Phonetically Motivated and Phonetically Unmotivated Assimilation in Quran Tajweed Rules

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Abstract

The recitation style of Quran known as "tajweed" follows certain age-old practice embodied in phonetic specifications. Over the past millennium, explications of the principles (or rules) of tajweed have been recycled again and again in literally hundreds of publications of varied length and detail. However, and probably out of obvious veneration for Quran, the phonetic rules of the tajweed enterprise have never been subjected to academically-based phonetic scrutiny, let alone critique. This has been the state despite the fact that *tajweed* تجويد , as a term does not occur in Quran itself or in the texts of the Prophet 's tradition ألحديث. The term *tarteel* ترتيل (careful reading) and few other terms of similar meaning are used. The purpose of this essay is to problematize the need for such scrutiny. This article focuses only on one set of tajweed rules subsumed under *idghaam* ادغام (consonantal regressive assimilation). The study has culled relevant data and propositions of received wisdom from the sources and has also identified sub-types of assimilation which are not in consonance with current (twenty-first) phonetic scholarship.

Keywords: Quran, Tajweed rules, phonetics, (un)motivated assimilation rules

1. Introduction: Recitation of the Holy Word / Scripture

A desire to vocally immortalize the holy word without relinquishing or compromising the status of the written word can be observed among followers of the various faiths. (Kelber, 2007:2) Furthermore, 'Recitation or reading aloud of scripture is a common feature of piety in virtually every scriptural tradition', so Graham emphasizes (1987:65). Evidence to this effect comes from the tradition of Hellenistic pagan cults (such as that of Isis), Zoroastrian traditions, Hindu and Buddhist traditions, Chinese and Japanese traditions, and Judeo-Christian traditions (idem: 65-66), besides the Muslim tradition, which is the focal point of this research project. For example, no extant text antedates Panini's (ca. 500 BCE) on the phonetics of the pronunciation of some Vedic texts. The Vedu (plural of vedah – meaning what is known or knowledge) are oral texts and they are also preserved in writing. They have been orally transmitted from generation to generation over the centuries by Brahmanic reciters; in fact some consider committing them to writing comes close to jeopardizing their sanctity. (Graham, 1987: 72 and 101) According to Lannoy (1971:192), 'Vedic chanting is a Meta science of sound, mystical prayer, scriptural recitation in Sanskrit … [which is] performed in tempo.' Graham (1987: 69) gives some detailed description of Vedic chanting in terms of tempo (the unit is *laya*) and the speed (*vrtti*) in three degrees. Learning the various elements for the 'proper' rendition of the Vedic hymns fulfills the Buddhist tradition of *'evam me sutan'* meaning, 'thus I have heard'. Furthermore, the Judeo-Christian tradition used to have a similar orientation concerning the oral status of the holy writ, but widespread oral recitation has now waned. The written word has surpassed the vocal aspect of the scripture. 'It's in the Bible' is used more frequently than 'God says' (idem: 49 and 120-125). For the Muslims, the Quran stands as 'God's *ipsissima vox*' (Kelber, 2007:4)

2. Tajweed

Tajweed (chanting or cantillation) is a special style of reading Quran with the intent of (?) 'upgrading the quality of the recitation ac'. Two points may be appropriate at this point in the paper. First, the word تجويد DOES NOT occur in any form or shape in either the Quran or the Prophet's tradition الحديث أو ألسنة . The words رتل , تلا , قرأ do occur in different forms and shapes in both Quran and the texts of the Prophet's tradition. Second, although the word 'readings' is used to refer to those alternative ways of changing written symbols (letters) into sounds قراءات ; it is also used to the general process of reading. In the literature in Arabic, قراءة also has a similar fluidity of reference. Nonetheless, the literature distinguishes between tajweed and reading. The science of Qiraa'aat علم القراءات deals with the variation in word and phrase reading. For example, whether the word is *malik*i ملك or *maalik*i مالك in Suurat Al-Faatiha relates to qiraa'ah. Similarly, whether the subject of the present tense verbs in the following phrases is a second or third person plural relates to 'readings' but not to tajweed; بل تؤثرون الحياة ألدنيا , بل يؤثرون الحياة الدنيا , وما تشاءون إلا أن يشاء ألله , وما يشاءون إلا أن يشاء ألله .

On the other hand, the science of tajweed علم ألتجويد deals with the processes of the vocalization of the individual word sounds, regardless of the 'reading' in the technical sense above. That is, how a person vocalizes the initial sound in the second word in أن يشاء is a tajweed point . On some points, the two overlap, as in the *imaalah* or vowel raising – *mujraahaa* or *mujraehao*, مجريها , مجراها a variation which shows differences in qiraa'ah and entails following the relevant rule of tajweed. (Page 63 in عثمان , 2004) The various readings are seen by the Muslims as blessings, not impediments. (Kelber, 2007: 4)

To Muslims, the term 'tajweed' is almost a household term, since tajweed is an element in school curricula and in the activities of mosques and Quran-related organizations and societies, جمعيات المحافظة على القران الكريم .

To most non-Muslims familiar with its existence, the Quran has for long been presented and read as a written text (Nelson, 2001: xvii). It has been the subject of investigation from varied discipline orientations, presentation focus, interpretation, textual structure, and point of argumentation. However, this research article is not about the Quran as a written text. Rather it focuses on certain phonetic processes of vocalization which are specified in sources on the tajweed. Within the general area of Quranic studies, tajweed is subsumed under the rubric of the recitative sciences or sciences of 'readings' (Gade, 2001: 367 and 2009:485) Tajweed studies and practices focus on: 1) the appropriate sound description for proper pronunciation with reference to the points of articulation, which are called مخارج الحروف . (Leading authors in this respect are, in ascending historical order: (2 سيبويه , ابن جني , أبو الحسن ألسعيدي , ابن سينا , مكي بن أبي طالب , ألداني , ألقرطبي) whether and which contiguous consonants can undergo assimilation, 3) the relative duration of vowels, and 4) the types of open and closed juncture.(موسى2003: 11, Graham and Kermani, 2006: 118 and Gade, 2009: 485)

After the relative standardization of the written form of the Quran on the orders of the third Calif of Islam, Othmaan Bin 'Affaan, certain styles of reading became more popular among the Muslims of particular regions than other styles; still other styles became popular in other regions. Some individuals with strong feelings about maintaining the original oral form of the readings began the process on encoding the description of the readings in writing. The first published work on the authentication of accepted readings is believed to have been done by Ahmad Bin Jubayr Al-Kuufi (died (henceforth d.) 258 Hijra. Please note that the dates given are in this calendar, not the solar Gregorian calendar.). Bin Jubayr canonized five styles of reading, representing the reading styles that eventually evolved in the five cities which received the five Othmaanic codices: Mecca, Medina, Kufa (Iraq), Basra (Iraq), and Damascus (Syria). However that book only charted the road and alerted the protectors (?) of the Quran text to the need for such works. It was followed by the work of Bin Mujaahid (d.324), who described the reading styles of seven reciters, and named two associates for each whom he called the transmitters or describers of that style. His choice of those seven readers has always been upheld, with no challenges.(حبش , 2001: 55) Inadvertently or otherwise, he perpetuated the idea that there are only seven ways of reciting Quran. This number, seven, happens to parallel the number 'seven' in a saying attributed to the Prophet to the effect that revelation of the Quran had been in seven styles, commonly referred to as 'ahruf', i.e., 'letters'. (For details on this issue, please see the research by محمود ألجفال .)

Writing on the subject flourished over the next few centuries and matured by the ninth century of the Muslim calendar. Since then, publications on tajweed have been mere annotations and explanations mostly of the canonized readings. Despite the existence of many other sources, the overwhelming majority of the writings have been recycling the tajweed rules described by Al-Shaatibi, Al-Qurtubi, Bin Al-Jazari, and Al-Sakhaawi.(286 – 285 : 2001 , حبش)). The names of those seven readers are listed below, following the their respective cities of association.

