THE UNIQUENESS OF /N/ SOUND IN QURANIC ORTHOEPY

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ABSRACT
This study in its overall thrust is devoted to give a comprehensive account of the /n/consonant in the Arabic phonology and the Quranic orthoepy in particular. It addresses the extent of the distinct features of this sound; especially when it concerns the process of Quran recitation. It tackles the special phonological phenomena that characterize this sound such as assimilation, concealment, conversion and appearance when influenced by other neighbouring sounds. Providing illustrative examples as evidence, the researcher tries to prove the proposal of converting rather than concealing the Quranic /n/ sound into /ŋ/ (which is not found in the Arabic phonology) whenever it is followed by the /k/ consonant. The study highlights the two Arabic unique phenomena of 'ghunna' and 'nunnation' which are closely related with the articulation of the /n/ sound. It emphasizes the necessity of paying such merits of such a sound much attention peculiarly in the process of the Quranic orthoepy.

1. Introduction: A Preamble

Sound-systems of languages are of great deal of similar and/or different phenomena. This may refer to the way sounds (whether consonants or vowels) influence each other; and then similar/different phonological phenomena emerge. This may also result in serious controversy among phoneticians/ phonologists. Ball (1999: 53), for example, defines consonants in terms of how sounds work in syllables rather than how they are produced; and so all syllables require a central portion, i.e., sonority (referring to the inherent loudness of the sound), initial and final options which are less sonorous. "Regarded as those units which function at the margins of syllables whether single or clusters, consonants become easier to describe and understand", as stated by Murica, Brinton and Goodwin (1996: 37). Given the fact that Arabic phonologists agree that the twenty-eight consonants listed in the Table of Arabic Sounds are of less clearness in listening, Anees (1961: 26-7) thinks that Arabic consonants are classified in accordance with the same three criteria of 'voicing', 'place of articulation' and 'manner of articulation'. What is worth mentioning here is that such classifications help to define/describe every consonant sound. Thus, [n], for instance, is said to be a voiced, alveolar, nasal consonant sound.

Phonological phenomena represent one more subject of debate. Assimilation, as one of such phenomena whereby rhythm, connected speech and fluency are maintained, is of a great deal of argument. In this respect, Crystal (1985:25) states that "the study of assimilation has been an important part of historical linguistic study, but it has been a much neglected aspect of synchronic speech analysis, owing to the traditional manner of viewing speech as a sequence of 'discrete' words." In English, assimilation is expressed in such terms as 'partial' or 'total', 'regressive', 'progressive' or 'coalescent'.

Roach (1991: 123) holds that a significant difference in natural connected speech is the way that sounds belonging to one word can cause change in sounds belonging to neighbouring words. In Arabic, and although it retains some sense of Roach's point of view, assimilation is not but one of some other terms used to refer to any change that takes place in the process of sound articulation. That is some sounds, the nasal consonant /n/ in particular; assimilate in some way(s) which is/are not necessarily the same as in English. This is very clear when Quranic orthoepy is concerned.

The purpose of this study is not only to focus on the varieties of the sound /n/ assimilation but also to shed light on the two terms of 'nunnation' -the process of adding the sound /n/ at the end of utterances- and 'ghunna' -the attractive musical sound produced through the upper part of the nose- as other common phenomena in the Arabic phonology in general and the Quranic orthoepy in peculiar.

The study gives an account of what nasality is, how nasal sounds are produced, and how such sounds are interpreted in Arabic. It also presents the consonant /n/ as a nasal sound of special verbal nature and merits. It focuses on the change(s) the /n/ sound faces when influenced by other adjacent sounds especially in the process of the Quranic orthoepy.

The main hypothesis proposed in this study is that the Quranic /n/ sound is necessarily converted into [ŋ] (which is not found in the Arabic phonology) whenever it is followed by the [k] consonant. The study provides a considerable number of Quranic words and data as evidence to substantiate such a proposal.

