

Phonology and Vowel Sounds in the Qur'an: Perspectives on Classical and Modern Phonetic Rules

Husain¹ (✉) Pascasarjana UIN Alauddin Makassar, Indonesia¹
zakwanakifah05@gmail.com¹

Achmad Abubakar² Universitas Islam Negeri Alauddin Makassar, Indonesia²
achmad.abubakar@uin-alauddin.ac.id²

Muhammad Galib³ Universitas Islam Negeri Alauddin Makassar, Indonesia³
muhammad.galib@yahoo.com³

Amrah Kasim⁴ Universitas Islam Negeri Alauddin Makassar, Indonesia⁴
amrahkasim@yahoo.com⁴

Muhsin Mahfudz⁵ Universitas Islam Negeri Alauddin Makassar, Indonesia⁵
muhsinmahfudz@yahoo.com⁵

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Corresponding Author: ✉ Husain

Article History	ABSTRACT
Received: 27-04-2023 Revised: 1-06- 2023 Published: 31-08-2023	<p>Background: In the science of Qiraat, the problem of vowel reading on letters and words in the Qur'an is still much that has not been revealed, both from the aspect of classical and modern scholarly opinions.</p> <p>Purpose: This study aims to describe and introduce several rules about the process of occurrence of vowel a/i/u in certain words and verses, which are caused by the presence of letters, hamzah, sukun, and ishman, including exploring new ways of analyzing the phonology of modern Arabic vowels based on standard generative theory.</p> <p>Method: This research is literature research. Primary data sources were obtained by al-Našr fi al-Qirā'at al-Islāmiyyah, and several verses of the Qur'an for comparison. Secondary data sources are literature, both in the form of books, journals, and research results related to phonology. Data collection is carried out by documentation techniques, listening, and recording. Data analysis techniques use open coding, then analyzed descriptively using grounded theory.</p> <p>Results and Discussion: This study informs about the rule that the variety of vowel punctuation on some verbs in the Qur'an will change according to the readings attributed to the ten Qira'at. The Vowel sign emphasizes the reading of <i>dhamma</i> (kasrah). The emphasis mark on nouns requires the insertion of <i>dhamma</i> while on verbs and insertion of kasrah. The round distinguishing mark (sifr) is important in turning kasrah into <i>dhamma</i>. Both Kasrah and <i>dhamma</i> have the property of 'Al, but some of them are distinguished by round marks on <i>dhamma</i> and square marks on kasrah. The Vowel sign for classical scholars indicates that the kasrah from the letter "waw" in the verb "qul" moved to the letter "qaf" after hadzf <i>dhamma</i>, then "waw" changed to "ya" to correspond to</p>

the kasrah in front of it. Modern linguists believe that the *dhamma* of the letter "qaf" can be changed to Kasrah and then "waw" removed, so that the existence of the two kasrahs is merged and becomes a long shaddah

Conclusions and Implications: The differences and changes in vowels in phonetics cannot be separated from the debate that exists between classical and modern scholars. This indicates that the problem of qira'at is closely related to diacritical marks that are icons of producing sounds with various characters. This research has implications that having to study Qur'anic verses from a Vowel aspect will require us to see how scholars used to read so that the sounds produced are not only one variant but have a variety of very detailed and interesting reasons to be studied based on modern linguistic theory.

Keywords:*Phonology; Vowel; Modern Phonetics; Classical Phonetic Rules, Qira'at***ABSTRAK**

Latar Belakang: Dalam ilmu Qiraat, persoalan bacaan vokal pada huruf dan kata-kata dalam al-Qur'an masih banyak yang belum diungkap, baik dari aspek pendapat ulama klasik maupun modern.

Tujuan: Penelitian ini bertujuan untuk mendeskripsikan dan mengenalkan beberapa kaidah tentang proses terjadinya vokal a/i/u pada kata dan ayat tertentu, yang disebabkan oleh adanya huruf, hamzah, sukun dan *Isymam*, termasuk mengeksplorasi cara-cara baru dalam menganalisis fonologi vokal bahasa Arab modern berdasarkan teori generatif standar.

Metode: Penelitian ini merupakan penelitian kepustakaan. Sumber data primer diperoleh al-Naṣr fi al-Qirā'at al-Islāmiyyah, dan beberapa ayat al-Qur'an sebagai bandingannya. Sumber data sekunder adalah literatur, baik berupa buku-buku, jurnal dan hasil-hasil penelitian yang berkaitan dengan fonologi. Pengumpulan data dilakukan dengan teknik dokumentasi, simak dan catat. Teknik analisis data menggunakan pengkodean terbuka, lalu dianalisis secara deskriptif menggunakan grounded theory.

Hasil dan Pembahasan: Penelitian ini menginformasikan tentang kaidah bahwa ragam tanda baca vokal pada beberapa kata kerja dalam al-Qur'an akan berubah sesuai dengan bacaan yang dinisbatkan kepada sepuluh Qira'at. Tanda Vowel menekankan pada bacaan *dhamma*/kasrah). Tanda penekanan pada kata benda mengharuskan penyisipan *dhamma* sedangkan pada kata kerja dan penyisipan kasrah. Tanda pembeda bulat (sifr) penting dalam mengubah kasrah menjadi *dhamma*. Baik Kasrah maupun *dhamma* sama-sama memiliki sifat 'Al, namun beberapa di antaranya dibedakan dengan tanda bulat pada *dhamma* dan tanda persegi pada kasrah. Tanda Vowel bagi ulama klasik menginformasikan bahwa kasrah dari huruf "waw" pada kata kerja "qul" berpindah ke huruf "qaf" setelah terjadi hadzf *dhamma*, kemudian "waw" berubah menjadi "ya" agar sesuai dengan kasrah di depannya. Sedangkan bagi para linguis modern meyakini bahwa *dhamma* dari huruf "qaf" dapat berubah menjadi Kasrah dan kemudian "waw" dihapus, sehingga keberadaan kedua kasrah tersebut digabung dan menjadi shaddah yang panjang.

