Extension, and Features

Point of Articulation for the Modern

1- Ibrahim Anees said: "Dadd" is a tense voiced phoneme in which the two vocal chordsvibrate. The air is then obstructed when the tip of the tongue touches the alveola and when the tongue retracts, we hear a plosive sound. This is the Egyptian "Dadd". (Anees, D.T).
2- BritelMalberg said: "Dadd"starts at the point of articulation of "Dal" then the tongue changes shapeto concave and touches the upper palate to produce the "Dadd", (Malberg, D.T).
3- Mahmood Al-Saran Said: "the voiced equivalent for the "Taa" is "Dadd". There is no difference between them except for the first being voiced and the second voiceless. There is no difference between "Dadd" and "Dal" except for the "Dadd" being stop and the "Dal" non-stop. Thus the "Dadd" alveolar, stop, plosive consonant (Al-Saaran, D.T).
4- Bassam Baraka said: "the shape of the tongue in the pronunciation of "Dadd, and Taa" is different from that of "Taa" and "Dal", as the back of the tongue in their articulation rises to the far back wall of the throat.

From what the modern scholars said about the articulation of modern "Dadd", it is made clear that in this articulation the two sides of the tongue touch the teeth in a concave-like shape which makes it narrow for the air to escape. With regard to the stop manner of articulation, the tongue becomes concave in shape touching upper palate with a slight retraction. (Al-Sayegh, 2007).

The formed stop has the following functions:

1- Holds the air stream which makes vocal chords to vibrate creating tension because of two obstructing tools, the first is a movable forcing tool represented by the tongue which completely closes its sides preventing air from escape and forcing it to move to the upper palate, the second tool is stable as represented by the upper palate which increases air pressure moving it to the middle of the tongue.
2- Holds the air stream coming from laryngeal cavity toward the oral one thus enabling it to create the explosion needed for the articulation of "Dadd".

Extension of Modern "Dadd"

From what preceded, it has been made clear that "Dadd" has two extensions: organic caused by tongue gliding to the front because of air force and aerial caused by the longitudinal rush of air into the passage of lateral teeth. The following are noted in the articulation of "Dadd":

1- Organic frontal extension caused by the glide of the top of the tongue to the front till it touches the point of articulation of the "lam" under the influence of air pressure. This extension differs from that of old "Dadd" as the tip of the tongue extends further to the front under the influence of air compressed between tongue surface and upper palate. As for the old "Dadd" the power of air quickly disappears after finding an escape when the tip of the tongue moves away from lateral teeth. Thus air becomes not strong enough to extend the tip of the tongue to the front as it happens with the modern "Dadd".

2- Aerial frontal extension caused by the rush of air compressed in the closure between the tongue and the upper palate. The two extensions are interconnected. The first precedes the second with a portion of a second. When air pushes tip of the tongue to the front which extends carrying air as the escape will be from the front.

   a. As for the old "Dadd", top of the tongue extends to the front and air extends through the passage parallel with teeth. The difference between the two "Dadd" is as follows:

   1- In the old "Dadd" extension is lateral, and the organic one (tip of the tongue) is frontal

   2- In the modern "Dadd" both the organic and aerial extensions are frontal.

The articulation of two extensions in the same area is more difficult than when it is in two different places. It shouldn't be understood that the old "Dadd" isn't difficult, but for the none-native speakers of Arabic the difficulty lies in the ability to direct the tongue in a way by which air can escape from the narrow passage close to teeth. But the modern "Dadd" is difficult even for native speakers of Arabic for being tense with air obstruction, aerial extension and organic, in the point of articulatio.

Features Resulting from Extension

Extension of the old "Dadd" resulted from being fricative, hushing, and weak as the rushing amount of air had been much due to the opening which allowed air to escape without explosion. As for the modern "Dadd", it is tense, stop, plosive as the extension differs and therefore more difficult for the following reasons:

1- The extension of both the aerial and organic occurs in the same place.

2- The compressed air in the closure which pushes the tip of the tongue forward is a plosive one, for the tongue leaves its place on the gum.

   It seems that extension in the modern "Dadd" affects the phoneme only in this feature, being tense, which correlates with the movement of the tongue pressing the closure point.

Conclusion

The study investigated extension in the articulation of old and modern "Dadd". It presented what the ancient scholars said on the issue. It also attempted to present a precise description of what kind of movement happens in the oral cavity which affect extension whether being aerial or organic. As a result, the researcher came up with findings outlined in the following:

1- Extension in the old "Dadd" is lateral aerial and frontal organic.

2- Aerial and organic extensions in the modern "Dadd" are both frontal.

3- Modern "Dadd" is more difficult to articulate than the old one as the two extensions occur in the same place. The two extensions of the old "Dadd" occur in two different areas.

4- Tongue extension can never be but frontal, but that of the air can be lateral as is in the old "Dadd" or frontal as it is in the articulation of modern "Dadd".

5- Air is the cause of extension whether frontal or lateral being able to extend itself and others. But the tongue can't extend by itself for it needs air power to do that.

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