2. Nasality and Articulation of Nasal Consonants

Nasality is defined as a quality of the voice that is produced by nasal resonators. It is classified by two kinds of the nose cavity conditions, open and closed. Open nasality occurs as the soft palate is relaxed to allow a free passage of air to escape through the nasal tract. Closed nasality occurs when there is a type of blockage or constriction in the nasal passage. Nasal sounds occur when there is a complete closure at some point in the mouth, and all the air thus escapes through the nose.

Nasal sounds are produced by a coupling of the nasal and or pharyngeal resonators. The closed oral cavity and the complex sinus structure of the nose are joined together to form cavities to the main passage (pharynx and nasal tract). Generally, the greater the size of the nasopharynx opening, the better the nasal quality. By lowering the velum, a passage is opened from the pharynx to the nasal cavity allowing air to escape through the nasal cavity. The air is then blocked from escaping through the oral cavity since the lowered soft palate forces air to exit or be radiated through the nose. During nasal production, the chambers of the nose must be closed off during oral sounds and open for nasal sounds. Nasals are found in almost all the world languages; and the phonetic [m], [n] and [ŋ] are the most common of nasals. Neither of these sounds, however, causes much difficulty to most speakers. They are distinct from other sounds in that they are produced with the entire vocal tract. There is also no interruption of airflow through the nose in nasal production. By examining the acoustics of nasal sounds we can learn a great deal about the place of articulation of nasals and how they behave in various contexts. Acoustic differences between nasal sounds are due to modifications made within the oral resonator. Adding the nasal cavity to the vocal tract increases the size of the resonator which greatly affects the frequencies of sounds. Therefore, the first formant is lower for [m] than it is for [n] which is, in turn, lower than the first formant of [ŋ]. This results from the decreased volume of the oral cavity as closure progresses from the front to the back of the vocal tract (Borden and Harris, 1984).

2.1. Particularity of the [n] Sound

The [n] consonant is a voiced alveolar nasal sound. It is articulated with a similar tongue position as the alveolar stop [d]. For the articulation of the [n] sound, the mouth is blocked by pressing the tip of the tongue against the alveolar ridge and the sides of the tongue against the sides of the palate. In some languages, as stated by Fujimura (1962) and O'Connor (1967: 64), the [n] sound is made with the tongue-tip on the teeth themselves rather than on the alveolar ridge where a dental [n] is produced. Such a sound is hardly noticeable in English. Besides, and instead of making a firm closure with the lips or the tongue-tip so that some of the breath goes through the nose, speakers of some languages may only lower the soft palate and make no closure, so that some of the breath goes through the nose but the remainder goes through the mouth. When this happens we have

a nasalized vowel. Once again, nasalized vowels are hardly found in English. When [n] is found before another consonant, the voiced or voiceless nature of the final consonant has an effect on the length of both the vowel and the nasal consonant. One more feature of the English /n/ sound in is its syllabicity in certain contexts. That is it may occur at the centre of the syllable which is usually occupied by a vowel, and will have the same length of the left vowel, as in the words /ofn/, and /ri:zn/, for instance.

As regards articulation and as believed by many phoneticians such as Waston (2002), it seems that the Arabic sound-system retains the same mechanism of producing the universal consonant [n]. However, Arabic uses such terms as 'conversion', 'concealment', 'appearance' as well as 'assimilation' when production is involved.

As it concerns the particularity of the /n/ sound in the Holy Quran, and in a survey of consonant occurrence in Quranic verses, Anees (1961: 70) states that "the three sounds /l, m, n/ are more frequent than the other consonants. The writer finds that these sounds respectively occur 127, 124 and 112 times per one thousand consonants; whereas the occurrence of the other sounds ranges between 3 and 72». Hence, such sounds are mostly common and commonly influenced by other adjacent sounds.

Al-Musewi (1993: 72) states that "'voicing' and 'place of articulation' of /n/ sound may be influenced by the neighbouring sounds; but it never loses its manner of articulation, i.e., nasality". Al-Musewi (ibid.), however, mentions six variants of the sound which are contextually determined.