Kesimpulan dan Implikasi: Perbedaan dan perubahan Vowel dalam ilmu fonetik tidak lepas dari perdebatan yang pajang antara ulama klasik dan modern. Hal ini mengindikasikan bahwa masalah qira'at sangat berkaitan dengan tanda diakritik yang menjadi icon penghasil bunyi dengan aksara yang beragam. Penelitian ini berimplikasi pada keharusan mempelajari ayat-ayat Al-Qur'an dari aspek Vowel akan mengharuskan kita untuk melihat kembali seperti apa para ulama dulu membaca, sehingga bunyi-bunyi yang dihasilkan tidak hanya satu varian, namun memiliki ragam alasan yang sangat detail dan menarik untuk dipelajari berdasarkan teori linguistik modern.

Kata Kunci*Fonologi; Suara Vokal; Aturan Fonetik Klasik dan Modern, Qiraat*



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INTRODUCTION

The number of studies on the phonology of the Qur'an causes the Qur'an to be more unique to be examined both in the aspect of reading and writing. These two aspects are always related when viewed from the aspect of qira'at science which is oriented towards the birth of sounds and reading variants.[1] However, the earlier claimants did not obtain detailed information about articulation, and phonological rules, which are in harmony with the study of modern linguistic production.[2], [3], [4], [5]

Through this, it can be observed the relationship between the study of Qur'anic recitation and generative phonology at the level of description, interpretation, and formulation of rules. Generative phonology is part of transformational generative syntax, and like syntax, generative phonology operates at levels ranging from underlying representation to sound representation[6], [7], [8] Generative phonology uses adjustment rules to obtain the appropriate surface or phonetic representation, and morphology is inseparable from phonology in generative phonology.[9], [10] Both are studied side by side, in which morphological and lexical inflections are represented as phonological units that undergo a linear arrangement, each part consisting of a set of distinctive features that are universal and applicable to all languages.[9], [10]

The essence of language is the sound produced by the human voice. These sounds form a sound system that eventually becomes language sounds and when agreed upon with a particular community of human life they form a particular language structure. Human voice instruments from different nations will produce different sound systems, such as the Arabs who formed Arabic as a means of communication.[11]

Each language is produced by the distinctive voice apparatus of a particular nation and of course, can be learned by other nations with different languages. For this reason, it is important to examine whether the language of the Qur'an which has a variety of qira'at has basic rules that cause vowel sounds to be more varied.[12], [13]

The rules of harakat in the recitation of the Quran are divided into mandatory and elective. The first type consists of mandatory phonological rules applied in all ten readings. In this paper, researchers will focus on phonological rules mentioned in some Qiraat that are popularly used in Indonesia.[14] The second type of rule that we will discuss in this paper is an optional phonological rule that is optional to apply in all readings.[15], [16], [17] Some readers apply it, while others do not apply it in their reading. In addition, to the many varieties of qiraat that affect phonological aspects, researchers try to analyze optional phonological rules about the meeting of two letters sukun and ishmam. Harakat is considered an important element in the recitation of the Quran, as it contributes to achieving the linguistic and phonetic wonders of the Quran. This research will describe the formulation of Vowel rules in the Qur'an based on classical and modern phonological studies based on standard generative theory and its continuation in the works of Chomsky and Halle 1968, Sanford Schane 1973, and Michael Pram 1990.[18], [19]

This study aims to analyze the different harakats in the Qur'an according to modern phonetic science, to understand the reasons for variation and determine their impact on the text of the Qur'an. The significance of this study is to study the basics of modern phonetics and its application in Arabic, analyze the differences in harakat according to modern phonetics so that the results of this research become academic recommendations to improve the correct pronunciation of harakat and recitation of the Quran based on the analysis of Qira'at science and modern linguistics.

LITERATURE REVIEW

1. Qur'anic Phonology and Modern Linguistics

The science of sound appeared among the Arabs in the second century of the Hijri in the atmosphere of civilization that was joyful at that time, literary, rhetorical, and critical knowledge. Then the science of tajweed was born to seek an objective interpretation of the manner and modality of pronouncing the text of the Qur'an according to the readings of each individual on the one hand and according to the decisions and other ways to combine these readings on the other.[20] Thus the scholars of tajweed and Qira'at endeavored to follow up the findings of linguists by adding new studies related to the Qur'an, although these additions followed the same foundation laid by linguists such as Al-Khalil ibn Ahmad Al-Farahidi and his students Sibawaih and later Ibn Jinni.[21]

The majority of linguists have specialized in the term phonology as the study that describes and classifies the phonemic systems of a particular language. This understanding is in line with Martinet's assertion that phonology is the study of the phonemic elements of a language, and the classification of these sounds according to their function in the language.[22] Morris Halle also gave the understanding, that phonology is a scientific branch that discusses speech sounds as structural units of language.[23] Phonology is also defined as the science that studies functional sounds in certain language structures in terms of their nature, quality, and semantic function, or in other words the science that studies the function of semantic sounds in a word and sentence structure in a language.[24]

Knowledge of modern linguistics is what helps us to interpret the causes of some sounds or all of them so that they can become a decree without change. In modern linguistic science, the sounds of language are closely related to acoustic equivalence phonetics (التعادل الأكوستيكي).[25] Even the discussion of sound and its studies today is a source in the field of acoustics because it can help investigators with historical phonology. In addition, the researchers identified sounds in phonological and physiological principles. Phonological analysis from the aspect of techniques and methods as well as in terms of the relationship of studies with certain intervals or periods that are historically considered descriptive phonetic studies or prescriptive/normative phonetics.