1) Medina: Naafi' Bin 'Abd Al-Rahmaan (Al-Madany) (d.169), transmitters: Warsh (d.197) and Qaaloun (d. 220)
نافع بن عبد الرحمن (ألمدني) راوياه : ورش , قالون

2) Mecca: 'Abdullah Bin Katheer (d.120), transmitters: Al-Bazzii (d. 250) and Qunbul (d.291)
عبد الله بن كثير (ألمكي) راوياه : ألبزي , قنبل

3) Damascus: 'Abdullah Bin 'Aamer (d.118), transmitters: Hishaam Bin 'Ammaar (d. 245) and Thakwaan (d.242)
عبد الله بن عامر راوياه : هشام , ذكوان

4) Basra: Abu 'Amr Zabbaan Bin Al-'Alaa (d.154), transmitters: Hafs (d.246) and Al-Soussi (d.261)
أبو عمرو زبان بن ألعلاء راوياه: حفص بن عمر ألدوري , ألسوسي

5) Kufa: 'Aassim Bin Abi Al-Nujoud (d.127or128), transmitters: Hafs Bin Sulaymaan (d.180) and Shu'bah (Bin 'Ayyaash) (d. 193)
عاصم بن أبي النجود راوياه : شعبة , حفص بن سليمان

6) Also Kufa: Hamza Bin Habeeb Al-Zayyaat (d.156 or 158), transmitters: Khalaf (d.229) and Khallaad (d.220)
حمزة بن حبيب ألزيات راوياه : خلف , خلاد

7) Also Kufa: Ali Bin Hamza Al-Kisaa'ii (d.189), transmitters: Al-Douri (d.246) and Abul Al-Haarith (d.240)
علي بن حمزة ألكسائي (راوية أبن ألعلاء نفسه) أبو ألحارث راوياه : حفص بن عمر ألدوري (According to حبش 2001: 42 and
(2004: عثمان 2001, and حبش , Gilliot, 2006, Leemhuis, 2006) مصطفى 2004, p.18)

According to (عثمان 1987:13 and حنفي 1987: 47), Naafi's style is now generally followed in the Arab

countries of the Maghreb and in West African Muslim countries, Bin Al-'Alaa's style in the Sudan and parts of Yemen, and 'Aassim's style in Afghanistan, India, Pakistan, Turkey and the rest of the Arab countries. (Unfortunately, no data is available on the rest of the Muslim countries or those with a visible Muslim community.) 'Aassim's (Hafs's description) seems to be more universally widespread at present (21ˢᵗ century) than the other readings. This is a result of its being universally heard during telecast of Ramadan *Taraaweeh* prayers from Mecca every lunar year for the last twenty years. Nonetheless, the worldwide web-based readings allow the user almost the whole range of the seven or even ten styles. Local, national, regional, and international competitions in Quran recitation are periodically held, with first prizes sometimes reaching six digit figures.

3. Codification of Tajweed Rules

In this section of the paper, the phonetic core in the tajweed practice. Our concern focuses on aspects pertaining to phonetic assimilation, as stated in the objective of the paper above (2ⁿᵈ paragraph in the tajweed section).

The systematization of the rules of tajweed began relatively early in the second century of the Hijra calendar. The earliest to build a corpus of readings was عبيد القاسم بن سلام(d. 222 or 224) in a work with the title القراءات, (حبش, 2001:33). As was customary in works on standardization in general (syntax, rhetoric, Islamic law, etc.), the rules of tajweed were composed in poetry, probably to facilitate memorization; the earliest of these poems (51 lines) was entitled (the *good* quality of oral *performance*) حسن الأداء , composed by Al-Khaaqaany (الخاقاني) (d. 325); several others followed in later centuries. About two hundred years later, the longest (1,173 lines) poem on the seven readings was composed by Al-Qaassim Bin Fiyyurah Bin Khalaf Bin Ahmad Al-Shaatibi (Al-Ru'iini Al-Andalusi) (d.590) (ألقاسم بن فيرة بن خلف بن أحمد ألشاطبي الرعيني ألأندلسي ألضرير). حرز الاماني ووجه He is often referred to as Al-Shaatibi and the poem is commonly cited as '*Al-Shaatibiyyah*' التهاني في ألقراءات ألسبع (ألشاطبيه). It has been the bench mark work which later authors used as their reference. (حبش 2001:53) The short title for the poem is ألشا طبية . The structure of the poem is highly complex, for he named in the relevant lines a letter for each reader by himself and another symbol (of one or more letters) for each of the varied combination of the readers (on the basis of agreement on the vocalization of a word or on a rule). (See حبش, 2001 p. 292/3 for a sample list of such works.) Ten sections in the poem deal with issues pertaining to the focus of this article (5: complex assimilation, 6: intra- and inter-word assimilation, 13: simple assimilation, 15, 16, and 18: individual consonants at the end of each of بل , قد , إذ : 19 : concurrence among readers, 21 : the /n/ of the stem and the suffix marker of indefinite nouns, 24 : /r/, and 25: /l/).

Later on, Al-Sakhaawi (d. 643) wrote another poem on the subject, and two centuries after that, Bin Al-Jazari (d. 833) composed a poem in 243 lines specifically for the three additional readings, not described in the Shaatibiyyah. He called it ألدرة ألمضية والوجوه المسفرة في القراءات الثلاث تتمة العشرة . However, he later claimed to have identified new, specific features in the seven readings, which had not been described in his predecessor's work , Al-Shaatibiyyah. The new features led him to rewrite the rules for the ten readings, now in a new poem (in 1,012 lines) with the title ألنشر في القراءات العشر which he put out in book form entitled طيبة النشر في القراءات العشر, *(Promulgating the Ten Styles of Reading)*. This new format also gained widespread acclaim and has become the second standard reference on tajweed rules. Since the ninth Hijra century (This year (2013 CE) is 1434 in the Hijra calendar), most instruction in readings is based on either of the الشاطبية والدرة) i.e., the works of Shaatibi and Bin Al-Jazari together) or on طيبة النشر by Bin Al-Jazari alone. (حبش , 2001: 285 – 291) Bin Al-Jazari's work has been explicated in scores of books, like that by Al-Shaatibi.

In the following paragraphs, points of direct bearing on the thesis of this essay are summarized from the key figures in the tajweed project.

First, the work of Bin Mujaahid (d. 324) ابن مجاهد charted the way to the building of corpus of rules about the practice of tajweed. The bulk of his work on the seven readings (كتاب السبعة في القراءات) presents the differences among the seven readers (مذهب , مذهب حمزة , مذهب أبي عمرو , مذهب عاصم , مذهب ابن كثير , مذهب نافع) on the recitation of every verse which they did not vocalize in the same way .(Pp. :128 – 703) (الكسائي , مذهب ابن عمار) He also presents (Pp. : 113 – 125) the consonant cluster sequences which involve phonetic assimilation by one or the other of the readers. This part tells us who of the readers assimilated (completely or partially) which phonetic elements within the word and / or across word boundary.

In the Naafi' (نافع) style, the sound /th/ (i.e., what occurs in English initially in <u>*this*</u>) was assimilated to an immediately following /t/ sound within the same word as in اتخذتم , أخذتم . He assimilated the /l/ sound to an immediately following /r/ sound as in بل رفعه الله , قل رب . But nothing definite was apparent about the /l/ sound in كلا بل ران . However, there was a strong imperative on assimilating the /d/ sound to an immediately following /t/ sound at the beginning of a following word as in قد تبين ; similarly, Naafi' had the same position regarding assimilating the /t/ sound to a following /d/ in word-initial position as in فلما أثقلت دعوا الله .