(a) It is a voiced alveolar sound when it is followed by either of these alveolar sounds: / d, z, t, t, s, s, z /, as in the examples:
/man taaba/ (who repented) /
/?in saara/ (if he/she/it walked)
(b) It becomes a voiceless velar sound in case it is followed by the velar /k/ consonant as in:
/man kaana/ (who was)
In contrast, it seems wise to thinks that the Quranic /n/ consonant should become a voiced (rather than voiceless) velar sound whenever it is followed by the /k/; and hence the most appropriate pronunciation of /man kaana/ is supposed to be / maŋ kaana/ and not /mak kaana/.
(c) It is palatal when it occurs before the palatal /y/. Consider:
/man yaʂ mal/ (who works)
(d) It is palato-alveolar if is followed by either of the palato-alveolar /sh/ and /j/, as in:
/?in shaa?a/ (if he/she will),
(e) It is a voiced dental sound when it is immediately followed by any of the three dental sounds /th/, !dh/ and /d/, as in:
/min thamar/ (of fruit)
/min dhaalik/ (from that)
/?in daraba / (if he/she/it hits)
(f) It is velar if it is followed by the sound /q/, as in:
/man qaala/ (who said).

2.2. The Phenomena of 'Nunnation' and 'Ghunna'

The two Arabic phenomena of 'nunnation' and 'ghunna' seem to be unique. Nunnation may not be strange or difficult to understand if one knows that it can be simply realized by adding the sound /n/ to the end of indefinite nouns, as stated by Swed (1993: 238) who distinguishes three forms of nunnation:
(1) Nunnation with dhamma (.'..) / u / as a nominative marker, as in the example of/ jibaal un / (mountains)
(2) Nunnation with fatha (…) / a / as an accusative marker, as in the example of / jibaal an /, and
(3) Nunnation with kasra (....)/ i / as a genitive marker, as in the example of / jibaal in/.
Morphologically speaking, it seems that nunnation is a suffix marked as double 'dhamma' (…''… as a nominative marker), double 'fatha' (….. as an accusative marker), or double <kasra> (….. as a marker of genitive). Nevertheless, nunnation is realized by the same previously mentioned phonological features of 'assimilation', 'conversion', 'concealment', and 'appearance'.

'Ghunna', on the other hand, is a soft musical sound produced through the upper part of the nose, i.e., neither the tongue nor any other organ of speech is involved in the process of producing 'ghunna'. Anees (1961, 70) refers to ghunna as "an extension of the sound /n/ with certain attractive musical tone".

2.3. 'Nunnation'/n/ and 'Ghunna' in the Quranic Orthoepy

In the process of reciting Koranic verses, the

consonant /n/, 'ghunna' and 'nunnation' assume special forms of articulation. Their main forms occur medial and final positions.

To illustrate the occurrence of the sound /n/ in Quranic orthoepy, one should account for the four processes of 'assimilation', 'conversion', 'concealment', and 'appearance'.

2.3.1. Assimilation of the Consonant / n / in the Quranic Orthoepy

Scholars of recitation agree that assimilation in Quranic orthoepy retains its general meaning. What seems to be the only difference is that the consonant /n/ only regressively assimilates in case it is followed by any of the sounds / y, r, m, 1, w, n /, as illustrated in the following table:

Sounds	Before Assimilation	After Assimilation
n + y	/ ma**n** **y**aʕmal /	/ ma**y** **y**aʕmal /
n + r	/ mi**n** **r**abihi /	/ mi**r** **r**abihi /
n + m	/ mi**n** **m**alak /	/ mi**m** **m**alak /
n+ l	/ mi**n** **l**adun /	/ mi**l** **l**adun /
n + w	/ mi**n** **w**aal /	/ mi**w** **w**aal /
n + n	/?a**n** **n**aquula /	/ a**n** **n**aquula /