Normative phonetics means the limitation of certain rules and emphases for pronouncing a word (الجيد) for a language that must have rules by describing the word according to accepted standards in the field of sound science and according to the sound produced by the speech apparatus (articulacy).[26]



1. Vowel and Qira'at

Vowels in Arabic are expressed by harakat (dashes).[27] Harakat it has three kinds of shapes, namely First, the one-line mark above the letter is named Fathah. Secondly, the dash under the letter is called kasrah. Third, the sign that is above the letter is called *Dhammah*. These three vowel

forms are short vowels fathah: /a/, kasrah: /i/ dan *Dhammah*: /u/. [28] While long vowels are characterized by the placement of short vowel signs before letters:

Vowels	Sign	Example	Vowels	Sign	Example
Long	ا	هَـ	Fathah/Short	A	كُتِبَ
Long	ي	هِيَ	Kasrah/Pendek	I	بِسْمِ
Long	و	هُوَ	Dhumma/Pendek	U	كُتِبُ

The formation of long vowels in the Arabic language is carried out by placement harakat fathah before the letter Alif for long vowels /a:/, kasrah before the letter Ya for long vowels /i:/ and *Dhammah* before the letter Wau for long vowels /u:/. These are the three forms of short vowels /a/, /u/, /i/, and long vowels /a:/, /u:/, /i:/ which Arabic has.

Vowel types are also distinguished based on tongue movements, both tongue movements up and down and targeted at lip movements, both lip movements that open and close, while the Vowel variety is closely related to the science of qira'at.

The science of qiraat is a discipline that studies the schools and views of Qur'anic recitators who are quoted mutawatir along with knowledge about the narrators of the reading. The science of tajweed is the study of how to read the Qur'an properly and correctly, make letter sounds from the origin of the place of exit (makharrij) according to the nature/character of the letters, and know where to stop reading and start again. Of these two disciplines of Qur'an recitation, this article centers on the discussion of the science of tajweed which discusses makharijul huruf.

Qira'at is science birriwayah, i.e. obtained by talaqqi musyafahah, and continues to connect up to the first source, namely the Holy Prophetsa. However, this does not mean that qira'at studies do not contain dirayah knowledge. Because the Holy Prophetsa taught the Qur'an to the Companions so that it reached the last recipient or disciple there must be a socio-cultural surrounding it. So what is meant by birriwayah is the reading of the Qur'an which has many varieties. [28]

In general, Qira'at has many variants, The popular one is known as qira'ah seven which Imam Ibn Mujahid documented in Kitâb al-Sab'ah fi al-Qirâ'ât Because it only took qira'at continued (sanad) which was popular at that time. [29] The restriction comes with the threat of penalties for those who use qirâ'ât In addition to the seven in question. However, Ibn Mujâhid was not exempt from the counter-response. The work that lists seven qira'at imams with more than two narrators for each imam led to the birth of the book "al-Taisîr" by Abû 'Amr al-Dâni (d.444/1052), the Andalus scholar who chose only two narrators for each qira'at imam. It was this book that was used as the main reference by Imam al-Shathibi (d.590/1193) in compiling the book in the form of a nadzam entitled "Hirz al-Amâni wa Wajh al-Tahâni" Popular with nazham "Syâthibiyyah". [30] This book is the reference of the majority of scholars of the variety of qira'at al-Qur'an to date.

Table 2. Qira'ah Seven and Ten

No	Reader	Narrator
1	Imam Nafi' (70 H-169 H)	Qalun (120 H-220 H) dan Warsy (110 H-197 H)
2	Imam Ibnu Katsir (45 H-120 H)	Al-Bazzi (170 H-250 H) dan Qumbul (195 H-291 H)
3	Imam Abu 'Amr (68 H-154 H)	Ad-Dury (150 H-246 H) dan as-Susy (w 261 H)

4	Imam Ibnu 'Amir (21 H-118 H)	Hisyam (153 H -245 H) dan Ibnu Dzakwan (173 H-242 H)
5	Imam 'Ashim (w 128 H)	Syu'bah (95 H-193 H) dan Hafsh (90 H-180 H),
6	Imam <i>Hamzah</i> (80 H-156 H)	Khalaf (150 H-229 H) dan Khallad (119 H-220 H)
7	Imam Al-Kisai (w 189 H)	Abul Harits (w 240 H) dan Ad-Dury al-Kisaiy (w 246 H)
8	Imam Abu Ja'far (w 128 H)	Ibnu Wardan (w 160 H) dan Ibnu Jammaz (w 170 H)
9	Imam Ya'qub (w 205 H)	Ruwais (w 238 H) dan Rauh (w 234 H/235 H)
10	Imam Khalaf al 'Asyir (150 H-229 H)	Ishaq (w 286 H) dan Idris (w 292 H)

METHOD

This research is a literature research. Primary data source obtained *al-Naṣr fī al-Qirā'at al-Islāmiyyah*, [31] and several verses of the Qur'an in comparison. Secondary data sources are literature, both in the form of Arabic phonology books, journals and research results related to phonology. Data collection is carried out by documentation techniques, listening and recording both from the perspective of classical and modern linguists. Data analysis techniques use noting techniques, with an open coding system, then analyzed descriptively using grounded theory namely phonological vowels and qira'at science which is more specific in aspects, hamzah, sukun dan *Iyyam*. [32]