Bin Katheer, (ابن كثير) on the other hand, assimilated the /l/ sound to /r/ at the beginning of the next word, e.g., كلا بل ران .

'Aassim's (عاصم) reading was marked by a position similar to that of Bin Katheer on the /l/ followed by /r/, as in quote above.

Bin Al-'Alaa' (ابن العلاء) had a broader base than the other readers on assimilation; he assimilated the /t/ sound at the end of the verb feminine suffix to a consonant at the beginning of the noun subject (following the verb) كانت ظالمة , حصرت صدورهم , أنبتت سبع , نضجت جلودهم , كلما خبت زدناهم , بما رحبت ثم , .e.g. The same applies to /l/ of هل ترى من as in هل ترى , قل (but not the /l/ of قل). In addition, to him, the /l/ sound of هل in two instances of هل as in كلا بل ران على قلوبهم . He used to assimilate /r/ to the same applies to the /l/ of بل as in فهل ترى لهم من باقية and فطور ; a following /r/ in initial word position, e.g., يغفر لكم , a /b/ to a /f/ at the beginning of the next word, e.g., أو يغلب فسوف .

Hamza (حمزة) produced limited /l/ assimilation of بل an هل; he assimilated it to a following /t/, /ث/, /s/, /r/, /a/, (like Abu 'Amr above, but he also assimilated /ذ/ to a following /ص/ (واذ صرفنا اليك نفرا من الجن) and /z/ as in واذ زاغت الابصار .

Al-Kisaa'ii (ألكسائي) assimilated the /l/ sounds in هل and بل in additional environments e.g., بل , بل طبع الله , ظننتم , بلّ ضلوا , بل زين للذين كفروا .

Bin Mujaahid presents a longer list of words where Bin 'Aamer ابن عامر was at variance with other readers. (Reproducing the list here does not add to the point of the section.)

Bin Mujaahid ends the section with a paragraph about the /n/ sound in word stems and in the grammatical suffix indicating case on indefinite common nouns تنوين (and adjectives, though 'adjective' is never mentioned because it is consider part of the noun class). None of the readers, according to Bin Mujaahid, assimilates the /n/ sound in either of its occurrence types (part of the stem or end of a suffix) when followed by any one of the sounds / غ, ع, خ, ح, ه, ء /; on the sounds /غ, خ/ Bin Mujaahid reports varied attributions for Naafi'. Then, Bin Mujaahid, and later every other author, points to the common agreement among the readers on assimilating a consonant to its own contiguous occurrence, i.e., the release of the articulator is delayed thus making the sound long or geminated.(أن اضرب بعصاك الحجر, إذ ذهب مغاضبا, يدرككم الموت) (Please see Ladefoged and Maddieson, 1999, on consonant length or gemination.)

Another major writer with wide spread circulation of writings and ideas on tajweed is Al-Daani (d. 444). أبو عمرو بن عثمان بن سعيد ألداني ألأندلسي

The codification of tajweed rules was a major concern of this author. He was a prolific writer on Quranic sciences. His biography lists 119 books, some in more than one volume and others in short booklets. About half of these works deal with issues of tajweed. The following information has come from two of his books: ألتحديد في ألإتقان والتجويد وكتاب الإدغام الكبير .

In كتاب الإدغام الكبير , the author explains that the term الكبير [9] refers to the compound process of first deleting a word-final vowel (apocope), which leaves a consonant at the end of a word, and, since a syllable/ word in Arabic always begins with a consonant, a double consonant sequence results from the epenthesis process. If the two consonants in this sequence share sufficient core phonetic features, the conditions of (complete or partial) assimilation of place and / or manner occur.(P. 95, p. 274 in volume 1 of ألنشر, and p. 2 in volume 2 of ألنشر.) For example, in the following verse, وإذا النفوس زوجت , the word *Al-nufuusu* (souls) ends in an /u/ vowel, and the next word *zuwwijat* (paired, reunited) begins with the /z/ consonant; on deleting the /u/ of *Al-nufousu* (producing *Al-nufuus)* a consonant cluster is formed out of the /s/ and /z/ sounds. Thus, the condition is set for the potential activation of voicing assimilation to the /s/ sound. Expressions such as the following are receptive of the complex assimilation: يسألونك ماذا أحل لهم , ذوقوا مس سقر . The consonants subjected to this compound process are classified into seven sub-categories: 1) those that do not assimilate or cause assimilation, 2) those that can assimilate and be assimilated to, 3) those that assimilate only to themselves (i.e., forming a geminate), 4) those that can assimilate to similar consonants, 5) those that assimilate to similar consonants but do not act as assimilators, 6) those that can assimilate to non-contiguous consonants, and 7) those that can assimilate only to contiguous consonants (p. 97). When the consonants in this complex list are thoroughly examined, there appears to be a mixture or combination of principles at work, e.g., the direction of assimilation (regressive, i.e., anticipatory, or progressive, i.e., perseverative, consonant strength (lenition) / or weakness (e.g., fricatives versus stops), and velarizatioin.

In contrast to the compound assimilation process, there is the simple assimilation process, the universal process. However, the tokens to which the process is applied shows inconsistencies, as will be shown below.

The second book of Al-Daany's which deals with the rules of tajweed is ألتحديد في ألإتقان والتجويد . One of the features of this work for the purposes of this paper is the evaluative judgments he culled from his contemporaneous scholars about the seven readings. Below is a sample of such judgments. 1) The use of the glottal stop in the word (مؤصدة) (closed or locked) (Sura 90, verse 20) is described as ear-piercing to the listeners. إمامنا يهمز **مؤصدة** فأشتهي أن أسد أذني إذا سمعته يهمزها (2 Recitation based on that of Bin Katheer's is good, on Naafi's is smooth, on 'Aasim's is well-articulated and pleasing to the ear, on Hamza's only claims to match his style but in fact does not, on Kisaa'ii's is moderate, and that adopting Bin 'Aamer's is the median between extremes. (Idem: 92-94)

Phonetic conditions that motivate assimilation are those that contain a cluster of two consonants which share core features or near-identical features. Consonants, by this criterion, are split into two categories with

intra-category potential for assimilation: the pharyngeals on one hand and the rest on the other. Across word boundary the cluster pair may be identical; in this case, the tongue (or the lower lip in the case of labial sounds) makes a single approach to the point of articulation and is held in that place for a longer time (in milliseconds) than it would for producing either of the two sounds. If the cluster consists of two coronal consonants, then the first member in such pair is totally assimilated to the second member of the pair. The third possibility is that of partial assimilation (which they call إخفاء); in such a case partial assimilation operates while maintaining nasality for the blended new sound. (Idem: 99-101) (More on the complexity of this please see below.)

The next section in the book explains the rules for the /n/ sound in both of its possible positions of occurrence. (See above, please.) First, the /n/ is not the object of assimilation to the immediately following consonant if it is any of the following: (ء, ه, ع, ح, غ, خ) as in such phrases:

يومئذ خاشعة , من خيل , قوما غيركم , نار حامية , من حاد الله , يومئذ عليه ا , جرف هار ' شيء إلا

Second, the /n/ may be assimilated in five case types, when followed by any of the following sounds: م, و, ي, ر, ل as in such phrases:

نار مؤصدة , من مال الله , يومئذ واهية , من وال , من ربهم , ومن يقل , ومن لم يتب , خيرا لهم

Al-Daani points out his disagreement with the practice by other readers / authors who include /n/ itself also because, he argues, the assimilation in the latter case does not produce what the former case does produce. (Idem: 111-112) Al-Daani also points to the loss of nasality from the /n/ when assimilated to /l/ and /r/. (This nasality change will be discussed below, together with other features which current phonetic knowledge does not support.) On the other hand, the /n/ retains nasality when the assimilation is to /y/ (palatalization) and /w/ (labialization) عدو لكم, أن يصدقوا, except for Hamza. (Idem: 113/4) (Current knowledge lends support to Hamza's position. More on comes below.) Word-medially, however, the /n/ does not assimilate to a following /w/ or /y/ as in قنوان, صنوان, بنيانه , ألدنيا . The total assimilation of /n/ in both types (above) to a following /b/, /m/, /l/, or /r/ is also done (it is called iqlaab اقلاب), e.g., فويل للذين , ممن منع , من رب رحيم , من رب لجي , في بحر لجي , ظلمات بعضها فوق , جدد بيض , أنبئهم ,
Partial assimilation of /n/ to a following consonant does not, however, vary with the possibility that the next consonant is a coronal stop or a coronal fricative; the (following) coronal consonant types act as if they were fricatives. That is, /n/ + /t/, /n/ + /d/, result in an /n/ that is an approximant just like /n/ + /s/, /n/ + /z/, /n/ + /ش/ result in an that is an approximant, (to be discussed below) and the outcome of /n/ + /f/, /n/ + /ث/ , /n/ + /ذ/ result in a labio-dental fricative and a dental fricative respectively. This tajweed vocalization occurs in phrases and words such as منشور ا, إن زعمتم , منسيا , من ذكر , منثورا , أنفسكم , قوما فاسقين , إن كنتم , عنده , أنتم , انقلب على وجهه , ولئن قلت . (Idem: 115)

The process of 'total assimilation' (called ikhfaa' إخفاء) is applied to a long list of sounds, despite the differences in the manner of articulation. (More on this follows below.)

When the /q/ consonant is immediately followed by the /k/ sound, the /q/ becomes a /k/, a phonetic environment that occurs only in one phrase in the entire Quran text (Sura 77 verse 20) ألم نخلقكم . The total assimilation process is obvious in the length of the resultant /k/. (135/6)

A generalization about the occurrence of voiced and voiceless consonants in contiguity summarizes the principle against devoicing the voiced and voicing the voiceless. (Idem: 131) والحروف المهموسة إذا لقيت الحروف المجهورة , والحروف المجهورة إذا لقيت الحروف المهموسة فيلزم ...بيانها , لئلا ينقلب المهموس إلى لفظ المجهور , والمجهور إلى لفظ المهموس , فتختل بذلك ألفاظ التلاوة وتتغير معانيها .

Moving on to the ط sound, the author says that this sound may assimilate (i.e., not in all readings) to a following /t/, (but does not alert the reader to the quality of the new, resulting sound; the new sound is not a pure /t/ but one that is mildly valorized). فرطتم , أحطت , لئن بسطت

The /d/ sound assimilates to an immediately following /t/ in voicelessnes (or devoicing) , حصدتم , عدتم , ومهدت له , قد تبين , لقد تاب الله , وقد تعلمون

However, it does not assimilate to an immediately following /l/ or /r/, /n/ , /m/, /q/, /f/, أ , ع , ح , خ , لقد رأى , لقد لقينا . The /t/ sound occurring قد نرى تقلب , قد نعلم , مدخل صدق , ليدحضوا , مدحورا , لا تدري , يدمغه , ادفع , الودق , immediately before a /d/ or a ط completely assimilates as in وقالت طائفة, أجيبت دعوتكما (Idem: 138/9) When ذ precedes ظ, it completely assimilates completely to the ظ as in إذ ظلموا أنفسهم . The author does not mention the phonetics of a ذ when immediately coming before other alveolar / coronal consonants such as /z/, /s/, or /ث/.

On the /l/ sound, the rule is that it is totally assimilated to an immediately following /r/ as in قل رب , فقل ربكم , بل The editor of the Daany كلا بل ران , رفعه , بل ربكم , but only Hafs would not assimilate the /l/ to the /r/ in manuscript says in fn. 36 p. 157 referring to another work by Al-Daany (ألتيسير) كان حفص يسكت على ا للام في (بل ران) . (Idem: 157) ثم ينطق بالراء , والباقون يصمون ذلك من غير سكت ويدغمون اللام في الراء. Al-Daani reports that the sequence of a word final /f/ and an immediately following word-initial /b/ is subject to assimilation by some readers but not by others as in نخسف بهم الارض (Idem: 164). A similar option obtains in the case of a final /b/ followed by an initial /m/ أو يغلب فسوف , وان تعجب فعجب and the case of a final /b/ followed by an initial /f/ as in يا بني اركب معنا (Idem: 157). On the /m/ sound, Al-Daany warns against place assimilation of /m/ from bilabial to labio-dental when the /m/ is followed by an immediately following word-initial /f/ (the only labio-dental in Arabic) as in هم لاريناكهم فلعرفتهم , ويمدهم في , فيها and many instances in the Quranic text, although al-Kisaa'ii is reported to done the

place assimilation (Idem: 165). Another point of disagreement among readers concerns the final /m/ (a nasal bilabial) when it immediately precedes a /b/ (an oral bilabial) sound. Their disagreement pertains to either pronouncing the /m/ followed by the release of the lips (+ juncture) then pronouncing the /b/ or to pronouncing both sounds with one (but longer) closure of the lips (close juncture). (Idem: 166/7)

The third scholarly figure is Al-Shaatibi ألقاسم بن فيرة بن خلف بن أحمد ألرعيني ألشاطبي
Born blind in Shaatibah (Hence the identifying last name), Spain in 538, rose to the status of a great scholar and Hafiz of the Quran. He began writing the tajweed poem in Shaatibah in 572 but finished it in Cairo, where died in 590. It carries the title حرز الاماني ووجه ألتهاني في القراءات السبع He based his presentation on the earlier work of Al-Daani of the seven readings ألتيسير في القراءات السبع. The work eventually became a standard reference on tajweed. (2002 ,منصور واخرون: 13-15) . Al-Daani's التيسير was not used above as the base for his work in order to avoid too much repetition. The format is however different from that by Al-Daani.

In section 14 of the work, the rules for the ذ sound of the word اذ are presented. The readers نافع , ابن كثير , عاصم اذ تبرأ , واذ زاغت so did. خلاد , الكسائي whereas both ج , س , د , ص , ز , ت did not assimilate this sound to a following واذ صرفنا , اذ دخلوا , اذ سمعتموه , واذ جعلنا,Other readers had varied combinations of the sequences. (Idem: 128) The next sound in section 14 deals with the /d/ sound of the word قد. Readers who did not assimilate the /d/ of this word to contiguous ش , ص , ج , ز , ظ , ض , ذ , س were ابن كثير , قالون , عاصم while Warsh assimilated it to ظ , ض but not to the other four sounds. (Idem: 129) However, three readers assimilated it to ظ , ز , ذ , ض ابن ذكوان and made assimilation to the eight sounds across the board were: ابو عمرو , حمزة , الكسائي (Idem: 130)
The /t/ sound, the feminine morphological marker on the past tense of the verb, as in أنبتت سبع سنابل , كذبت ثمود , was assimilated to the next sound by قالون , عاصم , ابن كثير لهدمت صوامع , كلما خبت زدناهم , كانت ظالمة , نضجت جلودهم whereas Warsh assimilated it to ظ only; other readers had other ways.
As for the /l/ sound of the words هل , بل , only الكسائي assimilated it to each of the following sound when they occurred after the /l/ as in هل تعلم , هل تحسدوننا , هل ننبئكم , بل نحن , هل ثوب الكفار , بل سولت لكم , بل ظننتم , بل ضلوا , بل زين , بل طبع الله . There different practices by the others. (Idem: 131/2) Meanwhile, there was a consensus on assimilating ذ to a following ظ , اذ ظلمتم , قد تبين a /t/ to a /d/ as in اثقلت , or assimilating /d/ to a following /t/ as in دعوا
The following paragraphs sum up the agreed points from the above presentation of individual scholars, practitioners.