Table 2: Assimilation

We notice how the /n/ sound is influenced by such consonant sounds and how such influence results in total assimilation. As for 'ghunna', Arabic phonologists distinguish two types of assimilation: 'complete' and 'incomplete'. Incomplete assimilation with ghunna occurs when the /n/ sound is followed by either of the consonants /y/, /m/, /w/, and /n/. It is so called since the /n/ sound retains its nasality can be perceived in these examples: /liqawmin yasmaʕuun/ /liqawmiy yasmaʕuun/ (to people who hear)

/hudan min rabbihim/ /hudam mir rabbihim/ (guidance from their Lord)

/saa?iqun wa shahiid/ /saa?iquw wa shahiid/ (a driver and a witness)

/hittatun naghfir/ /hittatun naghfir/ (with humility we forgive) It is noticed that incomplete assimilation occurs only across two word boundaries. However, assimilation is sanctioned in four Quranic words even though the sound /n/ is followed by / w / or / y /. These words are:

/ qinwaan / (clusters), / sinwaan / (of single roots or otherwise), / dunyaa / (life of this world), and / bunyaan / (structure)

It seems that the reason for such exceptions is that the above mentioned words will lose their Quranic implications in case they are assimilated.

Complete assimilation without ghunna occurs with the other two sounds i.e., /r/ and /l/. It is so called because the nasality of the sound /n/ is completely elided, as shown in these examples:

/ghafuurun rahiim/ /ghafuurur rahiim/(Oft-forgiving, most merciful)

/hudan lil muttaqiin/ /hudal lil muttaqiin/ (guidance for the righteous)

The main feature that distinguishes assimilation from the other processes, such as concealment, is 'gemination', which is phonetically known as "a sequence of identical adjacent segments of a sound in a single morpheme". (Crystal, 1985:13)

2.3.2. Concealment

The articulation of /n/ is concealed with some trait of nasality when it is followed by one of the following consonants: / s, f, th, dh, d, d, t, t, s, z, sh, j, k, q /. These consonants are referred to as 'concealment sounds'. Once it is concealed, the sound /n/ does not appear; nor does it assimilate. In this respect, it is reasonable to think that the resulting concealed sounds are distinctive allophonic segments of the phoneme /n/ since it is somehow affected by the features of these sounds and then realized by both nasality and ghunna simultaneously. this can be illustrated in the table below:

Sounds	Before Concealment	After Concealment
n + f	/ i**nf**iruu /	**f** /infiruu/
n + th	/u**nth**aa/	**th** /unthaa/
n + dh	/mu**ndh**iriin/	**dh** /mundhiriin/
n+d	/?a**nd**aadan/	**d** /?andaadan/
n + k	/ya**nk**uthuun/	**ŋ** /yaŋkuthuun/
n + q	/fa ?a**nq**athakum/	**nq** /fa ?a**nq**athakum/

Table 3: Concealment

Arab phonologists distinguish three ranks of concealment: high, middle, and low. The high concealment takes place when the consonant /n/ is followed by either of / d, z, t /; as in: /?andaadan/

where the sound /n/ is concealed (but never assimilates) under the influence of the consonant /d/. The low concealment is found when /n/ precedes /q/ or /k/, as in: /munqalibuun/ and /yaŋkuthuun/. It seems plausible to assume that when the sound /n/ is followed by a velar sound such as /k/, it is concealed to become /ŋ/ as a similar nasal velar sound. It also seems that Arabic phonologists avoid mentioning this case of concealment due to the fact that Arabic does not have such a velar consonant. Accordingly, this phenomenon seems to be universal and relates with the mechanism of articulation. That is the articulation of the velar sound /ŋ/ which is normally expected whenever one tries to articulate the alveolar /n/ sound immediately followed by a velar sound. The two diagrams below show the places of articulation of both [n] and [ŋ]. They exhibit the difficulty involved in moving from the alveolar position (when articulating the [n] sound, for example) to the velum place where velar sounds (such as [k]) are produced. As such, one finds it automatic to utter one other sound of total or partial articulation conditions of both alveolar and velar sounds. In the example of the [n] and [k] sounds, the most appropriate sound is [ŋ].