RESULT AND DISCUSSION

a. The Phonological Process of the Qur'an on Vowel Hamzah (Inserts)

In Arabic, the rule of silence/sukun states that Arabs do not begin words with consonants. This means that the root of the word in Arabic does not contain the consonant order at the beginning of the word. Hal ini berbeda dengan beberapa bahasa Indo-Eropa seperti "travail-Perancis", atau "spring- Inggris ". Arabic solves the consonant problem by inserting the letter hamzah. As Sibawaih says, "The basis in Arabic is that words begin with letters hamzah," and it is known that imperative verbs in Arabic derive from present-form verbs by omitting present-form markers. [32] This means the verb conjugation begins with (ي، ن، ء، ت). This results in root words starting with successive consonants, as in verse:

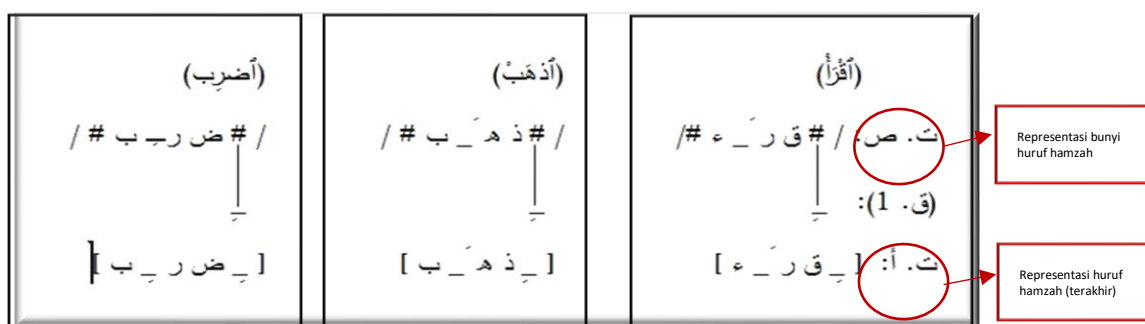
Table 3. Vowel Hamzah Insert Process

Thaha: 42	Al-Baqarah: 60	Al-Alaq: 1
أَذْهَبْ إِلَى فِرْعَوْنَ	وَاضْرِبْ بَعْصَاكَ الْحَجَرَ	اقْرَأْ بِأَسْمِ رَبِّكَ

To overcome this, the letter *hamzah* is inserted according to the rule of "*Swanat*", which can be formulated as follows:

$$\text{س س} \text{ - / \# - } \text{---} \text{ -} \text{ (ق.1): } \text{٢}$$

This rule states that the letter *hamzah* must be inserted before each root containing sequential consonants. Based on this rule we can know that the imperative verbs mentioned above are based on their phonetic representations, so the insertion of the vowel sound in the *hamzah* can be done for the three verses above, as follows.



Picture 2. Vocalization Process with *Hamzah Insertion*

1. The Phonological Process of the Qur'an on Converting Vowel Letters into *Dhamma*

The present tense form is removed when deriving an imperative verb from the present tense verb. There is another rule in Arabic relating to this case, where the present tense forms, in this case, in pattern *يعفل*, like *يخرج* - *خرج*, *يكتب*, *يكتب*, *يدخل* - *دخل*. If we want to get the imperative form of this verb, we remove its present tense and get a verb consisting of two consonants followed by *dhamma*. After adding the letter "Alif", another rule is applied to convert this vowel into *dhamma*.

Arabs in their language prefer the transformation from vowels to *dhamma*. This can be understood from Sibawayh's words: "Know that a continuous alif is always in the form of *kasrah*, unless the third letter is pronounced with *dhamma*, then it is pronounced with *dhamma*. This is what you say, "...أفئ...". Because you bring Alif closer to *Dhamma*, even though between the two there is only a consonant, namely *Kasrah* followed by *Dhamma*. They want the action from one aspect. [33] It is known in contemporary phonetic literature as vowel alignment.

It can be inferred from the words of Sibawayh that the vowel at the beginning of the root word with two consecutive consonants is *kasrah*. However, this *kasrah* turns into *dhamma* if the imperative form has *dhamma* on the letter 'ayn as in the example: "أُخْرِجْ، أُدْخُلْ، أُكْتُبْ." The phonetic rules that turn *kasrah* into *dhamma* in this context can be formulated as follows:

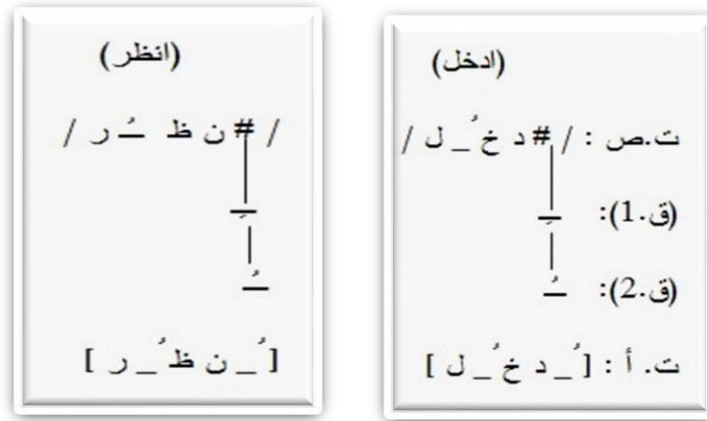
$$(ق. 2): \text{---} \leftarrow \text{---} / \text{---} \# \text{---} \text{س س} \text{---}$$

This rule states: Change the letter *kasrah* to *dammah* at the beginning of a word that starts with two consecutive consonants, then followed by the letter *dammah*. Based on this rule, we can get imperative verbs such as the following verse:

Table 4. *Dhammah Vowel Processing*

al-Hijr: 46	Yusuf: 9	al-An'am: 24
ادخلوها بسلام آمين	أقتلوا يوسف	انظر كيف كذبوا

According to this rule, we can derive these two verses from their phonetic representations in the following way:



Picture 3. The process of vocals becoming *dhummah*

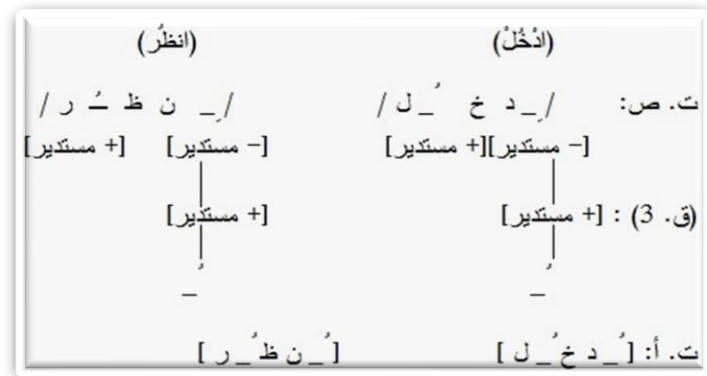
The question we can ask here is, what features turn kasrah into a dammah with trilateral imperative verbs in Arabic? Taking into account different phonetic features, we note that kasrah and dammah have the same height features and differ in rounding features. Therefore, the feature that turns kasrah into dammah when the second consonant is rounded is the distinctive (round) feature associated with dammah.

Based on this assumption, we can propose phonetic rules in a more specific and visual form than rule 2 as follows:

$$(ق. 3): [- \text{ مستدير}] + [\text{ مستدير} / \# \text{ س س}] + [\text{ مستدير}] + [\text{ فعل الأمر}]$$

(q. 3): (round) / # __ س س (round) trilateral imperative verb

In its non-visual nature, this rule states that a movement that is not rounded turns into a movement with a characteristic (rounded) if the second consonant is followed by a movement with a characteristic (rounded) in the imperative verb. Based on (q. 3), we can obtain "ادخل" and "انظر" as follows:



Picture 4. Vowel U Process on *Hamzah Sukun*

The ten Qira'ats do not apply this phonetic rule in the recitation of the verse "أوتوني" (Al-Ahqaf: 24), which means they do not convert kasrah into dammah even though there is a round letter (ت): ta that follows it. If we apply (Q.S. 3) to this verse, then the letter *kasrah* at the beginning of the word should change to dammah, but the ten readings do not make that change. The reason for not changing kasrah to dammah at the beginning of the word (أوتوني): take me goes back to the original movement of the letter (ت) i.e. (أيتوني) (أيتوني). Its phonetic representation is

as follows:

| ء ت ي و + ن ي |

The letter ي : (yaa) was removed because it was difficult to pronounce and did not correspond to the dammah. So, the ten readers recite (ايتونى): bring me) with kasrah at the beginning of the word to honor the original letter (ت) of the letter (ت) : (ta). Thus, the phonetic representation of ايتونى is as follows:

| ء ت ي و + ن ي |

1. Meeting letters sukun with letter sukun The Hidden

Referring to the words of Ibn Ya'ish, "Know that the law of origin in the meeting of two letters sukun is to move the first sukun letter with kasrah (i.e. the short vowel 'i'), as in the phrase 'Address al-Jariyah' (the girl stands). This rule does not change except for certain reasons. They included the letter dammah (i.e. the short vowel 'u') in the sentence 'قالت اخرج...' (He said, 'Get out'). This is because it follows the dammah of the letter 'ta' in 'قالت' (he said) and the dammah of the letter 'ra' in 'اخرج' (come out). It can be understood from the words of Ibn Ya'ish that the letters kasrah are hidden when two letters sukun the meeting must be transformed into a dammah.

1) Inclusion of Kasrah Letters

The five scholars of Qira'at, 'Asim, Abu 'Amr, Hamzah, Ya'qub, and Khalaf, did not apply Ibn Ya'ish's statement above and chose to include kasrah when the two letters of sukun meet. They read as follows:

Table 5. Kasrah Vowel Processing

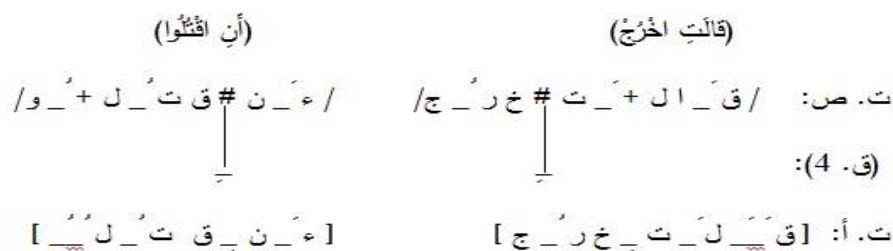
al-Isra: 110	Yusuf: 31	an-Nisa: 66	an-Nisa: 67	al-Muzzammil: 3	Fussilat: 46
قُلْ اَدْعُوا اللّٰهَ	قالت اخرج	اَنْ اَقْتُلُوا	'اَوْخَرُجُوا	اَوْ اُنْقَصْ	ولقد
	علمين	انفسكم			استهزئ

Table 5 above, shows that we should include Kasrah when two sukun letters meet, and this is what we understand from the words of Ibn Ya'ish, who says, "Some people move with Kasrah only. They said, 'اذهب' and they changed the letter 'ba' to *sukun* and ذ the second being *sukun* because the connecting *hamzah* is discarded in the middle of the word, such as (اضرب الرجل) "hit the man" and (اضرب ابنك) "Beat your son". The vowel rules that include the letters *kasrah* when two letters *sukun* meet, can be visually formulated as follows:

(ق. 4): ء ← / س _ # س س _
 في قراءة: عاصم، وأبي عمرو، وحمزة، ويعقوب، وخلف

In its non-visual form, this rule includes *kasrah* between two words, with the first word ending with a consonant and the second word starting with two consecutive consonants. This applies to the readings of 'Asim and those who agree with him. Based on this rule, we can take an

example from what has been mentioned as follows:



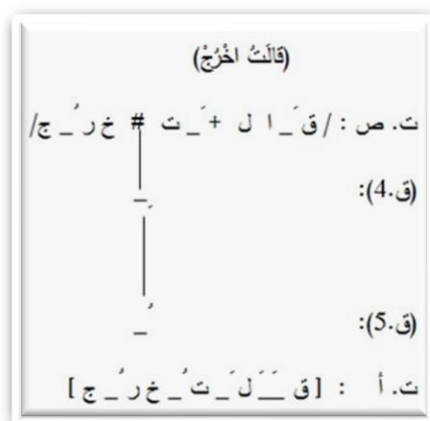
2) Changing *kasrah* letters to *dhammah*

Some famous qurra' (qira'at experts), such as Ibn Kathir, Nafi', Ibn 'Amir, Al-Kisā'i, and Abu Ja'far agreed with Ibn Ya'ish that the first letter of the letter *sakinah* (*sukun*) should be read with *dammah* in the following verses:[34]

Table 6. Process of Converting *Kasrah* to *Dhammah*

al-Isra: 110	Yusuf: 31	an-Nisa: 66	an-Nisa: 67	al-Muzzammil: 3	Fussilat: 46
قُلْ ادْعُوا اللَّهَ	قَالَتْ اخْرِجْ عَلَيْنَ	أَنْ أَفْتُلُوا أَنْفُسَكُمْ	أَخْرِجُوا	أَوْأَنْقُصْ	وَلَقَدْ اسْتَهْزِئْ

Based on Ibn Ya'ish's analysis of this phonetic phenomenon and the reciters who followed it, we can suggest the following phonetic rule: This rule, in its abstract form, states that *kasrah* should be transformed into *dammah* when it appears between two words where the first word ends with the letter *sakinah* and the second word begins with two letters *sakinah* which is sequentially followed by *dammah* in the readings of Ibn Kathir, Nafi', Ibn Amir, al-Kisā'i, and Abu Ja'far only.[35]



Picture 5. Process of converting *kasrah* to *dhammah*

There is agreement among the ten Qur'ans to include the letter *kasrah* after the last wawu in the first word, although there is a *dammah* letter that appears after the first waw and a waw that follows it in the second word, as seen in the following Qur'anic verse:

Table 7. Phonetic Representations of Verses

Al-Muzzammil: 4	At-Taubah: 51	Al-Isra: 85
ورتل القرآن ترتيلا	وعلى الله فليتوكل المؤمنون	قل ادعوا الله

The phonetic representation of this verse is as follows:

/وَرَّتْ لِي لِي لِي + قُرْءَانِ/

Classical linguists, however, included *the letter kasrah* after the letter *lam* in "ف لي ت وكل", also the phonetic representation of this verse is as follows:

/فَ لِي لِي لِي + وَيَكْفُوكَ لِي لِي + مَمَّ + مَمَّ + وَيَكْفُوكَ لِي لِي + وَيَكْفُوكَ لِي لِي + وَيَكْفُوكَ لِي لِي/

The agreement of the ten qurras' to include the letter *kasrah* in this verse and not follow it with the letter *dammah* is due to the nature of the second word in these verses: "القران", "المؤمنون", "الروح", which belongs to the category of nouns, not verbs. All the examples mentioned by Ibn Ya'ish are limited to verbs, not nouns. Based on these observations, we can propose two phonetic rules as follows:

(ق. 6): Ø ← / س س # س س [+ اسم]

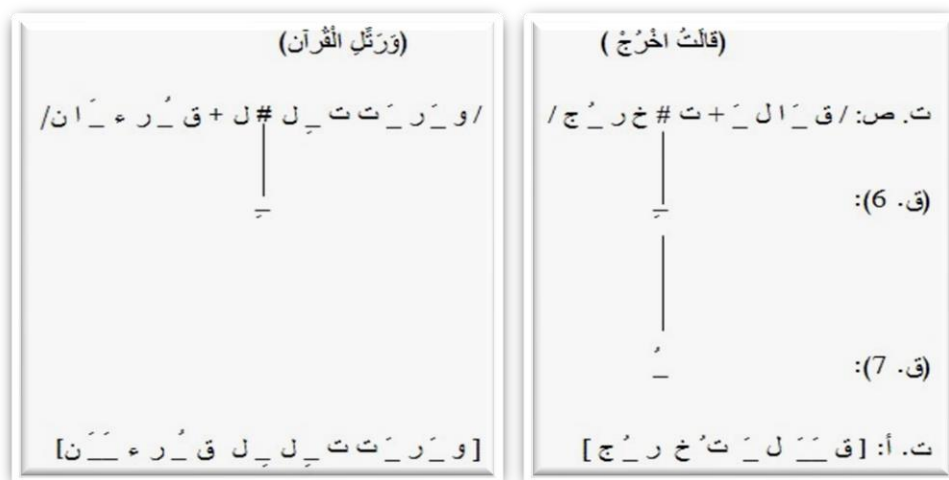
في قراءة: ابن كثير، ونافع، وابن عامر، والكسائي، وأبي جعفر