3.1 Recapping the Phonetics of Tajweed Practices:
the Assimilation Processes
As mentioned above the tajweed practices and the rules which the practices have not changed over the centuries. This does not preclude differences among the founders of the tajweed project, nor among the practitioners of tajweed itself. On the whole, the similarities outweigh the differences by far. In this section, the assimilation rules and their phonetic environments are reproduced for the purpose of having an integrated picture on the points of consensus. This survey has traced the most widespread reading at present, that of 'Aassim, and listeners to this style are very much likely to think of it as the only or only valid style. As can be seen from the following list showing features of consensus among all styles, there are authenticated variants on many aspects. However, I include in the list those features on which four or more out of the seven canonical readers agreed.

1. They all report assimilation to be regressive or anticipatory , going from sound number 2 to sound number 1 in a consonant cluster.
2. On the /n/ sound, whether in the stem or in the affix marker of indefiniteness, they assimilate it completely to all non-pharyngeal consonants including itself. When assimilated to /l/ or /r/, the /n/ loses nasalization.
3. They all assimilate the /n/ completely to a following /b/, thus producing a kind of an /m/ sound with no total closure but with a slightly open aperture, as if it were a bilabial nasal fricative. This process applies to both intra- and inter- word contexts. (The terms in Arabic do not matter, in my view.)
4. The /n/ assimilation rule in 3 above does not apply to the /w/ and /y/ in the following words. دنيا , قنوان صنوان .
5. With the exception of two instances in the Quran text ن والقلم وما يسطرون , يس والقران الحكيم , they all assimilate the /n/ sound to the following labio-velar /w/ sound. (With one exception; see 4 above.)
6. They all agree that the ذ sound of the word/particle اذ assimilates to a word-initial ذ or ظ sound.
7. They all agree that the /d/ sound of the particle قد assimilates to a word-initial /d/ or /t/ sound.
8. The assimilation of the /l/ sound of the particle هل and the particle بل to the next /l/ or /r/ sound in the following word is common to all reading styles.
9. A word-final /t/ affix marking feminine subject assimilates to any of the following sounds at the beginning of the word ت , د , ط .
10. An /m/ sound in word-final position DOES NOT assimilate to a following voiceless labio-dental

fricative, /f/. وهم فيها خالدون

In the section below, a recapitulation of the current common thinking on issues relevant to the above points draws a general framework for looking into the principles of tajweed presented above. Our main concern points out where the principles do not match.

4. Current Phonetics Thinking on Assimilation

At this point, it is necessary to preempt any possible criticism (however remote it may be) that it is unfair, if not fallacious, to preferentially compare knowledge at two historical stages. In my humble view, it is fallacious to draw the comparison. Therefore, I would like to put it in no uncertain terms that we are not critical of anything in which time and cumulative knowledge are the crux of the issue. In clear terms, it should be emphasized that the phonetic foundation on which the tajweed rules were based centuries ago was the most advanced state of the art foundation in phonetics at the time. No other culture had phonetic sophistication that surpassed that of the (Arab and non-Arab) phoneticians of Arabic and reciters of the holy writ. Therefore, what follows should not be construed as underestimating the efforts put into abstracting from pronunciation (i.e., raw data) rules and schemata of tajweed. Building knowledge is cumulative and scholars depend and build on the work of others before them in time. Therefore, no comparison is being held here. Rather, the developments and advances made by specialists on what their forerunners had offered have led us to the present state of 'advanced' knowledge. Since the nineteenth century (marked by the formation of the International Phonetics Association) and up to the digitization revolution of the twenty-first century, great leaps have been made in phonetic knowledge. Knowledge of speech and sound articulation has been phenomenally multiplied by the use of tape recorders, oscilloscopes, palatographs, and other and more cutting edge technological instruments and techniques (e.g., magnetic resonance imaging (MRI), sonography, digital acoustic analysis, mandibular photography, tone, stress, and intonation representation etc. (Zsiga, 2008: 14, 32-33, and 36)). Such advances have made it possible for the experts to engage in speech synthesis decades ago (in a sub-field of phonetics and electrical engineering called 'acoustics'). Furthermore, laryngoscopy has enabled us to see the vocal folds / cords in action, while the subject is talking naturally, singing, or reciting Quran. It is this kind of knowledge that aids specialists in diagnosing pathological cases and making the appropriate prognosis.   Now, there are computer software programs that do phonetic analysis for changing speech into writing and vice versa, i.e., changing a text that is entered in writing onto the desk top screen into speech (speech to text and text to speech, respectively). Now, more ways and means of ascertaining the features of pronouncing sounds in isolation (distinguishing sounds simply by reading spectrograms and examining the formant patterns), words in isolation (i.e., in the citation form), and words in connected speech help investigators to recognize, identify, and contrast what in the past could not be distinguished by objective means. Now, we can see farther (than our academic ancestors did simply) because we are standing on the shoulders of those giants.

The description of sounds in articulatory phonetics proceeds by analyzing spoken language (or speech) into units of hierarchical structures or levels from the phone level up to the discourse level. At the sound level, the units are subdivided into segmental and prosodic or supra-segmental elements. At the segmental level, a speech sound consists of a number of features or values, some of which are shared by other sounds. (Ladefoged and Maddieson, 1999:5) The shared features allow theoreticians to classify sounds into classes. Since our concern here is with consonants, the features that are relevant for this discussion are:

1. whether the air stream is released from the oral or nasal cavity determines orality and nasality of the consonant, (oral consonants by far outnumber nasal consonants),
2. the part of the lower jaw (the lower lip and the tip (apex), front (lamina), the blade, or the back of the tongue) that moves toward a target point or region in the upper jaw, (the active articulator)
3. the point or region which is the target of the active articulator, (the passive articulator, the point or place of articulation); to specialists there are 15 – 18 points of articulation from the lips to the vocal folds/cords, and whether the air stream is released over the sides or the center of the active articulator (producing the laterals and the center consonants),
4. the extent of blockage to the air stream between the active and passive articulators (commonly called 'manner of articulation'; the closure may be total (producing stops), nearly total (producing fricative), begins total and then decreases to make friction (producing affricates), or a little more than friction-generating blockage (producing approximants, the /y/, /w/, and for some specialists /r/,and
5. the activity (or lack thereof) of the vocal folds /cords (producing voiced or voiceless consonants.

In the following, the discussion relates to consonants only, though vowels influence each other, in the process termed 'vowel harmony' ألاتباع.

Theoreticians consider the influence of neighboring consonants on each other to be the result of the speaker's desire for expending less effort and saving on the time needed for the pronunciation of the individual phoneme. (Whereas the speaker tends to save on effort and time (a tendency toward saving), the listener tends

toward the same principle but as it is related to the perception of speech, desiring maximal distinction of pronunciation. Eventually, a balance between the expectations is struck. (Jun, 1995) Speakers of all languages engage in some kind of assimilation leading to consonant cluster simplification, but they may not be aware that they are doing so. (Collins and Mees, 2008: 115/6)

The direction of assimilation may be forward in the linear flow of sounds, i.e., progressive/ perseverative, or it may be in the opposite direction to the linear flow, i.e., regressive/anticipatory. Both types of direction of assimilation occur in languages, but some languages seem to display a higher level of incidence in a direction than in the other. English speakers, for example, favor the anticipatory/regressive type whereas the French and the Italians favor the perseverative/progressive type (Ladefoged, 1993: 56). That is, while the assimilation process depends on objective phonetic conditions, its activation, extent of application in terms of type and token, and patterns of assimilation depend on subjective social choice. (Coenen, et al., 2001:536 and Winters, 2003)