Diagram 1: The [n] Articulation Diagram 2: The [ŋ] Articulation

Nonetheless, one may argue wondering why not to regard such a process as a matter of conversion rather than concealment. The answer is simple and refers to the fact that there is no such an /ŋ/ velar consonant sound in the Arabic phonology as it is in other languages. Consider how clear it is in the English words 'ring' /riŋ/ and 'sink' / siŋk/ where such sounds cluster.

The middle rank of concealment is felt when the sound /n/ is followed by any of the other letters of concealment, as in:

/sahaaban fa suqnaahu/ (clouds we drove)

/qawman saalihiin/ (righteous people)

2.3.3. Conversion

the term conversion denotes that the nasal sound /n/ (whether consonant or nunnation) is converted into /m/ whenever it is followed by the /b/ sound (As the only bilabial plosive sound in Arabic). What is noticeable here is that the sound /n/ is influenced by the labiality of /b/ producing /m/ as a nasal and bilabial sound at the same time. Table No.4 illustrates how the process of conversion takes place.

Before Conversion	After Conversion
/ i**nb**aˤatha /	/ i**mb**aˤatha /
/ ?a**n b**uurika /	/ ?a**m** buurika /
/ mi**n b**aˤdi /	/ mi**m** baˤdi /

Table 4: Conversion

As seen in the examples of the table, conversion comes as a logical result of the phonetic rule that says:

[Alveolar bilabial/ bilabial]

This indicates that the consonant /n/ (as an alveolar sound) converts to the bilabial /m/ since it is followed by the bilabial /b/.

2.3.4. Appearance

The last feature of the /n/ sound in the Holy Quran ortheopy is 'appearance' which means that the sound /n/ is articulated clearly under the absence of any influence of assimilation, conversion, or concealment. Appearance takes place when the /n/ sound is followed by either of the consonants /?, h, h, gh, kh,ʕ/. Consider these examples:

/man ?aamana/ (who believed) (where the /n/ sound is followed by /?/) /rasuul un ?amiin/ (honest messenger)(where nunnation is followed by/?/) /minhum/ (of them) (where the /n/ sound is followed by /h/)

/salaam un hiya/ (peace..This) (where nunnation is followed by /h/)

/min haythu/ (where) (where the /n/ sound is followed by /h/)

/rizq an hasanan/ (where nunnation comes before the /h/ sound)

/min ghil/ (of rancor) (where the / n / sound is followed by /gh/)

/ʕaziiz un ghafuur/ (exalted in power and oft-forgiving) (where nunnation is followed by /gh/)
/min khayr/ (of good) (where the /n/ sound is followed by /kh/)
/qawm un khasimuun /(opponent people) (where nunnation is followed by /kh/)
/ʔanʕamta / (YOU bestowed)(where the sound /n/ is followed by /ʕ/)
/samii ʕun ʕaliim/ (HE who hearth and knoweth) (where nunnation is followed by /ʕ/)
In Arabic, however, appearance of the sound /n/ is categorized into three ranks:
1. High rank appearance when /n/ is followed by either /ʔ/ or /h/, as in: /man ʔaamana/ and /minhum/.
2. Middle rank appearance when the / n / comes before /ʕ/ or / h /, as in: /samii ʕun ʕaliim/and /rizq an hasanan/.
3. Low rank appearance when /n/ is followed by /gh/or /kh/, as in: /min ghil/ and /min khayr/