This rule, in its abstract form, states that we should include *kasrah* if it appears between two words where the first word ends with the letter *sakinah* and the second word, which has the nature of *kasrah*, begins with two consecutive *sakinah* letters and is followed by *dammah*, as found in the readings of Ibn Kathir, Nafi', Ibn Amir, Al-Kisā'i, and Abu Ja'far.[36] This rule also, in its abstract form, states that we should change *kasrah* to *dammah* if it occurs between two words where the first word ends with *sakinah* and the second word, which has the nature of *kasrah*, begins with two consecutive *sakinah* and is followed by *dammah* in the readings of Ibn Kathir, Nafi', Ibn 'Amir, Al-Kisai, and Abu Ja'far only. By the rules of *tasydīd* (pronunciation) which stipulate the inclusion of the letters *kasrah* after the *laam* letters in the words. Also by this rule that, in its non-visual nature, states *bahwa huruf kasrah diubah menjadi damage* when between two words, with the first word ending with a consonant and the second word marked with *tasydid*, starting with two consecutive consonants and followed by *dhamma*. It is found only in the readings of Ibn Kathir, Nafi', Ibn Amir, Al-Kisai, and Abu Ja'far.[37]

(ق. 7): Ø ← / س س # س س [+ فعل]

في قراءة: ابن كثير، ونافع، وابن عامر، والكسائي، وأبي جعفر

This rule, in its non-visual nature, changes *kasrah* to *dhammah* when it appears between two words, with the first word ending with a consonant and the second word, marked with *tasydid* [+ verb] beginning with two consecutive consonants followed by *dhammah*. It is found only in the Tafseer of Ibn Kathir, Nafi', Ibn 'Amir, Al-Kisai, and Abu Ja'far. Based on rules 6 and 7, we can conclude from the words of Allah, "قَالَتُ أَخْرَجُ" and "وَرَتِلِ الْقُرْآنَ" as follows:



Picture 6. Processing Phonetic Representations of Verses

b. Phonology on the *Isymam* Vowel

Isymam is defined as putting the lips together as if intending to pronounce the dhamma without actually voicing it, which indicates that the movement being omitted is dhamma without leaving any audible marks. Ibn Al-Jazari defines it as "an indication of movement without vocalizations." Some scholars say that it means "putting the lips in the dhamma position when pronouncing them." Both meanings are the same, and the indication only occurs after the letter stops.[38] Arabic linguists generally agree that the difference between hamzah and fathah is in the clear lip position of the dhammah, not in the kasrah and fathah.

In addition, it is formed based on beauty, which is absent in the letters kasrah and fathah. The lips are separated in the letters fathah and kasrah, while in the letters dhammah, the two are fused, which makes it easier to signal by turning the lips on the letters fathah, alif, kasrah, and yaa. Thus, the shape of the lips expresses this type of movement fully. Therefore, the justification for the absence of *Ismām* in an open or accusative (major) fathah, kasrah, or yaa is the absence of a role of the lips in these cases supports this view by hypothesizing that dhammah is a round movement, and phonetically, characterized by stretching and rotation of the lips, leading to the lengthening of the posterior oral cavity and narrowing anterior opening.

Isymam appears in the readings of Al-Kisai, Ruways of Ya'qub, and Hisham of Ibn Amir when used with trilateral verbs formed on passive verb types. We know that the vowel of the passive verb is kasrah, and kasrah is the brother of yaa, not the brother of waw. Therefore, waw was changed to yaa to equate kasrah with the passive verb vowel of the trilateral verb.

If waw appears in the vowel of a passive verb from a trilateral verb, it changes to yaa when forming a passive verb. Ancient grammarians such as Ibn Jinni believed that the kasrah on waw passed to the next consonant after removing the dhammah. Later, waw changed to yaa to match the kasrah that preceded it (Ibn Jinni, 1988). Ibn Jinni agrees with what al-Astarabadi (died 686 AH) and Al-Azhar (1998) conclude that waw turns into yaa if it precedes kasrah. This is because, in Arabic, the pronunciation between kasrah and waw is considered difficult, so waw changes to yaa as a form of assimilation with kasrah that follows:

قَ وِل ← قَوْل ← قِيل

The aforementioned Qira'at scholars recite the mentioned consonant, which is a long decapitated consonant, with Isim to indicate that the consonant was originally pronounced with dhammah. However, the dhamma is eliminated by changing waw to yaa, as in the example, the word of Allah:

Table 8. Process of converting *waw* into *yaa*

وَحِيلَ بَيْنَهُمْ وَتَقْوَاهُمْ إِلَى الْجَنَّةِ سَيِّئْتُ وَجُوهَ الَّذِينَ كَفَرُوا قِيلَ ادْخُلِ الْجَنَّةَ

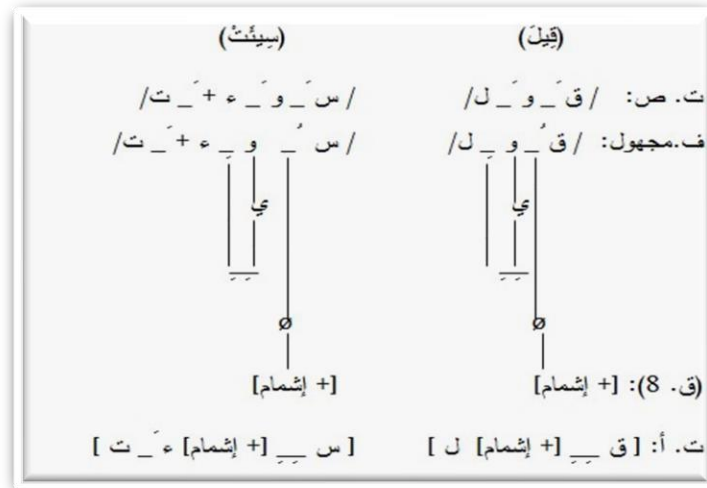
An example of the above verse snippet is illustrated in the following phonetic representation

/قِ ي ل / أصلها /قِ و ل / ، /س ي ء + ت / أصلها /س و ء + ت / ،
 /س ي ق / أصلها /س و ق / ، /ح ي ل / أصلها /ح و ل / .

The articulation that occurs in the movement is the adoption of the position of the tongue when pronouncing the letters *kasrah* or the letters *madd* along with the rotation of the lips. Based on these phonetic facts, we can suggest a phonetic rule formulated in visual form as follows:

(ق. 8): \leftarrow [+ إشمام] / س ي [+ فعل ، + أجوف واوي ، + ميني للمجهول]
 في قراءة: الكسائي، ورويس عن يعقوب، وهشام عن ابن عامر

This rule, in its non-visual nature, states that consonants followed by the letter ya' with *i'jam*. [39] when vowels are removed due to assimilation of *kasrah* and *ya'*. Based on this rule, we can derive the following verbs as follows:



Picture 7. Processing of Isymam

c. Vowel in Qiraat Hafs of Ashim

The rule of I'jam occurs in the sentence تَأْمَنَّا (Q.S: Yusuf: 11), because of the omission of vowels between the same consonants, namely the double letters in this verse. I'jam is used to

indicate that the vowel movement is present initially before the combination of successive double letters on its assimilated double, which represents the phenomenon of idgham. Idgham is one of the distinctive sound phenomena in Arabic.

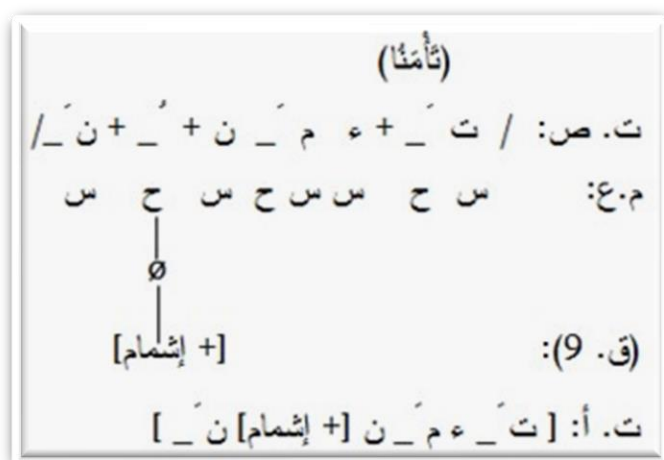
The connecting principle in autosegmental phonology is one of the principles proposed by McCarthy in removing vowels between identical consonants.[40] The type of connection mentioned in this theory is called multiple linking. Multiple pollination entails the linking of one prosodic element to more than one consonant or gesture in the metric system and is therefore also referred to as one-to-many. Thus repeated consonants are connected, as in phrases (وإذا مس الإنسان) (الضر) (Yunus: 12), The original form is (مَرَّ) or (مَرَّ) and the original form is (مَرَر) or (مَدَّ) and the original form is (مَدَد), (عَدَّ) and the original form is (عَدَد) and so on.

ق. 9: ← [+ إشمام] / ن _ ن

It seems that Imam Hafis did not limit the application of this principle to his *mubtada'* and *lām* only, but also applied it to the *lām* of the double verb and its accompanying clitic, as in the phrase (تأمنا) which can be phonetically represented as follows:

ت _ م _ ن _ ن _ + ء _ م _ ن _ ن _ + ء _ ن _ / أصلها / ت _ م _ ن _ ن _ + ء _ م _ ن _ ن _ + ء _ ن _

Hafis uses *hamzah* in this example because the harakat removed here is *dhamma*, not bold, as in verbs that have double letters and *lām*.



Picture 8. Processing of Isymam (La Ta' Manna)

CONCLUSION AND IMPLICATIONS

Formulating an organized phonetic rule for Vowel sound changes based on modern phonetics shows that the *Harakat* in some verbs in the Qur'an changes according to the different readings of the ten Qira'ats. Short vowel marks play a major role in distinguishing between *harakat* and sound (*dammah/kasrah*). The emphasis mark on nouns requires the insertion of *dammah*, while on verbs it uses the insertion of *kasrah*.

Ancient scholars, such as Ibn Janiyy, believed that *Kasrah* from the letter "waw" in the verb "qul" moved to the letter "qaf" after the abolition of *Dammah*, then "waw" changed to "ya" to correspond to the *kasrah*

in front of it. However, modern linguists believe that the Dammah from the letter "qaf" changed to *Kasrah* and then "waw" was removed, so the two *kasrahs* merged and became a long *shadadab*. This statement confirms the confusion in the hollow 'waw' based verb problem for passive verbs. The earlier scholars were more correctly based on the removal of the letters *dammah*. However, the *kasrah* in the letter 'waw' did not move to the letter 'fa', but the letter 'ya' changed from 'waw' to *kasrah*. Based on this, we can follow what has been suggested by earlier scholars in the problem of verbs that use the letter 'waw' to mean *sukun* for passive.

This study recommends that to study the verses of the Qur'an from various aspects and various points of view, both in terms of meaning, structure, and phonetics. They should also apply the theories of Western scholars in studying sciences related to the Qur'an to add scientific value to this research. In addition, researchers are further encouraged to explore the study of Arabic sounds more comprehensively given the views of other *qira'at* imams

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