Both complete and partial assimilation, especially the regressive sub-type, can lead to surface weakening or elimination of underlying phonemic oppositions or distinctions. (Gaskell, 2003: 447) As will be shown below, the phonetic realization of an /n/, /m/, /t/, or /z/ phoneme may neutralize the opposition between that phoneme and another phoneme. Furthermore, Son (2008) research for the PhD degree at Yale University involved the study of gestural (or articulatory) overlap and gestural reduction in Korean. In an experiment, using midsagittal articulometry techniques on the study of assimilation in Korean, Son concluded that in the behavior of clusters, labials and coronals were the target of assimilation more often than dorsals; that is, the change in (or reduction of) articulatory gestures occurred more frequently in labials and coronals than in dorsals. (P. 233)

For a consonant to assimilate to another one or to coalesce with it, the process would have to involve one or more of the feature values of one, the other, or both. As it is the norm to classify consonants on the dimensions of place, manner, voice (or energy, Collins and Mees, 2008: 116), and nasality (The ingressive air stream mechanism is irrelevant in the case under study.), assimilation has been categorized into the same dimensions, viz.: place, manner, voice, and nasality. Research has demonstrated that consonants vary in the level of susceptibility to assimilation. Alveolar consonants (in terms of place of articulation) and coronal consonants (in terms of the active articulator involved in consonant production) assimilate more frequently than other consonant categories. Some specialists consider de-alveolarization of alveolar consonants the most prominent kind of assimilation, and claim that coalescence (reciprocal influence of consonants) comes in the second rank (Small, 1999) . Winters' 2003 PhD dissertation concludes that nasals are more prone than stops to assimilate. Consequently, nasals exhibit weaker cues for precise perception/recognition of their place of articulation.

Place assimilation from alveolar to labial is illustrated by the change of the place of production of a consonant on the basis of the following consonant (in English as an example of languages of regressive assimilation). This is illustrated in the pronunciation of 'foot path' as 'foop path', in which only one feature of the /t/ changes while the others (manner, voice, and nasality) do not; we find the same principle at work in pronouncing 'can be ' as 'cam be'; the same applies to 'pen pal' becoming 'pem pal', the bilabial /m/ nasal at the end of the first word in 'come forward' becoming labio-dental (but retaining the voice, stop, and nasality features), and 'gate keepers' becoming 'gake keeper' and so on. In all tokens of this type, a stop assimilates to a following stop that is different in the place of articulation; i.e., stop + stop gives a new stop product stop1.

On the other hand, manner assimilation may change a stop to a non-stop consonant, depending on the sound after, which underlies the process of assimilation. We can observe this in regressive assimilation involving an acting fricative consonant on an /n/, or other alveolar stops, would incorporate the fricative feature in the stop consonant as in 'insult', 'in summer', and 'that city'. The stop sound /n/ at the end of the syllable or word acquires the fricative feature from the next sound. In short (the phrase *in short* itself contains this sequence), this can be represented in the equation: "stop + fricative" can cause the loss of the stop feature of the first member of this cluster. In conditions where the sequence of consonants includes an alveolar stop followed by a palatal (or post-alveolar), the process of palatalization occurs involving both place and manner assimilation as in 'ensure' 'in short' ' tease you' , 'did you', and 'censure' . Some call the incidence of the sound /y/ as the cause of palatalization 'yod coalescence'. In other words, both the /y/) yod) and the consonant undergo place adjustment to each other, thus the assimilation process yields the difference between the two pronunciations of words like *individual, opportunity,* and phrases like *miss you, last year, as you, did you,* and *let you.*

The third subtype of assimilation is that of voice. In English, this underlies the devoicing of the regular plural morpheme /z/ in words that end in a voiceless plosive stop, e.g. *cats, books*, and *stops* (cf. *dogs, boys*) and the morpheme expressing the third person singular as in *eats, speaks* , and the possessive marker in phonetic environments of the same type, e.g., *Pat's book, Jeff's idea,* and the devoicing (or late VOT – voice onset time) of liquids after voiceless plosives in English, e.g., *play, tray*, and *clay* illustrate the work of this principle. Furthermore, intervocalic /t/ in some English varieties, as in *writing,* and *betting,* acquires the voicing feature on the same principle. The /t/ and the /d/ phonemic opposition is neutralized in such and similar occurrences of the /t/ phoneme.

The nasality of nasal phonemes may extend to neighboring (non-nasal sounds. For instance, vowels preceding nasal in English words, such as *ten, blame,* and *sing,* may be nasalized in anticipation of the following nasal.

5. The Interface between Tajweed and Phonetic Rules on Consonantal Assimilation

Having looked at major aspects of consonant cluster assimilation in current phonetics knowledge, we can now identify the points on which the tajweed rules are in consonance with what occurs in languages and the points which seem to contravene or show a phonetically unnatural process. The term *natural* refers here to what can be motivated or explained by reference to musculature or gesture mechanics. If a gestural rationale can be identified on the basis of its occurrence in languages, the phonetic conditions for assimilation obtain. However, having the 'right' conditions does not entail that the process is activated in one or more of the languages of the world, including Arabic. Below, an interface of the tajweed rules and current scholarship on the topic is drawn.

On the first point, the direction of assimilation, the tradition indicates that assimilation in tajweed rules is anticipatory. This is a confirmation of the generalization in current phonetics that some languages are more anticipatory than perseverative.

On the second point, the assimilation of /n/ to following consonants, current phonetic knowledge upholds the tradition only on the fricatives. In this group, the /n/ sound acquires the fricative feature from the following fricative consonant. The rules of tajweed on the glides /w/ and /y/ are also confirmed by current knowledge in phonetics.

However, on the plosives, the tradition does contravene the principles of current phonetics in a very striking deviation or anomaly. كنتم , ان شاء الله in the following two phrases, the /n/ sound is changed to an approximant, in a process they call اخفاء. It is clear, however, that the sound following the /n/ sound in the first instance is ش, which is a fricative; in the second instance, on the other hand, the sound following the /n/ sound is a stop. Naturally, their effects on the preceding /n/ must be different. The /n/ sound is a (nasal) stop, in the sense that in producing it the air stream is totally blocked in the oral cavity. The airstream is not held or trapped in the oral cavity; rather, it is released through the nasal cavity and this is why it is a continuant, but certainly not a fricative. The Arabic /t/ and /d/ phonemes are stops and plosives (in the sense that the air stream is held (or trapped) in the oral cavity (with the passage to the nasal cavity completely closed) until the articulators separate and make the plosive feature. Therefore, when the /n/ precedes these consonants in a cluster formation, the assimilation should be only in place but not in manner because the latter possibility has NO phonetic conditions to support it. The rule of إخفاء is completely phonetically irrational because it generates an /n/ sound that is an approximant in an assimilation process to a stop. In short, the tradition confuses fricatives and stops although both categories are described properly and correctly categorized to an acceptable degree, considering knowledge in former times.

Thirdly, the assimilation of /n/ to an upcoming /b/ changes the place of articulation for the phoneme /n/, from dental or alveolar (depending on which description one subscribes to) to bilabial but does not change the nasality of the (new) sound. In the tajweed tradition, the /m/ sound, whether it is the underlying or the surface form seems to be construed in a very 'unnatural' way. The description of this /m/ sound makes it either a bilabial nasal fricative followed by a bilabial stop, or a bilabial nasal affricate in the sense that the lips are closed at the beginning of its production, then they slightly separated, than they are brought back together for the production of a voiced bilabial oral /b/ sound. This is what the tradition calls إخفاء شفوي . As is obvious, there is no justification for introducing the fricative feature within an all-stop environment.

As for the fourth point of consensus in the tajweed tradition, the rule concerning /n/ does not apply to certain specific words. This exclusion from the rule domain is not groundless in current knowledge. There are phonetic rules that do not across the board, but they are lexicalized, i.e., restricted in application to certain items. Here, again the tradition rule is not anomalous.

Again on the /n/ sound assimilation to /w/ in two instances, ن والقلم , يس والقران , it is hard to find a principle in current phonetics to evaluate the position of the tradition; nor can we find support for the rule in the tradition. However, we may venture an idea. The ambiguity of the judgment derives from the absence in the literature of the basis for writing the sounds in letter form not letter name; for example, writing /l/ could be simply l or el, or jee (for g), and so forth.

On the sixth point, the assimilation here is one related none of the dimensions of place, manner, voice, or nasality. The issue concerns the feature of velarization, which is phonemic in Arabic, unlike the velarization of /l/ in English, which is only phonetic. There are two sets of consonants in Arabic by this criterion: the plain and the velarized consonants. There are two sets of consonants in Arabic by this criterion: the plain and the velarized consonants. ألمرققة والمفخمة

The seventh and eighth points relate to the class of words called 'particles', not nouns or verbs. (Arab grammarians still think in terms of three parts of speech: nouns, verbs, and particles.) There is no phonetic justification for restricting the assimilation of the /d/ to other sounds or the /l/ to other sounds. Normal speech in

current Arabic exhibits such instances of assimilation. However, the principle still stands that the activation of phonetically motivated assimilation is a subjective, optional choice.

On point 9, the founders of the traditions seem to have included grammatical functions in phonetic realizations of sounds. We do not find support for this in current phonetics; nor can we find a refutation for their position. To what extent can grammar provide a base for phonetic realization of phonemes can be a valid issue for future investigation.

Finally, the issue of the /m/ assimilating in place to a following /f/ sound seems to contradict the rationale of assimilation. While assimilation is considered to be based on natural speech which reduces the recognition features of the sounds, other rules are justified on the basis of avoiding phoneme overlap. Pronouncing من يشكر as /mayyashkor/ produces a name of a female in the first word, which dies not fit in the context. On the other hand, assimilating the /m/ to the /f/ would not bring in as much semantic violation in the phrase.

6. Conclusion

This study has attempted to question the phonetic validity certain rules of Quranic tajweed within the general field of the sciences of the Quran reading in the tajweed style. The presentation was made from the perspective of socio-phonetics. Giving special attention to the holy word is a universal element of faith in world religions and has historically been the prime motive for many pioneering language studies. The survey of tajweed practice has shown that the same reader may not be consistent in his style. The variations, however, whether in reading style or vocalization, do not undermine the sanctity of Quran, its meaning, or its form.

The study aimed at finding elements in tajweed rules of vocalization that were based on principles in phonetics that still hold validity. It also aimed at identifying rules that do not meet criteria of phonetic principles, especially as regards consonant regressive assimilation. Most people who are exposed to the tajweed practice are now familiar with only one reading: Hafs from Naafi'. Despite its international standing, it is not any different from the less known styles in that they all have some phonetically unmotivated ways of vocalization. It is our humble suggestion that the unmotivated vocalizations be brought to what is phonetically plausible.

Notes

1. One of the major motivating factors for some Quran phonetic studies in the first millennium CE was pedagogic, addressed to those whose proficiency in Arabic pronunciation was a potential source for (what specialists in language learning call *global*) problems.
2. We are not concerned in this paper with the debates over the recitation styles or readings. For readers who are not proficient in Arabic, Nelson, 2001 is the most detailed and dispassionate study on this issue.
3. For the history of writing on this topic, see p. 12 ff. in 2006 (شكري وآخرون).
4. This is in the sense of having met the agreed criteria of validity set by the majority of scholars. There were however readings which were considered unsupported by means and measures of authenticity. The case of Shannabouth ابن شنّبوذ retracting his arguments for and practice of certain readings, maverick readings, so to speak is reported on page 38 in ألنشر في القراءات العشر لابن الجزري .
5. Centuries later, Ibn al-Jazari first described only three, then seven, and finally ten readings. For the most recent research on the concept of the seven readings, see the following source: الحديد , forthcoming.
6. Some criticized him for making the number of the readings coincide with the number of 'ahruf' in the widely referred to hadiith; see ألحديد (forthcoming) on the debate on 'the seven *ahruf*
7. In the course of time, scholars of readings added some other variant readings, first raising them to ten, then to fourteen, then to forty after the ten. (See ابن الجزري (d. 833) p. 76 on the 40 + 10 by أبو القاسم يوسف المغربي ألهزيلي (d. 465 in Nisaabour)).
Indeed no change has been made on the specifications (p.13 in عثمان 2004)
7. This reading (with a glottal stop) used to be common in the Hejaz region in the first century Hegira. That is why it is still acceptable canonical reading. According to Bin Mujaahid, ان أهل المدينة كانوا لا يهمزون حتى همز ابن جندب أستاذ نافع. (p. 60)
8. Many authors dealt with the compound and simple assimilation in Quran recitation. Below is a sample of titles and authors:

رسالة في ألإدغام/الكبير   أبو عمرو بن ألعلاء ألبصري (ت 154)

كتاب ألإدغام   (أبو زكريا) يحيى بن زياد ألفراء (ت 207)

كتاب ألإدغام   أبو حاتم ألسجستاني (ت 255)

إدغام ألقراء   أبو سعيد ألسيرافي (ت 368)

كتاب ألإدغام أو شرح ألإدغام وعلله   أبو بكر أحمد بن حسين ألاصبهاني (ت 381)

كتاب ألإدغام أبو ألحسن طاهر بن عبد أمنعم بن غلبون (ت 399)

كتاب ألإدغام ألكبير   مكي بن أبي طالب ألقيسي (ت 437)

References

Bayley, Robert and Ceil Lucas. Editors (2007) *Sociolinguistic Variation*. Cambridge: Cambridge University Press.

Bedford, Ian (2001) 'The interdiction of music in Islam,' *The Australian Journal of Anthropology*. Vol. 12, Issue 1, pp. 1 – 14.

Coenen, Else, Pienie Zwitserlood, and Jens Bolte (2001) 'Variation and assimilation in German: consequences for lexical access and representation,' *Language and Cognitive Processes*, 2001, 16 (5/6), 535 – 564.

Collins, Beverley and Inger M. Mees (2008) *Practical Phonetics: A resource book for students. Second Edition.* London: Routledge.

Cragg, Kenneth (1973) *The Mind of the Qur'an: Chapters in Reflection*. London: George Allen and Unwin

Dardess, George (1995)'When a Christian chants the Qur'an.' *Commonweal* January 13, 1995, Vol. 122, issue 1, pp. 11 – 14.

Gade, Anna M. (2001) 'Recitation of the Qur'an,' in McAuliffe, ed. Vol. 1, pp.: 367 – 384.

_____(2009) 'Recitation.' In Rippin, ed., pp.: 481 – 493.

Gaskell, M. Gareth (2003) 'Modelling regressive and progressive effects of assimilation in speech perception.' *Journal of Phonetics Vol. 31 (2003) 447*-463

Gilliot, Claude (2006) 'Traditional disciples [of the Qur'an],' in McAuliffe editor. Vol. 6, pp.: 318 - 340

Gow Jr., David W. and Aaron M. Im (2004) 'A cross-linguistic examination of assimilation context effects,' *Journal of Memory and Language, 51 (2004) 279 – 296*

Graham, William A. (1987) *Beyond the Written Word: Oral Aspects of Scripture in the History of Religion.* Cambridge: Cambridge University Press

_____(2001) 'Orality,' in McAuliffe, ed. Vol. 1, pp. 584 – 787

_____ and Navid Kermani (2006) 'Recitation and aesthetic reception,' in McAuliffe, ed., pp.: 115 - 141

Guy, Gregory R (2007) 'Variation and phonological theory,' in Bayley and Lucas, eds., pp. 5 – 23

Jun, Jongho (1995) 'Abstract of ' Perceptual and articulatory factors in place assimilation: An optimality theoretic approach. Unpublished PhD dissertation, University of California, Los Angeles

Kelber, Werner H. (2007) 'Orality and biblical studies: a review essay,' *Review of Biblical Literature,* vol. 9, pp.: 1 - 25

Ladefoged, Peter (1993) *A Course in Phonetics. Third Edition. International Edition.* Fort Worth: Harcourt, Brace Jovanovich

_____ and Ian Maddieson (1999) *The Sounds of the World's languages.* Oxford: Blackwell

Lannoy, Richard (1971) *The Speaking Tree: A Study of the Indian Culture and Society.* London: Oxford University Press. Accessed google ebook July 3rd, 2009 at 09:45

Leemhuis, Frederick (2001) 'Readings of the Qur'an,' in McAuliffe, ed. 2001 – 2006. Vol. 1, pp. 353 – 363

McAuliffe, Jane Dammen. Editor (2001 – 2006) *Encyclopedia of the Qur'an, Vols. 1 – 7.* Leiden: Brill

_____(2005) 'Reading the Qur'an with fidelity and freedom,' *Journal of the American Academy of Religion.* Sept. 2005. Vol. 73(3) 615 – 635

_____(2006) Editor. *The Cambridge Companion to the Qur'an.* Cambridge: Cambridge University Press.

Mitterer, Holger, Valeria Csepe, and Leo Blomert (2006) 'The role of perceptual integration in the recognition of assimilated word for.' *The Quarterly Journal of Experimental Psychology, Vol 59 (8): 1395 – 1424*

Nelson, Kristina (2001) *The Art of Reciting the Qur'an. Second Edition.* Cairo: American University Press.

Rezvan, Efim (2003) 'Orthography [of the Qur'an].' In McAuliffe, ed., 2001 – 2006. Volume 3, pp.:

Rippin, Andrew. Editor (2009) *The Blackwell Companion to the Qur'an.* Oxford: Wiley-Blackwell.

Robins, R. H. (1967) *A Short History of Linguistics.* Bloomington, Indiana University Press.

Small, Larry (1999) *Fundamentals of Phonetics.* Boston: Allyn and Bacon.

Son, Minjung (2008) 'The nature of Korean place assimilation: Gestural overlap and gestural reduction. PhD dissertation, Yale University.

Tajweed.com/shatebeyya.htm. Accessed several times, the latest on Friday October 30, 2009 at 10:45 Jordan local time

Thomas, Eric R. (2007) 'Sociophonetics, ' in Bayley and Lucas, eds., pp.: 215 – 233.

Wells, John C. (2006) Blog. Accessed on Monday August, 28.
_____ (2008) *The Longman Pronunciation Dictionary. Third Edition.* London: Pearson Longman
Winters, Stephen James (2003) 'Abstract of' Empirical investigations into the perceptual and articulatory origins of cross-linguistic asymmetries in place assimilation. Unpublished PhD dissertation, The Ohio State University.
Zsiga, Elizabeth (2008) 'The sounds of language,' in *An Introduction to Language and Linguistics.* Edited by Ralph Fasold and Jeff Connor-Linton (Cambridge: Cambridge University Press). Pages: 13 – 54.

ألمراجع باللغة العربية

ابن أبي طالب , مكي. (355 (القيروان) - 437 هجرية (في الأندلس)) ألرعاية لتجويد ألقراءة وتحقيق لفظ ألتلاوة. ط.2. 2008 تحقيق د. أحمد حسن فرحات. عمان: دار عمار.

ابن الجزري (نسبة إلى جزيرة ابن عامر قريب من الموصل) شمس الدين محمد أبن محمد بن علي بن يوسف العمري الدمشقي ثم الشيرازي (أبو الخير) (في دمشق751 - 833 هجرية في شيراز وكان قد تولى قضاءها) .
--------- ألتمهيد في علم التجويد . تحقيق علي حسن البواب.1405 هجرية ألرياض: مكتبة المعارف
ألدرة المضية في القراءات الثلاث . ط 2 . تحقيق محمد تميم الزعبي.ألمدينة ألمنورة: مكتبة دار الهدى
_____ . طيبة النشر في القراءات العشر. تحقيق علي محمد الضباع. 1950 . القاهرة : مصطفى البابي الحلبي
_____ . ألنشر في القراءات العشر. جزءان في مجلد واحد. قدم له الشيخ علي محمد الضباع.خرج آياته الشيخ زكريا عميرات. ط 2 عام 2002 بيروت: دار الكتب العلمية.

ابن مجاهد, أبو بكر أحمد بن موسى بن العباس . (245 - 324 هجرية) . ألسبعة في القراءات. تحقيق شوقي ضيف 1972. ألقاهرة: دار المعارف.

حبش, د. محمد . 2001. الشامل في القراءات المتواترة. دمشق: دار الكلم الطيب
" حديث ألأحرف السبعة : دراسة لغوية"المجلة الأردنية للغة العربية وآدابها , جامعة مؤتة(Forthcoming)ألحديد , محمود ألجفال .

الحمد , غانم قدوري. 2002 . أبحاث في علم ألتجويد . عمان : دار عمار

---------2005 . علم التجويد : دراسة صوتية ميسرة . ط 2. عمان : دار عمار

ألحنفي, جلال. 1987. قواعد التجويد والإلقاء الصوتي. بغداد : بدون اسم ناشر

ألخاقاني, موسى بن عبد الله ابن مزاحم. (ت 325 هجرية). ألقراء وحسن ألأداء. (ألقصيدة ألخاقانية)

الداني (نسبة إلى دانية في الأندلس) عثمان بن سعيد بن عثمان الأموي القرطبي (نسبة إلى قرطبة في الأندلس). (371 - 444 هجرية) ألتحديد في الإتقان والتجويد. دراسة وتحقيق الدكتور غانم قدوري الحمد ط 2 . 1999. عمان : دار عمار
_____ . 2003. كتاب الإدغام الكبير. دراسة وتحقيق د. عبد الرحمن حسن العارف. القاهرة: عالم الكتب

ألسخاوي, أبو الحسن علي بن محمد بن عبد الصمد (558 – 643 هجرية) جمال القراء وكمال الإقراء. (مجلدان). تحقيق الدكتور علي حسين البواب . 1987. ألقاهرة : مطبعة المدني

ألشاطبي (نسبة إلى شاطبة في الأندلس), ألقاسم بن فيرة بن خلف بن أحمد الرعيني الأندلسي الضرير . (538 – 590 هجرية). حرز ألاماني ووجه التهاني في القراءات السبع ط 4.   2005 (ألمعروف باسم متن الشاطبية 1173 بيتا). ضبطه وصححه وراجعه محمد تميم الزعبي. المدينة المنورة: مكتبة دار الهدى

شكري وآخرون.أحمد خالد. 2006. ألمنير في أحكام التجويد.ط 8. عمان: جمعية المحافظة على القران الكريم.

عثمان, حسني شيخ. 2004. حق التلاوة. عمان: جهينة

ألقرطبي, عبد الوهاب بن محمد. (ت 461 هجرية) 2000 ألموضح في التجويد. تحقيق د. غانم قدوري الحمد. عمان: دار عمار

مصطفى , محمد شريف. 2004 . خلاصة ألأحكام في تجويد ألقران على رواية حفص لقراءة عاصم من طريق ألشاطبيه . عمان : دار أبن ألجوزي

منصور , محمد خالد وآخرون . 2002. ألمزهر في شرح ألشاطبيه والدرة . عمان : دار عمار .

موسى, عبد الرزاق بن علي بن إبراهيم. 2003. ألفوائد التجويدية في شرح المقدمة الجزرية. ط 2. طنطا: دار الضاد