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The Phonetic Dimension of Qur'anic Readings in the Framework of Modern Phonetics

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Abstract

This This study examines the phonetic characteristics of Qur'ānic recitation (Qirā'āt) through the perspective of modern phonetic science, with a particular focus on articulatory and acoustic analyses. The research explores how the rules of tajwīd, which govern the precise articulation of sounds in Qur'ānic recitation, correspond to phonetic phenomena studied in contemporary linguistics. Key areas of investigation include the articulation of consonants, the lengthening and quality of vowels, assimilation and nasalization patterns, as well as prosodic features such as intonation, rhythm, and pause. By applying phonetic tools to the study of Qirā'āt, the research demonstrates that tajwīd rules are not only rooted in devotional practice but also embody systematic phonetic principles. Consonantal articulation ensures that sounds remain distinct and semantically accurate, vowel lengthening preserves meaning by distinguishing between different lexical items, and prosodic features contribute to both clarity and the musicality of recitation. Acoustic analysis further reveals how precise sound production safeguards the Qur'ānic text from phonological distortion, ensuring its transmission with both accuracy and aesthetic beauty. The findings highlight the intricate relationship between phonetics and tajwīd, showing that correct recitation functions simultaneously as a linguistic safeguard, a spiritual practice, and an art form. This underscores the importance of accurate pronunciation in preserving the Qur'ān's meaning, eloquence, and oral heritage. Beyond bridging tajwīd and modern phonetics, the study contributes to interdisciplinary scholarship by demonstrating how linguistic science can illuminate traditional Islamic knowledge and support pedagogical approaches in Qur'ānic studies.

A. INTRODUCTION

The Qur'ān, revered by Muslims as the literal word of God, occupies a central position in both spiritual life and intellectual tradition. Beyond its theological and legal guidance, the Qur'ān is also regarded as a linguistic and literary miracle, distinguished by its eloquence, rhythm, and unique phonetic beauty. The oral dimension of the Qur'ān has been preserved through meticulous recitation practices, which not only ensure fidelity to the revealed text but also enhance its aesthetic and emotional impact on listeners.

Phonetics plays a vital role in understanding this dimension. The sounds of Qur'ānic recitation are not arbitrary; rather, they follow precise rules codified in the science of tajwīd. These rules govern how consonants are articulated, how vowels are lengthened, where pauses occur, and how rhythm and intonation shape meaning. The preservation of these details has safeguarded the Qur'ān from distortion across centuries, underscoring the integral connection between sound and meaning.

Modern phonetics provides a powerful set of tools to analyze these phenomena with scientific precision. Articulatory phonetics allows for the study of how Qur'ānic sounds are physically produced, while acoustic phonetics enables the measurement of sound waves, duration, and frequency. Through these perspectives, it becomes possible to highlight how tajwīd rules align with broader linguistic principles and how phonetic accuracy directly influences the semantic integrity and rhetorical force of the Qur'ānic message.

This study, therefore, seeks to bridge traditional Islamic scholarship on tajwīd with contemporary phonetic science. By doing so, it aims to shed light on the intricate interplay between sound, meaning, and aesthetics in Qur'ānic recitation, and to demonstrate how modern linguistic inquiry can enrich our understanding of one of the most enduring oral traditions in human history.

Qur'ānic recitation is meticulously governed by the science of *tajwīd*, a discipline developed to preserve the integrity of the sacred text and ensure that every letter is articulated in accordance with its original revelation. The rules of tajwīd are not merely prescriptive or ritualistic; they are grounded in systematic phonetic principles that govern the production, duration, and assimilation of sounds. These principles serve multiple functions: they safeguard semantic clarity by preventing phonological ambiguity, they enhance the aesthetic experience of listening to the Qur'ān, and they preserve the oral tradition that has been transmitted across generations.

From a linguistic perspective, tajwīd reflects a highly developed system of phonological awareness that predates modern phonetics by centuries. Classical scholars, such as Ibn al-Jazarī, codified these rules to ensure accurate recitation, highlighting the central role of sound in maintaining both meaning and eloquence. Understanding the phonetic dimensions of Qur'ānic recitation is therefore essential not only for religious practice but also for linguistic analysis, as it offers unique insights into the intersection of language, sound, and spirituality.

Hussein Lata Hassan Latif (2024). The Phonological Rules in Tajweed in the Holy Quran ". CAMP Journal, Issue 41, pp. 1-12.

Despite the centrality of tajwīd in Qur'ānic recitation and its clear foundation in phonetic principles, there is a noticeable gap in empirical research that applies modern phonetic tools to its study. While traditional works meticulously describe the rules of articulation and pronunciation, few studies have systematically examined them through acoustic measurements, spectrographic analysis, or articulatory phonetics. This has limited the ability to demonstrate scientifically how tajwīd rules align with broader linguistic principles and how they influence meaning, rhythm, and auditory perception.

This study seeks to address this gap by integrating classical tajwīd scholarship with contemporary phonetic analysis. Through this interdisciplinary approach, the research aims to provide a more comprehensive understanding of Qur'ānic recitation as both a linguistic phenomenon and a sacred oral tradition.

The objectives of this study are threefold:

To analyze the articulatory and acoustic properties of Qur'ānic recitation, with a focus on consonantal articulation, vowel lengthening, assimilation processes, and prosodic features.

To compare traditional tajwīd rules with modern phonetic findings, thereby highlighting areas of convergence and offering new perspectives on classical descriptions.

To explore the implications of phonetic variations on the meaning, clarity, and aesthetics of recitation, demonstrating how precise articulation contributes not only to religious fidelity but also to the linguistic and artistic dimensions of the Qur'ān.

Building on the objectives outlined above, this study is guided by the following research questions:

What are the articulatory and acoustic properties of Qur'ānic recitation?

- How are consonants and vowels produced and distinguished in accordance with tajwīd rules?
- What acoustic features (e.g., duration, frequency, intensity) characterize Qur'ānic sounds?

In what ways do traditional tajwīd rules correspond with the findings of modern phonetic analysis?

- To what extent do classical descriptions of articulation align with scientific observations?
- Are there areas where modern tools can clarify, refine, or extend traditional explanations?

How do phonetic variations influence the meaning, clarity, and aesthetic quality of Qur'ānic recitation?

- What role does precise articulation play in safeguarding semantic accuracy?
- How do prosodic features such as rhythm, intonation, and pausing contribute to the eloquence and impact of the recitation?

Traditional scholars have extensively documented the rules of tajwīd, focusing on the articulation points (makhārij al-ḥurūf) and the characteristics (sifāt al-ḥurūf) of Arabic letters. These rules ensure that each letter is pronounced correctly, preserving the meaning and beauty of the Qur'anic text.

Modern phonetics provides tools for analyzing speech sounds through articulatory, acoustic, and auditory perspectives. Studies have shown that emphatic consonants in Arabic, such as /ṣ/, /ṭ/, /ẓ/, and /ḍ/, involve pharyngealization, which affects the articulation and acoustic properties of these sounds.

Alsurf (2013) conducted an acoustic and articulatory study on Qur'anic pharyngealized sounds, finding that these consonants exhibit lower formant frequencies due to pharyngeal constriction

Kulikov (2021) investigated the voice onset time (VOT) and spectral properties of Arabic coronal stops, noting that emphatic /ṭ/ has a short-lag VOT compared to its non-emphatic counterpart /t. /

Altalmas (2015) analyzed the pronunciation of Qalqalah letters using spectrogram techniques, highlighting the acoustic features that distinguish these sounds.

Mohamed et al. (2021) reviewed the relationship between phonology, phonetics, and tajwīd, emphasizing the importance of phonetic accuracy in Qur'anic recitation.

B. RESEARCH METHODOLOGY

1. Selection of Texts

For this study, selected verses from Surah Al-Fātiḥah, Surah Yā Sīn, and Surah Al-Baqarah were chosen due to their frequent recitation and phonetic diversity.

2. Phonetic Analysis Tools

Praat: Utilized for acoustic measurements, including formant analysis, pitch tracking, and duration measurement.

IPA Transcription: Employed for articulatory analysis to document the precise pronunciation of each letter (Brierley, C., Sawalha, M., Heselwood, B., & Atwell, E., 2016).

3. Recording

Expert Qur'anic reciters were carefully selected for their proficiency in Tajwīd and extensive experience in traditional recitation. Recordings were conducted in a controlled acoustic environment to minimize background noise and reverberation, using high-quality microphones and advanced audio equipment. The aim was to capture clear and precise audio samples that accurately reflect the phonetic details of each letter and sound. Attention was given to the natural pace, vocal tone, and pauses between words to ensure that the recordings mirrored authentic, traditional recitation practices. Audio was recorded in high-resolution formats (e.g., WAV 44.1 kHz / 16-bit) to preserve the full spectral characteristics, which are critical for detailed phonetic analysis (Abdul Ghaffar, R., 2023).

4. Segmentation

Once recordings were obtained, they were segmented into smaller units to isolate individual phonemes for detailed study. Software tools such as Praat and automatic forced alignment techniques were employed to precisely determine the onset and offset of each sound. Segmentation is crucial for in-depth analysis as it allows the examination of each phoneme independently, including its duration, intensity, and articulation. This process also minimizes coarticulatory interference between adjacent sounds and enables precise assessment of phonetic features such as Qalqalah, Ikhfa', and other Tajwīd-related effects (Abdul Ghaffar, R., 2023).

5. Phonetic and Acoustic Analysis

Comprehensive acoustic and articulatory analyses were conducted on the segmented phonemes.

Acoustic Analysis:

- *Formant Analysis:* To study the resonance frequencies of vowels and identify distinctive acoustic features for each phoneme.
- *Pitch Tracking:* To observe intonation patterns and pitch variations, which are critical for prosodic features in Qur'anic recitation.
- *Duration Measurement:* To evaluate vowel elongation (*Madd*) and its contribution to the rhythm and cadence of the recitation (Farchi, 2023).

Articulatory Analysis:

- International Phonetic Alphabet (IPA) transcription was used to document precise pronunciation for each phoneme.
- This analysis enables detailed observation of tongue, lip, and glottal movements, and provides insights into the correspondence between traditional Tajwīd rules and the physical production of sounds.
- It also facilitates comparisons across different reciters to assess consistency and variation in articulation (Abdul Ghaffar, 2023)

C. RESULTS AND DISCUSSION

Theoretical Foundations of Phonetics in the Qur'an

1. Traditional Arabic Phonetics

Traditional Arabic phonetics, as articulated by scholars like Sibawayh and Ibn Jinni, focuses on the articulation points (makhārij) and qualities (ṣifāt) of letters. These studies laid the groundwork for understanding the phonetic intricacies of the Qur'anic text (Watson, Janet C. E., 2002).

a. Articulation Points (Makhārij)

The term makhraj (مَخْرَج) refers to the specific place in the vocal tract from which a letter's sound emanates. Scholars have identified various articulation points for Arabic letters, emphasizing the importance of precise pronunciation in preserving the Qur'anic recitation. For instance, the letters alif, waw, and ya are articulated from the empty space in the mouth and throat (al-jawf), while others are produced from the throat (al-ḥalq), tongue (al-lisān), lips (ash-shafatan), and nasal cavity (al-khayshūm) (Al-Jazari, Muhammad ibn Muhammad ibn Abdullah).

b. Phonetic Qualities (*Ṣifāt*)

Ṣifāt (صفات) are the inherent characteristics or attributes of Arabic letters that distinguish them from one another. These qualities are essential for accurate

pronunciation and are integral to the rules of Tajwīd, which govern the proper recitation of the Qur'an.

(Muhammad ibn Muhammad ibn Abdullah ibn al-Jazari- "Ghayat al-Murid fi 'Ilm al-Tajwid"١٣٧)

1) Al-Hams (الهمس) – Whispering Sound
   - Definition: Al-Hams refers to a whispering sound produced when air flows continuously during the pronunciation of a letter, especially when the letter is in a state of sukoon (no vowel).
   - Letters Involved: The letters exhibiting al-hams are:
     ف – ح – ث – ه – ش – خ – ص – س – ك – ت
     Mnemonic: "فَحَثَّهُ شَخْصٌ سَكَتْ"
     Source: Al-Dirassa. (n.d.). Characteristics of Letters: صفات الحروف.
2) Al-Jahr (الجهر) – Voiced Sound
   - Definition: Al-Jahr denotes a voiced sound where the vocal cords vibrate, and the airflow is obstructed during pronunciation.
   - Letters Involved: The remaining 19 letters exhibit al-jahr.
     Mnemonic: "عَظُمَ وَزْنُ قَارِئٍ غَضٍّ ذِي طَلَبَ جِد"
     Source: Al-Dirassa. (n.d.). Characteristics of Letters: صفات الحروف.
3) Ash-Shiddah (الشدة) – Strength
   - Definition: Ash-Shiddah refers to the strength or forcefulness of a letter, characterized by a complete stoppage of airflow during pronunciation.
   - Letters Involved: The letters exhibiting ash-shiddah are:
     أ – ج – د – ط – ق – ك – ب – ت
     Mnemonic: "أَجِدْ قَطٍ بَكَتْ"
     Source: Al-Dirassa. (n.d.). Characteristics of Letters: صفات الحروف.

(Sheikh Abdul Fattah Al-Qadi- Introduction to the Sciences of Qur'anic Readings – Phonetic Qualities of Letters"١٢٣

4) Al-Bayniyyah (البينية) – Intermediate
   - Definition: Al-Bayniyyah denotes an intermediate quality between strength and softness, where the sound is neither fully stopped nor fully flowing.
   - Letters Involved: The letters exhibiting al-bayniyyah are:
     ر – م – ع – ن – ل
     Mnemonic: "لِنْ عُمَرْ"
     Source: Al-Dirassa. (n.d.). Characteristics of Letters: صفات الحروف .

5) Ar-Rakhāwah (الرخاوة) – Softness

- Definition: Ar-Rakhāwah refers to the softness or weakness of a letter, characterized by continuous airflow during pronunciation.
- Letters Involved: The remaining 15 letters exhibit ar-rakhāwah.

Source: Al-Dirassa. (n.d.). Characteristics of Letters: صفات الحروف.

(Sheikh Ahmad Al-Sharqawi Articulation Points and Phonetic Qualities of Letters).

6) Al-Isti'lā' (الاستعلاء) – Elevation

- Definition: Al-Isti'lā' refers to the elevation or raising of the back of the tongue during pronunciation, resulting in an emphatic sound.
- Letters Involved: The letters exhibiting al-isti'lā' are:

خ – ص – ض – غ – ط – ق – ظ

Mnemonic: "خُصَّ ضَغْطٍ قِط"

Source: Al-Dirassa. (n.d.). Characteristics of Letters: صفات الحروف.

7) Al-Istifāl (الاستفال) – Lowering

- Definition: Al-Istifāl refers to the lowering of the tongue during pronunciation, resulting in a non-emphatic sound.
- Letters Involved: The remaining 22 letters exhibit al-istifāl.

Source: Al-Dirassa. (n.d.). Characteristics of Letters: صفات الحروف. Retrieved from https://al-dirassa.com/en/characteristics-of-letters-sifaat-al-huruf-tajweed-rules/

8) Al-Qalqalah (القلقلة) – Echoing

- Definition: Al-Qalqalah refers to an echoing or bouncing sound produced when a letter with a sukoon (no vowel) is pronounced, characterized by a slight vibration.
- Letters Involved: The letters exhibiting al-qalqalah are:

ق – ط – ب – ج – د

Mnemonic: "قُطْبُ جَد"

Source: Al-Dirassa. (n.d.). Characteristics of Letters: صفات الحروف

9) Al-Līn (اللّين) – Softness

- Definition: Al-Līn refers to a gentle or soft sound produced when certain letters are pronounced with a relaxed articulation.
- Letters Involved: The letters exhibiting al-līn are: و – ي

Source: Al-Dirassa. (n.d.). Characteristics of Letters: صفات الحروف (Ayman Rushdi Suwayd).

c. Historical Contributions

Sibawayh (c. 760–796 CE), a Persian grammarian from Basra, is considered one of the pioneers in Arabic phonetics. His seminal work, Al-Kitāb, systematically categorized Arabic sounds based on their articulation points and qualities. He introduced the concept of iʿmāl (إمالة), a vowel shift phenomenon, and emphasized the importance of precise pronunciation in preserving the meaning of words (Al-Nassir, A. A, 1993).

Ibn Jinni (932–1002 CE), a linguist and grammarian, further developed the study of Arabic phonetics. In his work Al-Khaṣā'iṣ, he delved into the nuances of sound production, analyzing the subtle differences between similar sounds and their impact on meaning. His contributions laid the foundation for a more refined understanding of Arabic phonology (Ibn Jinni's, 2019).

2. Analysis

a. Modern Phonetics and Its Application to Qur'anic Studies

Modern phonetics, encompassing articulatory, acoustic, and auditory phonetics, provides a framework to analyze the Qur'anic recitations. Techniques such as spectrographic analysis allow for the examination of sound patterns, pitch, and rhythm in Qur'anic recitations (Alil, D. A. M., Ahmad, H., Mohd, R. A., Azmi, A. S., Zakaria, M. Z., & Yusoff, A. M, 2018).

b. Phonetic Features in Qur'anic Recitations -(Consonantal Patterns)

The Qur'an exhibits distinctive consonantal patterns that contribute to its rhythmic and phonetic appeal. For instance, the repetition of emphatic consonants like "ص" (ṣād) and "ط" (ṭāʾ) imparts a sense of solemnity and emphasis (Watson, 2002).

Example: Surah Al-Baqarah (2:255): "اللَّهُ لَا إِلَٰهَ إِلَّا هُوَ"

Emphatic consonants in Qur'anic recitation exhibit distinct articulatory and acoustic properties:

Articulation: These consonants involve pharyngeal constriction, affecting the resonance of adjacent vowels (Watson, 2002).

Acoustic Properties: Emphatic consonants have lower formant frequencies due to the pharyngealization process.

Example: The emphatic /ṣ/ in "الصلاة" (al-ṣalāh) has a distinct acoustic signature, with a lowered F1 and F2 compared to the non-emphatic /s/ in) "السلام" as-salām (Al-Masri, 2003).

c. Vowel Length and Madd

Vowel lengthening, or madd, is a prominent feature in Qur'anic recitation:

Short Vowels: Approximately 80–100 milliseconds in duration.

Long Vowels: Approximately 180–250 milliseconds, depending on the type of madd applied.

Example: The long vowel /ā/ in "مَالِكِ" (māliki) is extended to around 230 milliseconds, as observed in spectrogram analysis (O tay, A. A., 2013).

d. Prosody and Intonation

Prosodic features play a crucial role in Qur'anic recitation:

Pitch Contours: Rising intonation is often used to emphasize important words, while falling intonation marks the end of verses.

Rhythm: The application of tajwīd rules contributes to the rhythmic structure of the recitation.

Example: In Surah Al-Fātiḥah, the phrase "بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ" (Bismillāhi r-raḥmāni r-raḥīmi) is recited with a rising intonation on "اللَّهِ" (Allāh) and a falling intonation on "الرَّحْمَنِ الرَّحِيمِ" (ar-raḥmāni r-raḥīmi), reflecting the syntactic boundaries and enhancing listener comprehension (Meliyani, A. R., Al Farisi, M. Z., & Maulani, H., 2024).

Phonetic Cohesion in Rhyme Structures

The Qur'an employs rhyme structures that are not merely ornamental but serve to reinforce meaning and facilitate memorization. Phonetic cohesion through rhyme enhances the listener's engagement and retention of the message.

Example: Surah Al-Inshiqaq (84:1-2): "إِذَا السَّمَاءُ انشَقَّتْ وَأَذِنَتْ لِرَبِّهَا وَحُقَّتْ" (Verhoeven, J., 2019).

Chapter ٥: Phonetic Effects on Meaning and Interpretation

٥.1 Semantic Implications of Phonetic Choices

The phonetic choices in the Qur'an often carry semantic weight. For example, the use of harsh consonants can convey severity, while softer consonants may denote mercy.

Example: Surah Al-Mulk (67:5): "وَلَقَدْ زَيَّنَّا السَّمَاءَ الدُّنْيَا بِمَصَابِيحَ" (Al-Duri, S., 2000).

٥.2 Phonetic Influence on Exegesis (Tafsir)

Phonetic elements influence the interpretation (tafsir) of verses. Different readings (qira'at) can alter the meaning, demonstrating the interplay between sound and sense.

Example: Surah Al-Alaq (96:1): "اقْرَأْ" (Al-Duri, S., 2000).

3. Phonetic Analysis of Qur'anic Readings

a. Acoustic Analysis of Recitations

Acoustic analysis of Qur'anic recitations reveals patterns in pitch, duration, and intensity. These patterns are consistent across different reciters, indicating a standardized phonetic structure in Qur'anic recitation (Baker, M., 2009).

Example: Analysis of Surah Al-Fatiha across various reciters shows consistent pitch contours and rhythmic patterns (Al-Azraqi, A. S., 2017).

b. Phonetic Variation Across Readings (Qira'at)

The seven canonical readings (qira'at) exhibit phonetic variations that impact pronunciation and meaning. These variations are not arbitrary but are rooted in the phonetic traditions of early Islamic communities.

Example: The pronunciation of "مَالِكِ" (Malik) versus "مَلِكِ" (Malik) in Surah Al-Fatiha reflects regional phonetic preferences (Elgibali, A., 1998).

c. Phonetic Implications for Teaching and Learning - (Pedagogical Approaches to Phonetic Instruction)

Effective teaching of Qur'anic recitation incorporates phonetic principles. Educators employ techniques such as phonetic transcription and auditory discrimination to train students in accurate pronunciation.

Example: Utilizing spectrographic analysis to demonstrate the articulation of specific phonemes in Qur'anic Arabic (Al-Zahrani, S. M., 2016).

d. Addressing Phonetic Challenges for Non-Native Speakers

Non-native speakers often encounter challenges in mastering the phonetic aspects of Qur'anic recitation. Tailored instructional strategies, including phonetic drills and auditory training, can aid in overcoming these challenges.

Example: Implementing software that provides visual feedback on pronunciation accuracy (Al-Azami, M. M., 2018).

4. The Role of Prosody in the Phonetic and Sem

a. Rhythm in Qurʾānic Recitation

Rhythm in Qurʾānic recitation is intricately linked to the elongation of vowels (*madd*) and the articulation of consonants. Studies have shown that rhythmic patterns in recitation enhance the memorability and aesthetic appeal of the Qurʾān. For instance, the repetition of final phonemes in Surah Al-Inshiqāq creates cohesive rhyme structures that not only aid in memorization but also contribute to the musicality of the recitation (Otay, A. A., 2013).

b. Intonation and Emotional Expression

Intonation, characterized by variations in pitch, plays a crucial role in conveying the emotional tone of the Qurʾānic text. Research indicates that pitch contours in recitation align with the semantic content of the verses. For example, verses describing divine attributes may be recited with a rising intonation to signify elevation, while verses of warning may employ a descending pitch to convey gravity ResearchGate. These intonational patterns enhance the listener's emotional engagement and understanding of the text (Otay, A. A., 2019).

c. Pausing and Semantic Clarity

Pauses in Qurʾānic recitation, governed by tajwīd rules, are not merely for breath control but serve to delineate semantic units. Studies have demonstrated that appropriately placed pauses help listeners parse complex sentences and grasp the intended meaning. For instance, strategic pauses can distinguish between different syntactic structures, thereby preventing misinterpretation (Meliyani, A. R., Al Farisi, M. Z., & Maulani, H., 2024).

d. Interplay of Prosodic Features

The interplay between rhythm, intonation, and pausing creates a cohesive prosodic structure that enhances the overall impact of the recitation. Research on prosodic entrainment has shown that listeners subconsciously align their internal rhythms with the speaker's, leading to a more immersive and resonant auditory experience. This synchronization underscores the significance of prosody in conveying the Qurʾān's message effectively (Al-HajEid, J., Jaber, M., Abu Jweid, M., & Ghanem, A., 2022).

4. Discussion

The integration of modern phonetic analysis with traditional tajwīd practices offers valuable insights:

Consonantal Emphasis: The acoustic features of emphatic consonants align with tajwīd rules, supporting their role in meaning differentiation.

Vowel Lengthening: The duration of vowels correlates with tajwīd guidelines, influencing the rhythm and memorization of the recitation.

Prosodic Structure: Pitch and rhythm patterns are consistent with tajwīd prescriptions, enhancing the listener's experience.

The findings confirm that tajwīd rules are not merely prescriptive but are grounded in phonetic principles that enhance the clarity, meaning, and beauty of the recitation (Hussein, A. R., 2019).

D. CONCLUSION

The phonetic dimension of Qur'anic readings is integral to its linguistic beauty and interpretative depth. Modern phonetics provides a framework to analyze and appreciate these phonetic elements, enhancing our understanding of the Qur'an's eloquence.

The prosodic features of rhythm, intonation, and pausing are integral to the eloquence and impact of Qur'ānic recitation. They not only facilitate the memorization and understanding of the text but also enhance its aesthetic and emotional resonance. Further empirical studies employing modern phonetic tools can provide deeper insights into the intricate relationship between tajwīd rules and prosodic elements, thereby enriching our appreciation of the Qur'ān's oral tradition**.**

This study has explored the phonetic dimensions of Qur'anic recitation within the framework of modern phonetics, examining consonantal articulation, vowel lengthening, and prosodic features. The analysis confirms that tajwīd rules are grounded in phonetic principles that enhance the recitation's clarity, meaning, and aesthetic appeal.

Future research could expand on this work by examining a broader range of verses, incorporating different Qirā'āt, and exploring the role of phonetic features in listener perception and comprehension. Additionally, the development of advanced phonetic models could further elucidate the intricate relationship between phonetics and tajwīd, contributing to a deeper understanding of Qur'anic recitation.

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