3. Conclusions
The main conclusions of this study are summarized into the following points:
1. Although assimilation seems to be a universal phenomenon, Arabic phonologists use terms like 'concealment', 'conversion' and 'appearance' (which are not necessarily the same as in English or any other language) to express this phenomenon in the Arabic phonology especially when the process of Quranic orthoepy is concerned.
2. The consonant /n/ is one of the three sounds /l, m, n/ which most commonly occur in the Holy Quran as compared with the other Quranic sounds. As so, it is expected that this sound is frequently influenced by the other sounds under the processes of assimilation, concealment and conversion.
3. In Arabic, the consonant /n/ as an alveolar nasal sound is most commonly influenced by such phenomena as assimilation, concealment and conversion. This influence results in noticeable changes in articulation particularly when it occurs in the verses of the Holy Koran. What is worth mentioning here is that such changes impose themselves on the process of reciting the Holy Quran verses; otherwise, recitation generally becomes incorrect and, religiously speaking, illegal.
4. It is found that terms such as 'total' and 'partial', 'progressive1, 'regressive' and 'coalescent' (which are common in other languages such as English) are not used in the Arabic sound-system. Instead, some other terms such as 'concealment', 'conversion', and 'appearance' (in addition to 'assimilation') are used. This can be summarized in the points given below:
a. The /n/ sound assimilates when it is followed by any of the sounds /y, r, m, 1, w, n/
b. It is concealed when it is followed by either of the consonants /f, th, dh, d, d, t, t, s, s, z, sh, j, k, q/.
c. It is <converted' into / m / when it is followed by / b/.
d. It is clearly articulated when it is followed by all the other consonant sounds /?, h, , h, gh, kh, ʕ/.
5. In this regard, the researcher finds that the Arabic /n/ sound seems to assimilate regressively and never progressively since it is influenced by the following sounds and never influenced by preceding ones.
6. It is also found that the /n/ sound retains its manner of articulation when it is concealed or converted. The alveolar /n/ in /yankuthuun/, for example, changes its place to become the velar /ŋ/ under the influence of the velar /k/. Its nasality is, however, retained with no change. The same is true when talking about the word / imbaʕatha/ where the alveolar /n/ is converted into the bilabial /m/ keeping its nasality as it is.
7. Syllabification is hardly found in Arabic; and hence, the consonant /n/ never becomes syllabic.
8. The researcher thinks that the different concealed forms of the sound /n/ are allophonic segments which emerge under the influence of certain adjacent consonants.
9. It is noticed that the assimilation of the consonant /n/ is not possible when it is followed by the letters of concealment. That is because the consonant /n/ is sonorous whereas the letters of concealment are plosives, fricatives, or affricates.
10. The researcher thinks that the sound /n/ is converted into the velar /ŋ/, which is not found in the Arabic sound system, when it is followed by /k/, as seen in the example of /yankuthuun/ which is actually articulated as /yaŋkuthuun/. This can be justified by the phonetic natural phenomenon of considering the [ŋ] an allophone of [n] when it occurs before [k]. Arabic scholars refer to such a type of /n/ as velar; and so, one may conclude that uttering such a kind of [n] depends on the

same universal phonetic mechanism no matter whether it is found in the sound system of this or that language.

11. 'Nunnation' and 'ghunna' may be regarded as unique phenomena in Arabic. However, one may refer to 'nunnation' and the consonant /n/ as identical sounds because of the close similarity between their articulations.

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Arabic Phonetics

1. Consonants

Place of Articulation		Mannaer of Articulation								
		Bilabial	Inter-dental	Dental	Emphatic dental	(Alveo-) Palatal	Velar	Uvular	Pharyn-geal	Glottal
Stops	Voiceless			t ت	t̲ ط		k ك	q ق		?- ء
	Voiced	b ب		d د	d̲ ض	j ج				
Fricatives	Voiceless	f ف	t ت	s س	s̲ ص	sh̲ ش	kh̲ خ		h̲ ح	h ه
	Voiced		dh̲ ذ	z ز	z̲ ظ		gh̲ غ		؟ ع	
Nasals		m م		n ن						
Laterals				l ل						
Rhotic (trill)				r ر						
Semi-vowels		w و			y ي					

Table 1: Arabic Consonants

2. Vowels

Arabic	English
a	e
aa	a:
i	i
ii	i:
u	u
uu	u: