Why is It Difficult to Date When qalqala Became Unintelligible to Qur’ānic Reciters and Grammarians?

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Abstract

Sībawayh describes /q/, /ṭ/, /b/, /ǧ/ and /d/ as [+ voiced + stop] phonemes. In pausal position, these phonemes are subject to qalqala, which can be described as the addition of a schwa [ə], and whose role is the protection of the [+ voiced] feature of these phonemes. In standard Classical Arabic, the pronunciation of these phonemes have evolved (/q/ and /ṭ/ are now realised as [- voiced], and /ǧ/ as [+ affricate]). The consistency of qalqala as described by Sībawayh is thus lost, since the Qur’ānic recitation (tağwīd) rule for qalqala does not fit the current standard pronunciation.

In this study, we trace back a shift in the mere definition of qalqala as early as in al-Mubarrad’s Muqtaḍab that will enable Qur’ānic reciters to later remain blind to the fact that their actual pronunciation of some of these phonemes does not correspond to Sībawayh’s written description.

Keywords


Résumé

Sibawayh décrit les phonèmes /q/, /ṭ/, /b/, /ǧ/ et /d/ comme étant [+ sonore + occlusif]. À la pause, ces phonèmes sont sujets à la qalqala, que l'on peut décrire phonétiquement comme l'addition d'un schwa [ə] dont le rôle est protéger le caractère [+ sonore] de ces phonèmes. En arabe classique standard, la prononciation de ces phonèmes a évolué

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(\(/q/\) et \(/t/\) sont aujourd'hui \[- sonore\], et \(/\check{g}/\) est \ [+ affriqué\]). La cohérence de la qalqala telle que décrite par Sībawayh est donc perdue, puisque la règle de la qalqala en récitation coranique (tağwīd) ne correspond plus à la prononciation standard.

Dans cette étude, nous découvrons un changement dans la définition même de la qalqala dès le Muqtaḍab d’al-Mubarrad, changement qui permettra aux récitateurs coraniques ultérieurs de ne pas voir que la prononciation de certains de ces phonèmes ne correspond plus à la description de Sībawayh.

Mots clés


Introduction

Sībawayh\(^1\) (d. ca 180/796) décrit les phonèmes en Arabe selon des critères assez précis, ce qui permet une représentation claire de leur prononciation, au moins pour les principales caractéristiques avec lesquelles cet article se consacrera.\(^2\) Il décrit les six phonèmes comme étant des arrêts sonores (hamza), qui est un cas particulier, comme nous le verrons plus loin, et cinq autres phonèmes qu’il appelle ḥurūf al-qalqala ("lettres incommodes"):\(^3\) \(/q/\), \(/t/\), \(/b/\), \(/\check{g}/\) et \(/d/\)\(^4\) et dont la valeur phonétique qu'il


2 I rely on Abdulmunim Abdulamir al-Nassir, *Sībawayh the Phonologist*, London-New York, Kegan Paul, 1993 for the analysis of Sībawayh’s phonetics. Concerning the qalqala consonant for example, some authors prefer to challenge Sībawayh’s definition of mahmūs/majhūr as \[- voiced\]/\ [+ voiced\] rather than to consider that the pronunciation of Arabic may not be univocal. We will not enter this ideological discussion.


4 The order in which the qalqala phonemes are quoted by the various authors is always the same as in the Kitāb, \(/q/\), \(/\check{g}/\), \(/t/\), \(/d/\) and \(/b/\), with no relation to the mnemonic that is sometimes quoted after, in four different versions: ṣṭb ẓ ṣḏ, ṣḏ ṣṭḥ ṣḏ ṣṭḥ, ṣṭḥ ṣḏ and ṣḏ ṣṭḥ.
describes respectively as [ɢ], [dˤ], [b], [ɟ] and [d]. These five phonemes have in common that when pronounced in pausal position a "small sound" (ṣuwayt) is uttered.

It is thus easy to fathom qalqala’s logic in the Kitāb, which is to protect the [+ voiced] feature of these phonemes. Indeed, when pronounced in pausal position, voiced stops tend to lose their [+ voiced] feature, and the "small sound" described by Sibawayh, which can be understood as a schwa [ə], i.e. a mid-centered vowel, protects this feature.

Sibawayh does not mention nor focus on Qur’anic recitation, however, qalqala is today one of the phonetic rules that apply to Qur’anic recitation only. The problem is that in contemporary standard Arabic, as well as in contemporary Qur’anic recitation, three of these five phonemes are not described as voiced stops. Two of them have lost their [+ voiced] feature, if compared to Sibawayh’s description: /q/ is realized as [q], not as [ɢ], and /ṭ/ is realized as [tˤ], not as [dˤ]. One of them has lost its [+ stop] feature: /ǧ/ is realized


5 Al-Nassir does not use the IPA symbols consistently, probably for technical reasons and also because he considers that in some cases they may not fit Sibawayh’s description adequately (al-Nassir, Sibawayh the Phonologist, p. 44). This last reason is void, since these symbols represent discriminating features: [ɢ] represents a voiced uvular stop, [dˤ] a voiced pharyngealised alveolar stop, [b] a voiced labial stop, [ɟ] a voiced palatal stop, and [d] a voiced alveolar stop. All these features are described by Sibawayh, as al-Nassir (Sibawayh the Phonologist, p. 9–55) himself thoroughly investigates. See a chart of IPA’s symbols in The International Phonetic Alphabet (revised to 2005), retrieved on June 19, 2014, URL: http://www.langsci.ucl.ac.uk/ipa/IPA_chart_(C)2005.pdf.

6 In the Kitāb, Sibawayh only mentions qalqala in pausal position (waqf), but in Qur’anic recitation it also applies within a segment on vowelless phonemes (sukūn). See Farqalī Sayyid ʿArabāwī, Ḥurūf al-qalqala bayna l-qudamā‘ wa-l-muḥdaṭa‘na wa-bayān aḥtā‘ al-qurrā‘fi hurūf al-qalqala, Giza, Maktabat awlād al-šayḫ li-l-turāṯ, 2007, p. 90. ʿArabāwī mentions that in some treatises waqf could also refer to sukūn. See Ṭarāfī Ḥurūf al-qalqala, p. 93, 117–118. At this point I will not make a distinction between these two cases since I focus on the consonants involved not on the actual realisation of qalqala.

7 Sibawayh, Le livre, 11, p. 310, l. 8.
8 Al-Nassir, Sibawayh the Phonologist.
9 Ibid., p. 52.
10 Fleisch, Traité de philologie arabe, 1, p. 222–223, 228; al-Nassir, Sibawayh the Phonologist, P. 37-47.
as a voiced alveolar palatal affricate [dʒ], not as a voiced palatal stop [j].\textsuperscript{11} In addition to this, the phoneme /d/, which Sibawayh describes as a voiced pharyngealised lateral continuant [ɮˤ] is today realised as a voiced pharyngealised alveolar stop [dˤ].

The consistency of \textit{qalqala} is thus lost since it applies to phonemes that are today realised either as [+ voiced] ([b], [dʒ] and [d]) or [- voiced] ([q], [tˤ]); [+ stop] ([q], [tˤ], [b] and [d]) or [+ affricate] ([dʒ]).

Or, to put it the other way round, if one was to reconsider \textit{qalqala} according to the contemporary pronunciation of Qur’ānic Arabic, it would apply to the following phonemes: /b/, /d/ and /dˤ/, i.e. the three and only voiced stops, pronounced [b], [d] and [dˤ] respectively.\textsuperscript{12}

Although these phonetic phenomena are known and described,\textsuperscript{13} it seems that Qur’ānic reciters ignore them. ‘Arabāwī\textsuperscript{14} provides us with a good insight in the points at stake in this issue: it is a religious duty to recite the Qur’ānic text exactly as the Prophet did, so one must rely on the phonetic description of the older treatises. Qur’ānic reciters thus try to hold together the contemporary pronunciation of Qur’ānic Arabic, which by no means they can imagine having evolved, and the descriptions made by the early reciters and grammarians. The result is that \textit{qalqala} has become phonetically unintelligible since it applies to phonemes that do not have phonetic features in common any more.

To be more specific, contemporary reciters accept the idea that the pronunciation of the vowels may have evolved, the “small sound” of \textit{qalqala} in particular. For example, most of ‘Arabāwī’s book deals with the correct pronunciation of the schwa added by \textit{qalqala}, and the author criticises modern reciters, i.e.

\textsuperscript{11} This very point is challenged by Jonathan Owens, “Chapter 504 and modern Arabic dialectology” in \textit{Ingham of Arabia}, ed. Clive Holes, Leiden, Brill, 2013, p. 189: “Sibawayh classifies the jiym as a stop (shadiyd), but is not more specific than this, for instance giving no intimation as to whether it should be interpreted as a simple stop ([j]), or an affricate ([dʒ]).” Al-Nassir (\textit{Sibawayh the Phonologist}, p. 42) is not entirely consistent on this issue. On the one hand he says that “Sibawayh and all his successors agree about this form of jiym [voiced palatal affricate]” and on the other hand he says that /g/ is described by Sibawayh as a “voiced plosive” and that “the affrication observed in modern jiym might have developed as a result of a partial shift from Shadīd towards Rikhw.” Since this point is not central to my demonstration, I will provisionally consider that Sibawayh describes the phoneme /g/ as a voiced palatal stop [j].


\textsuperscript{13} Al-Nassir, \textit{Sibawayh the Phonologist}.

\textsuperscript{14} ‘Arabāwī, \textit{Ḥurūf al-qalqala}.
according to him, reciters later than the 11th/17th century, who describe \textit{qalqala} as a vowel harmonisation, which is not to be found in earlier treatises.

\textbf{The Research Question}

A legitimate question that the modern researcher can pose is: when has \textit{qalqala} become unintelligible to Qur’anic reciters and grammarians? This question raises the following methodological issue: since both early and late reciters usually follow Sibawayh’s written definition of \textit{qalqala}, one actually has to ask oneself whether they understand what is at stake in this phonetic phenomenon.

This first question immediately raises a second question: until when did the reciters pronounce the \textit{qalqala} consonants as voiced stops? And this second question raises the same methodological issue as the first one: since both early and late reciters and grammarians usually follow Sibawayh’s phonetic description, one actually has to ask oneself whether or not they notice a discrepancy between these written descriptions they repeat and the way they actually pronounce these phonemes.

A similar methodological issue has been raised by Owens concerning \textit{imāla} in al-Zamaḥšāri. Owens writes that “Zamaxshari in this instance adds little to Sibawaih’s observations, and in fact it may be suspected that he based his analyses on written philology rather than on first-hand aural observations, which was a hallmark of Sibawaih’s methodology”.\footnote{Jonathan Owens, \textit{A linguistic history of Arabic}, Oxford, Oxford University Press, 2006, Appendix 3: “Imala in Zamaxshari”, p. 281.}

When studying the phonetic description of Arabic by Arab grammarians, one has to systematically distinguish between two different levels: their philological interpretation of the written grammatical corpora and the actual phonetic values they give to the phonemes they describe. Whereas the former is easily fathomable, the latter largely remains obscure to us.

For example, when authors discuss whether /t/, /k/, /l/, or other phonemes should be added to the list of \textit{qalqala} consonants it is clear that they do not understand the phonetic phenomenon described by Sibawayh anymore. When they try to justify Sibawayh’s description of /q/ and /ṭ/ as [+ voiced] and their addition to the \textit{qalqala} consonants by the fact that they are stronger stops, it is clear that they have not understood the fact that their own pronunciation of these phonemes differs from that of Sibawayh and that it is because they were actually voiced that they were included in the list. The case of \textit{hamza} is
different, since Sībawayh describes its phonetic realisation as [+ voiced + stop] but he does not include it in the phonemes that are subject to qalqala. Thus, the fact that some reciters have questioned this difference of treatment of hamza does not reveal a lack of understanding of qalqala. It could rather indicate that they understood Sībawayh’s point and that they challenge it.

To be sure, all these authors are free to deal with the issue of qalqala exactly the way they want, to apply it to Qur’ānic recitation as they please. We cannot enter into the investigation of the reasons for the discrepancy between Sībawayh’s description and the practice of Qur’ānic reciters. Many factors may be involved: historical development of sounds, maintenance of lectal variants from the very days of Sībawayh… My point in this article is simply that once more, Sībawayh is neither understood nor followed, as far as qalqala is concerned.

In this article, I will focus on the literary sources of the first ten Islamic centuries, in order to explore the following research question: why is it difficult to date when qalqala became unintelligible to Qur’ānic reciters and grammarians?

The Findings

One understands the inner consistency of Sībawayh’s description of qalqala only if one supposes that his phonetic description of the five phonemes /q/, /ḡ/, /ṭ/, /d/ and /b/ is accurate, i.e. they are the five and only [+ voiced + stop] phonemes in the language. It becomes clear, although Sībawayh does not mention it explicitly, that the logic of qalqala is to protect the [+ voiced] feature of these phonemes in pausal position.

Sībawayh describes an additional [+ voiced + stop] phoneme, /ʾ/, but explicitly says that qalqala does not apply to it without giving reasons. It is not straightforward to describe /ʾ/ as a [+ voiced + stop] phoneme due to the mere nature of the glottal stop, which consists both in opening and closing the vocal chords, depending on its position in the segment. This mere nature of hamza explains its different treatment from other [+ voiced + stop] consonants.

Apparently, there has been a scribal error in some manuscript traditions of the Kitāb which has read /b/ as /t/ in the list of the five qalqala phonemes. Al-Sīrāfī’s (d. 368/979) commentary only knows this erroneous reading and transmits it. He notices that it is not consistent with Sībawayh’s description but

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he does not amend it and observes that a “small breath” is emitted after /t/. In Ibn al-Ǧazarī’s (d. 833/1429) Naṣr this observation becomes a justification for the inclusion of /t/ to the list. In addition to this, he does not see that the addition of /t/ to the list of the five canonical phonemes would make six qalqala phonemes, not five as mentioned by Sibawayh.

Al-Mubarrad’s (d. 285/898) description of qalqala in his Muqtaḍab ignores Sibawayh’s Kitāb completely. He only mentions two phonemes explicitly, /q/ and /k/. He bases his description of qalqala on the experience of the speaker that a specific post-release breath is emitted after these two phonemes. This breath is stronger after /q/ than after /k/. The question why al-Mubarrad decided not to rely on Sibawayh’s Kitāb for the description of qalqala is open. Maybe his pronunciation of these five phonemes was already not consistent any more with Sibawayh’s description and instead of trying to understand Sibawayh’s point, al-Mubarrad chose to keep the terminology of qalqala but to change its meaning. Whatever the reason, we observe that instead of referring to a mid-centered vowel that protects the [+ voiced] feature of [+ voiced + stop] phonemes in pausal position, qalqala refers in al-Mubarrad’s Muqtaḍab to a post-release breath emitted after stronger stops.

Later authors can be separated in three groups. Authors of the first group seem to understand the inner consistency of Sibawayh’s description. They defend Sibawayh’s opinion and reject the opinion of other scholars who add other phonemes to the initial list of five phonemes. However, we have no means to check whether they notice a change in pronunciation between Sibawayh’s description and their own. Among these authors we count Makkī (d. 437/1045), al-Dānī (d. 444/1052), ‘Abd al-Wahhāb al-Qurṭubī (d. 461/1069), Abu Šāma (d. 665/1267), Ibn Umm Qāsim al-Murādī (d. 749/1348) and Sāğaqlī Zādah al-Marʿašī (d. 1145/1733).

Authors of the second group give an account of qalqala that compares with that of Sibawayh or faithfully transmit his theory, but we have no clue as to whether they really understand the phonetic phenomenon at stake because we could not find passages where they challenge contradicting views on ḥurūf al-qalqala. To this category belong Ibn Ġinnī (d. 392/1001), al-Zamaḫšarī (d. 538/1144), Ibn Abī Maryam (d. 565/1170), al-Hamaḏānī l-ʿAṭṭār (d. 569/1173), Ibn al-Ḥāǧib (d. 646/1249), Raḍī l-Dīn al-Astarābāḏī (d. 688/1289) and

Ibn al-Waḡīh al-Wāsiṭī (d. 740/1340) until new data is provided on their view on qalqala.

Authors of the third group belong to al-Mubarrad’s approach of qalqala. They discuss whether similar post-release breath that they experience after other phonemes can be called qalqala. Just like for al-Mubarrad, we suppose that they preferred this approach because their pronunciation of Arabic did not comply with that of Sībawayh anymore. However, none of them refutes Sībawayh’s phonetic description of qalqala. Rather, they include it into their own theory. This is the case of al-Sīrāfī (d. 368/979), Ibn Yaʿīš (d. 643/1245), Ibn al-Ǧazarī (d. 833/1429) and al-ʿAwfī (d. 906/1501).

Interpretation of the Findings

It would be easy to consider the authors of the third group as the “bad authors” who were not able to understand Sībawayh’s Kitāb, but there are two reasons why I will not do this. The first reason is that I have only analysed the passages dealing with qalqala, sometimes only a few lines in a whole treatise. A wider inquiry is obviously needed to be able to cast a judgment on their work. The second reason is that we could also see them as the ones who could not follow Sībawayh because his phonetic description was inaccurate at the time they wrote their treatises. However, they were probably unable to admit that the pronunciation of Arabic had changed between Sībawayh and them, so they rather tried to understand the Kitāb with their contemporary pronunciations in mind. Al-Mubarrad’s frame offered them the possibility to do this. Lastly, the erroneous manuscript tradition of the Kitāb carrying the tāʾ reading has certainly encouraged them in this direction because it was almost impossible to fathom Sībawayh’s logic with this erroneous reading.

Another direction that some scholars have taken is to consider that there are two different phenomena, the qalqala described by grammarians and linguists and the qalqala described by Qurʾānic reciters. Modern scholars agree on the fact that both apply to the same five consonants /q/, /ǧ/, /ṭ/, /d/ and /b/. But whereas grammarians and linguists only mentioned it in pausal position, reciters pronounce it also when these consonants are vowelless. Reciters do not try to look for a rationale behind this phenomenon, which they have

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received from tradition, whereas grammarians and linguists try to understand its logic.

To put it in a nutshell, we can trace back a shift in the mere definition of *qalqala* as early as in al-Mubarrad’s *Muqtaḍab* that will enable Qurʾānic reciters and grammarians to later remain blind to the fact that their actual pronunciation of some of these phonemes does not correspond to Sībawayh’s written description.

**Authors Adding Phonemes to the Canonical List**

**Sībawayh**

Although Sībawayh’s text on *qalqala* is quite straightforward, some authors say that he included *tَāʾ* into *ḥurūf al-qalqala*, just like Ibn al-Ǧazārī:

Wa-ḏakara Sībawayh maʿa-hā [ḥurūf al-qalqala l-ḥamsa] l-ṭāʾ maʿa annahā l-mahmūsa wa-ḏakara lahā naḥḥ wa-huwa qawī fī l-iḥtibār.20

Sībawayh mentioned *tَāʾ* with them [the five *qalqala* consonants], although it is not voiced, and he mentioned its breath and the fact that it is strongly experienced.

This allegation of Ibn al-Ǧazārī is nowhere to be found in the *Kitāb*. The only place where Sībawayh mentions *qalqala* in the *Kitāb* lies in a few sentences, and *tَāʾ* is not in the list:

Wa-ʿlam anna min al-ḥurūf ḥurūf mušraba ḍuġiṭat min mawāḍiʿihā fa-iḍā wa qaṣṭa ḥaraḡa maʿahā min al-fam ṣuwayt wa-nabʿu al-lisān ʿan mawḍiʿihi wa-hiya ḥurūf al-qalqala wa-sa-tubayyanu aydan fī l-idḡām in šāʾa Llāh. Wa-ḏālika l-qāf wa-l-ǧīm wa-l-ṭāʾ wa-l-dāl wa-l-bāʾ21 wa-l-dalīl ʿalā ḏālika annaka taqūlu l-ḥiḍq22 fa-lā tastaṭīʿu an taqifa illā maʿa l-ṣuwayt li-ṣiddat

21 Ap. wa-l-ṭāʾ, H wa-l-dāl; pues A, B, D, H wa-l-tāʾ wa-l-dāl etc. (Editor’s note. H probably refers to Cairo, Dār al-Kutub, *nahw* 136, see below for more detail; A refers to BnF, ARABE 3987; B refers to Saint Petersburg, Inst. Vost. Jazykov C-272; and D refers to Vienna, Öst. Nat. 2442, Mixt. 769).
22 L: al-ḥadq. (Editor’s note. L refers to Escorial, Bib. Real, ar. 1).
Now that among the consonants some are “saturated” (mušraba),25 “pressed” (duğitat) from their positions, so that if you pause, a small sound exits from the mouth and the tongue withdraws from its position. These are the qalqala consonants. They will also be exposed in [the chapter on] assimilation, God willing. They are qāf, ǧīm, ṭāʾ, dāl, and bāʾ. The evidence for this is that you say al-ḥiḍq. You cannot pause but with a small sound because of the strong pressure of the consonant. Some Arabs emit a stronger sound, as if they rounded the vowel.

And nothing in the rest of the text of the Kitāb could lead to the conclusion that tāʾ is related to qalqala in any manner, except for the textual variants found in the critical apparatus. According to Derenbourg, manuscripts A, B, D and H carry the tāʾ lesson. However, D and H actually refer to manuscripts of commentaries of the Kitāb (by al-Rummānī and al-Sīrāfī, respectively).26 Moreover, according to Humbert,27 the second part of Derenbourg’s edition of the Kitāb is based on manuscripts A, B and L. This means that the bāʾ lesson is actually carried only by L, which is the oldest of the three manuscripts.28

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23 A allaḏīna yarmūna l-ḥaraka. (Editor’s note. A refers to BnF, ARABE 3987).
24 Sībawayh, Le livre, ii, p. 310, l. 7-11.
25 See below a definition of mušraba, in the discussion on ḥamza as a qalqala consonant.
28 Manuscript A refers to BnF ARABE 3987 (Humbert’s Ça). It is a modern copy of a medieval Oriental manuscript, which is the base of Derenbourg’s edition. It carries the recension of al-Zamaḫšarī. Manuscript B refers to Saint Petersburg, Institut vostocnyx jazykov (Akademija Nauk) C-272 (Humbert’s 4G). Humbert describes it as “late and containing many mistakes” (Les voies de la transmission du Kitāb, p. 197). L refers to Escorial, Biblioteca del Real Monasterio de San Lorenzo, ar. 1 (Humbert’s 2O). This medieval Western manuscript is dated 629/1232 and contains the recension of the Andalusian grammarian Abū ʿAbd Allāh Muḥammad b. Yaḥyā l-Rabāḥī (d. 358/968). See Les voies de la transmission du Kitāb, p. 29, 116.
As shown by al-Nassir, the inner consistency of phonemes lies in the fact that Sibawayh describes them all as [+ voiced + stop], which makes it easy to choose between the two lessons, bāʾ versus tāʾ.

In al-Sīrāfī’s recension of the Kitāb, tāʾ is chosen over by bāʾ. But at this point, the commentary of al-Sīrāfī does not help us decide whether it is a conscious choice or whether it is an other scribal error. In his commentary, al-Sīrāfī does not mention the fact that these phonemes have in common that they are [+ voiced + stop] but he invites the reader to perform a simple phonetic “test” (imtiḥān):

Qāla Abū Saʿīd [al-Sīrāfī]: yanbaġī iḍā aradta mtiḥān dālika an tabtadiʿa bi-harf min al-ḥurūf, wa-tutāniyya bi-ḥadīhi l-ḥurūf al-ḥamsa fa-taqifa ʿalayhi; fa-innaka tasmaʿu šuwayt ḫinda l-waqf ʿalayhi ka-qawlika: aq wa-aḡ wa-aṭ wa-ad wa-at, wa-qad tadḥulu fi dālika l-ḵāf ka-qawlika aḵ.32,33

Abū Saʿīd [al-Sīrāfī] said: if you want to test this qalaqa, you have to begin with one of the consonants and then [utter] one of these five consonants in second position and pause on it. Then you hear a small sound when pausing on them, as when you say: aq, aḡ, aṭ, ad, at. Sometimes kāf is also added to these, as when you say aḵ.

However, later in his commentary, al-Sīrāfī makes it clear that [- voiced] tāʾ is really intended:

Wa-qad ḏakara l-tāʾ fi ḥurūf al-qalqala, wa-hiya min al-ḥurūf al-mahmūsa, wa-qad ḏakara lahā nafḵ.34

He [Sibawayh] mentioned tāʾ among the qalaqa consonants although it is not voiced, and he mentioned its breath.

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29 Al-Nassir, Sibawayh the Phonologist, p. 52-54.
30 In the first edition of his Grammaire arabe, Silvestre de Sacy mentions the letter bāʾ (Grammaire arabe, 1810, p. 27) but in the second edition he says that it is better to replace it by tāʾ (Grammaire arabe, 1831, p. 27). Fleischer (Kleinere Schriften, i/1, p. 13) does not agree on this later correction. Neither Silvestre de Sacy nor Fleischer justify their choice.
31 Al-Sīrāfī, Šarḥ, xvi, p. 129, l. 9-11.
32 (Ak) sāqiṭa min (T). (Editor’s note. T refers to Istanbul, Süleymaniye, Türkān 103).
33 Al-Sīrāfī, Šarḥ, xvi, p. 129, l. 14-16.
34 Ibid., xvi, p. 131, l. 1-2.
Al-Sīrāfī admits here that it is not consistent to consider tāʾ, an unvoiced phoneme, as one of hurūf al-qalqala but he does not challenge this position that he attributes to Sībawayh. He seems to be torn between two different logics. He understands that it is not fully consistent to add /t/ to hurūf al-qalqala but he does not feel entitled to modify the version of the Kitāb he has before his eyes. In the end, he is unable to hierarchise between the two logics, ultimately indicating a degree of insecurity.

The “breath” (nafḫ) that is emitted with tāʾ, and which is found in all [-voiced] phonemes, is not found in any of hurūf al-qalqala so it cannot be a justification for the inclusion of tāʾ to the list. However, for Ibn al-Ǧazarī it seems to have become an argument for its inclusion in the list, because of its particular strength after the phoneme tāʾ:

Wa-ḏakara lahā nafḫ wa-huwa qawī fī l-iḫtibār.35

And he [Sībawayh] mentioned its [tāʾ] breath and the fact that it is strongly experienced.

In short, it seems that Ibn al-Ǧazarī knows Sībawayh’s view on qalqala through a recension similar to that of al-Sīrāfī, which has misread bāʾ as tāʾ in the Kitāb. He repeats verbatim al-Sīrāfī’s remark on the fact that tāʾ is [-voiced] but he understands al-Sīrāfī’s note on the “breath” associated to tāʾ as a justification for its inclusion in the list of hurūf al-qalqala, as shown by his addition to al-Sīrāfī’s commentary that the “breath” in tāʾ is “strongly experienced” (qawī fi l-iḫtibār).36

We thus propose the following explanatory sequence: 1) A scribal error happens in Sībawayh’s Kitāb that reads bāʾ as tāʾ; 2) al-Sīrāfī’s commentary carries this scribal error and notes that tāʾ, just like other [-voiced] phonemes, is followed by a “breath”; 3) Ibn al-Ǧazarī turns al-Sīrāfī’s commentary into a justification for the inclusion of tāʾ to the list: this “breath” after tāʾ is particularly strong.

This sequence clearly shows that neither al-Sīrāfī nor Ibn al-Ǧazarī understood the logic of qalqala according to Sībawayh’s description, otherwise they would have simply amended the recension of the Kitāb they had before their eyes.

Sībawayh does not mention hurūf al-qalqala in the form of the two-word mnemonic qaṭaba ǧad but he lists the five phonemes. In the same manner,

36 Ibid.
al-Sīrāfī mentions\(^\text{37}\) five phonemes, adding that some scholars include kāf to the list, but he does not mention any form of the mnemonic. As for Ibn al-Ǧazarī, he mentions the mnemonic qaṭaba ḣad,\(^\text{38}\) and says that Sībawayh adds tā’ to this list. This is probably an attempt to reconcile two contradicting traditions: al-Sīrāfī’s commentary on the five phonemes, including tā’, according to his reading of Sībawayh’s Kitāb, and the five-phoneme mnemonic tradition, which is not found in Sībawayh’s Kitāb.

In doing this, Ibn al-Ǧazarī does not see that this would make the qalqala phonemes to be six for Sībawayh (the mnemonic plus tā’), whereas the Kitāb only lists five phonemes, even in al-Sīrāfī’s recension and whatever lesson, bā’ or tā’, it carried.

In other words, al-Sīrāfī misunderstood the consistency of Sībawayh’s description and he did not correct tā’ into bā’ in his recension of the Kitāb, and Ibn al-Ǧazarī lets a second error pass unnoticed: he did not realise that whatever the phoneme, bā’ or tā’, Sībawayh only mentions five phonemes not six. Just like al-Sīrāfī did not correct tā’ into bā’, Ibn al-Ǧazarī did not modify the mnemonic qaṭaba ḣad to qaṭata ḣad in order to adapt it to his understanding. Of course one can praise them for their intellectual probity, but when one sees errors pile up as is the case here, the question remains: do these scholars really understand the topics they deal with?

As for ʿArabāwī, he only adds to the confusion by writing\(^\text{39}\) that Sībawayh did not consider tā’ a qalqala phoneme, although he says the opposite three times elsewhere.\(^\text{40}\)

If we go back to earlier authors, we find that Ibn Muǧāhid (d. 324/936) is silent on the issue of qalqala in his Kitāb al-Sabʿa fī l-qirāʾāt;\(^\text{41}\) and that Ibn Ğinnī (d. 392/1001) gives a description of qalqala which is very similar to that of Sībawayh, with the bā’ lesson:

\[\text{Wa-ʿlam\(^\text{42}\) anna fī\(^\text{43}\) l-ḥurūf ḥurūf muṣraba tuḥfazu fī l-waqq wa-tudqatu ‘an mawāḍi‘ihā, wa-hiya ḥurūf al-qalqala, wa-hiya l-qāf wa-l-ḡim wa-l-ṯā} \]

37 Al-Sīrāfī, Šarḥ, xvi, p. 129, l. 15.
38 Ibn al-Ǧazarī, al-Našr, i, p. 166, l. 4.
39 ʿArabāwī, Ḥurūf al-qalqala, p. 82.
40 Ibid., p. 84, 113, 212.
42 Wa-ʿlam: sāqiṭa min Š, wa-maḥalluhā bayāḍ bi-l-aṣl. (Editor’s note. Š refers to Cairo, Dār al-kutub, luğa 16 š).
43 Š, Z. min. (Editor’s note. Z refers to Cairo, Azhar 4317, luğa 116).
wa-l-dāl wa-l-bāʾ; li-annaka lā tastaṭīʿu l-wuqūf ʿalayhā illā bi-ṣawt. Wa-dālīka li-ṣiddat al-ḥaq wa-l-qaṭ; wa-dālīka nahwa lḥaq wa-ḍhab wa-ḥliṭ wa-ḥruḡ wa-baʾd al-ʿArab ašādd taṣwīt.44

Know that among the consonants some are “saturated” (mušraba), they are “pushed” (tuḥfazu) in pausal position and pressed out of their positions. These are the qalaqa consonants: qāf, ǧīm, ṭāʾ, dāl, and bāʾ. You cannot pause on them but with a sound, because of the strength of the pushing and the pressure, as in ilḥaq, iḍhab, ihliṭ, and uḥruḡ. Some Arabs emit a stronger sound.

This, however, does not help us decide whether he understands the phonetic phenomenon at stake.

Al-Mubarrad
Curiously, al-Mubarrad writes very little about qalqala, he does not mention the number of the phonemes concerned, and does not provide us with a list. His account of this phonetic phenomenon seems to be independent from that of Sibawayh. Al-Mubarrad only says that “among these [ḥurūf al-qalqala] are qāf and kāf”.45 Here is the complete and only passage about qalqala in the Muqtaḍab:

Wa-ʿalam anna min al-ḥurūf ḥurūf maḥṣūra fī mawāḍiʿihā fa-tasmaʿu ʿinda l-waqa ʿalā l-ḥarf minhā nabra tatbaʿuhu wa-hiya ḥurūf al-qalqala. Wa-idā tafaqqadat dālīka waqadtahu.

Fi-minhā l-qāf wa-l-kāf, illā annahā dūna l-qāf; li-anna ḥaṣr al-qāf ašadd, wa-innāmā tazharu ḥaḍīhi l-nabra fī l-waqa; fa-in wasalta lam yakun, li-annaka aḥraẓṭa l-lisān ʿanhā lā sawt ʾaḥar, fa-ḥulta baynahu wa-bayn al-istiqrār. Wa-ḥaḍīhi l-muqalqīla baʾdhuḥa ašadd ḥaṣr min baʾd, kamā ḏakartu laka fī l-qāf wa-l-kāf.46

Know that some of the consonants are tightened (maḥṣūra) in their positions and you hear in pausal position on one of them a tone (nabra) that follows them. They are the qalqala consonants. If you skip it you feel it.

45 Al-Mubarrad, Kitāb al-Muqtaḍab, 1, p. 332, l. 10.
46 Ibid., 1, p. 332, l. 8-13.
Among these are qāf and kāf although it differs from qāf because the tightness of qāf is stronger. This tone is realised in pausal position, and if you do not pause, it is not there, because you have pulled the tongue out of it [this tone] to another sound and you prevented it from remaining. Some of these consonants to which qalqala applies are more tightened than others, as I mentioned to you for qāf and kāf.

The mention of kāf in these few lines is enough for us to deduce that al-Mubarrad does not understand the phonetic phenomenon of qalqala as described by Sibawayh. Instead of considering the fact that qalqala protects the [+ voiced] feature of [+ voiced + stop] phonemes, he believes that qalqala is caused by a special strength in some [+ stop] phonemes, voiced or voiceless. This clearly indicates a different logic in interpreting qalqala. However, it is not possible to elaborate more on al-Mubarrad’s view on qalqala due to scarcity of data. One can only note that he considers that these two velars epitomise qalqala consonants.47

Ahmad b. Abi ‘Umar al-Ḥurāsānī (d. 470/1077)
According to al-Ḥamad,48 Ahmad b. Abi ‘Umar al-Ḥurāsānī (l-Andarābī l-Muqri’ al-Zāhid; d. 470/1077)49 considers in his unedited Īḍāḥ fī l-qirā’āt al-ʿašr wa-ḫtiyār Abī ʿUbayd (al-Qāsim b. Sallām) wa-Abī Ḥātim (al-Siǧistānī) that lām is among ḥurūf al-qalqala. We were not able to confirm this assertion.

Al-Zamaḥšarī and Ibn Yaʿīš
In his Mufaṣṣal, al-Zamaḥšarī gives a brief definition and description of qalqala, which does not add new elements to the previous definitions we have come across, except that the mnemonic takes a different shape, qad ṭabağa:

47 See in Appendix a modern version of this type of interpretation in Ġānim Qaddūrī l-Ḥamad, al-Dirāsāt al-ṣawtiyya.
48 Ibid., p. 260.
The *qalqala* consonants are those contained in the expression *qad ṭabaḫa*. *Qalqala* is the strong sound rising from your chest that you feel when you pause on them, with the pushing and the pressure.

Al-Zamaḫšarī says that all the phonemes are [+ voiced], except those gathered in the mnemonic *ṣṭḥṯk* and that the [+ stop] phonemes are gathered in the mnemonic *ʾǧdt ṭbqk*. It implies that *qalqala* phonemes are [+ voiced + stop] phonemes, except /ʾ/, which is consistent with Sibawayh’s description of *qalqala*. We have, however, no idea as to whether al-Zamaḫšarī had a clear representation of the phonetic phenomenon at stake. He simply says that the speaker “feels it” when he pauses on these phonemes.

The commentary of Ibn Yaʿīš on al-Zamaḫšarī’s *Mufaṣṣal* is quite puzzling. It seems that Ibn Yaʿīš heavily relies on al-Mubarrad’s *Muqtaḍab* for his commentary, although he does not mention al-Mubarrad’s name. This is clear from the fact that he adds kāf to the list of *qalqala* phonemes in a paraphrase of al-Mubarrad, although he holds the canonical view that *ḥurūf al-qalqala* are five:


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As for the *qalqala* consonants, they are five: *qāf*, *ǧīm*, *ṭāʾ*, *dāl* and *bāʾ*. They are gathered in *qad ṭabağa*. These consonants disappear in pausal position. They are pressed in their positions so that a tone (*nabra*) that follows any of these consonants is heard in pausal position. If you gemitate it you feel it. One of them is *qāf*, you say *ilhaq*. Another one is *kāf*, except that it differs from *qāf* because the tightness (*ḥaṣr*) of *qāf* is stronger. This tone is realised in pausal position and if you do not pause, this sound is not there, because you have pulled the tongue out of it [this tone] to another sound and you prevented it from remaining. Some of these *qalqala* [consonants] are more tightened than others, as we mentioned for *qāf*. They are called *qalqala* consonants because you cannot pause on them but with a sound, and this, for the strength of their tightness and pressure, as in *ilhaq, idhab, iḥliṭ*, and *uḫruḡ*. Some Arabs emit a stronger sound than others.

Ibn Yaʿīš does not seem to see the contradiction between the fact that *ḥurūf al-qalqala* are five (/q/, /ǧ/, /ṭ/, /d/ and /b/) and his assertion that /k/ is “one of them” (*wa-minhā*). And since he does not criticise al-Mubarrad’s view that *kāf* is subject to *qalqala* we have no reason to believe that he disagrees with him.

**Ibn Abī Maryam**

According to ‘Arabāwī, Ibn Abī Maryam considers the following letters as *ḥurūf al-qalqala*: *ḍād*, *zāy*, *ḍāl* and *ẓāʾ*. However, the quotation of Ibn Abī Maryam’s *Mūḍāḥ* that he provides does not support this assertion. Rather, Ibn Abī Maryam says that it is a claim made by some authors. Here is the complete quotation:


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53 Ibid., X, p. 129, l. 26-p. 130, l. 3.
Some of the consonants are also called *qalqala* consonants, or *laqlaqa* consonants. These consonants are “saturated” (muṣraba) in their places of articulation. Moreover, they are strongly pressed so that vowel-like sounds “stir” (tataqalqalu) or shake when they are emitted. This is why they are called “unrest” (qalqala) consonants. They are five: qāf, ǧīm, ṭāʾ, dāl, and bāʾ, and are gathered in the expression qad ṭabaḡa. Some people claimed that dād, zāy, dāl and ḏāl are among them because of their swelling and pressure in their positions. However, even if they are “saturated” in the places of articulation, they are not pressed as much as the five consonants that we mentioned, although a kind of breath is emitted after them in pausal position.

Ibn Abī Maryam is clear that, although a “kind of breath” (šibh al-nafḥ) is emitted in pausal position after these phonemes, they do not belong to the five ḥurūf al-qalqala. It is difficult, however, to decide whether he has understood the phonetic phenomenon at stake or whether he simply sticks to Sībawayh’s explanation literally, including Sībawayh’s description of the small sound emitted after dād, zāy, dāl and ḏāl.

Al-Hamaḏānī l-ʿAṭṭār

The same can be said of al-Hamaḏānī l-ʿAṭṭār, who has a very similar position as that of Ibn Abī Maryam concerning dād, zāy, dāl and ḏāl. The same “kind of breath” (šibh al-nafḥ) can be heard after them in pausal position but that it is not as strong as after qalqala phonemes:

Wa-tusammā ayḍan al-ḍād wa-l-zāy wa-l-dāl muṣraba, wa-ḍāka annahu yaḥruḡu maʾāhā ʿinda l-waṣf ʿalayhā šibh al-nafḥ, ġayr annahā lā tudjaṭu daṭṭ ḥurūf al-qalqala.

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Why is it Difficult to Date When Qalqala Became Unintelligible?

Ḍād, zāy, ṣā’ and ḏāl are also called “saturated” (mušraba) because a kind of breath is emitted with them in pausal position, but they are not pressed as much as the qalqala consonants.

Sāqaqlī Zādah al-Mar’ašī

Sāqaqlī Zādah al-Mar’ašī gives a detailed presentation of qalqala in his Ġuhd al-muqill.⁵⁸ He refutes the idea that kāf and tā’ belong to hurūf al-qalqala by saying that it is true that an additional sound can be heard when these letters are pronounced but it is a [- voiced] sound that cannot compare to qalqala:

Fa-lam yu’adda l-kāf wa-l-tā’ al-muṭannā [l-fawqiyya] min ḥurūf al-qalqala ma’a anna fiḥimā ḥawāt zā’id hadata ‘inda nfiṭāh maḥrağayhimā, li-anna ḏālika l-ṣawt fiḥimā yulābisu ǧary nafas, fa-huwa ʂawt hams da’if, wa-li-dā’ ‘udāda šadidayn mahmūsayn, fa-law lam yulābis ḏālika l-ṣawt fiḥimā bi-ǧary nafas la-kāna qalqala wa-la-kāna⁵⁹ l-tā’ dāl.⁶⁰

Kāf and [upper] two-dotted tā’ do not belong to qalqala consonants, although an additional sound happens at the opening of their place of articulation, because this sound associate to the flowing of breath, it is the sound of a weak whisper (hams). For this reason, they are considered non-voiced (mahmūs) stops. If this sound did not associate with the flowing of breath in these two consonants, it would be qalqala and tā’ would become ḏāl.

Sāqaqlī Zādah adds that if al-Mubarrad considered kāf to be a qalqala letter, as reported by Abū Šāma, he should also have considered tā’ to be one because it shares the same phonetic characteristics as kāf.⁶¹

He also adds that some reciters sometimes pronounce qalqala with fā’ or lām in order to protect them from being assimilated, but this is a mistake (laḥn).⁶²

In all this, Sāqaqlī Zādah seems to have understood Sībawayh’s point.

⁵⁹ (B): « l-a-kāf ḥarf al-tā’ ». (Editor’s note. B refers to Bagdad, Markaz Ṣaddām, 12928).
⁶⁰ Sāqaqlī Zādah al-Mar’ašī, Ġuhd al-muqill, p. 149, l. 1-5.
⁶¹ Ibid, p. 149, l. 6-8.
⁶² Ibid, p. 150, l. 5-8.
Some authors have developed the idea that qāf is the “origin” (aṣl) of qalqala. We have seen above that al-Mubarrad mentions explicitly only two qalqala phonemes, /q/ and /k/. The reason he gives is that qalqala is particularly salient in these two phonemes, and even more in /q/. Here probably lies the origin of the idea that /q/ exemplifies best what qalqala is.

**Makkī b. Abī Ṭālib al-Qaysī**

Makkī b. Abī Ṭālib al-Qaysī considers that the origin (aṣl) of qalqala is qāf because of its “strong pressure” (ṣiddat ḍaḡṭ) and “raising” (istiʿlāʾ), and thus attributed secondarily in its “sisters” (aḫawāt). He mentioned above⁶³ the mnemonic ǧad baṭaqa, from which we understand what these “sisters” are:


They say: the origin of this characteristic [qalqala] is qāf, because this consonant is pressed out of its position so that it is impossible to pause on it but with an additional sound, because of its strong pressure and raising (istiʿlāʾ). Its sisters mentioned with it are similar to it. [...] Its sisters were added to it [qāf] in virtue of this additional sound in pausal position. Qāf has a more obvious sound in pausal position because it is closer to throat and because of its strong raising.

**Abū Šāma**

Commenting on a verse by al-Šāṭibī (d. 590/1194) that deals with kāf and qāf as ḥurūf al-qalqala, Abū Šāma quotes Abū l-Ḥasan (al-Saḫāwī?; d. 643/1245) on

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⁶⁴ Fī « M »: wa-štabaha, wa-fī « R »: wa-ašbahahu. (Editor’s note. M refers to Makka, Qudsī 2, Qirāʾāt; R refers to Rabat, Ḵazāna ʿāmma, Awqāf 956).  
the fact that some scholars say that “the origin of qalqala is qāf” (aṣl al-qalqala li-l-qāf).66

Ibn al-Waǧīh al-Wāsiṭī
The same idea is also found in Ibn al-Waǧīh al-Wāsiṭī’s Kanz:

Wa-qīla: aṣl hāḏihi l-ṣifa [al-qalqala] li-l-qāf wa-šubbiha bihi aḥawātuhu.67

They say: the origin of this characteristic [qalqala] is qāf and its sisters are compared to it.

According to him, qāf is the “origin” of qalqala, and its “sisters” share this feature by resemblance. However, his definition of qalqala does not help us decide whether he understands the phonetic phenomenon at stake.

Ibn al-Ǧazarī
The interpretation of Ibn al-Ǧazarī is that it is impossible to pronounce qāf in pausal position without emitting a sound because qāf is “strongly raised”. One cannot be further from the [+ voiced + stop] rationale:

Wa-aṣl hāḏihi l-ḥurūf [ḥurūf al-qalqala] l-qāf li-annahu lā yuqdaru an yuṭa bihi sākin illā ma’ā ṣawt zā’id li-šiddat istiʿlāʾihi.68

The origin of these consonants [the qalqala consonants] is qāf because it is impossible to pronounce it vowelless except with an additional sound, because of its strong raising.

Ibn al-Ǧazarī does not mention the [+ stop] feature of qāf but only its pharyngealisation. He does not see any problem in the fact that /q/ and /ṭ/ are the only pharyngealised phonemes among ḥurūf al-qalqala and that it is not obvious to associate the three other phonemes (/ḡ/, /d/ and /b/) on this single base.

68  Ibn al-Ǧazarī, al-Našr, 1, p. 166, l. 11-12.
In his commentary on Ibn al-Ǧazarī’s _Muqaddima_, al-ʿAwfī mentions the same five consonants but he does not mention the fact that they are voiced stops. Instead he focuses only on the “pressure” that accompanies these phonemes. He says that this is particularly true of ʿqāf and that everybody agrees on its pronunciation with _qalqala_:

\[
\text{Wa-innamā wuṣifat bi-ḏālika \[l-qalqala\] li-annahā idā waqaṣīa 'alayḥā l-qārī taqalqala l-māharga ḥattā yusma' lahu natra qawiyya wa-huwa luğa: al-taḥarruk, wa-ašharuhā l-qāf fa-innahu mā ḥtalafa aḥad fi qalaqatiḥā \[hākaḏā. Iqra⁠ʾ: qalqalatihā\] wa-li-annaka idā qulta raḥiq wa-waqaṣītā 'alayḥā yataqalqalā biḥā l-lisān yusma' lahu nabtra wa-quwwa 'inda ḥurūḡiḥā nahrā wa-l-ḥaqq wa-l-šāṭṭ fa-lā yumkinu l-waqf 'alayḥā illā bi-ṣawt yalḥiquḥā li-daḏtiḥā.}^{69}
\]

They [these phonemes] have been so described _qalqala_ because if the reciter pauses on them, the place of articulation stirs (_taqalqala_) and a strong bark (_nabtra_) is heard, which is a word for “vocalisation”. The most famous of them is ʿqāf and no one has disagreed on its _qalqala_. If you say _raḥiq_ and pause on it, it makes the tongue stir and a tone (_nabtra_) is heard, a strength at its emission, as in _al-ḥaqq_ and _al-šāṭṭ_. It is impossible to pause on them, except with a sound that follows them, because of their pressure.

One can probably infer from the example he gives (_al-šāṭṭ_, “the shore”) that the next phoneme after _/q/ in terms of “pressure” is _/ṭ/ not _/k/. In all cases, he never mentions the fact that their _qalqala_ is related to their [+ voiced + stop] feature.

Authors Discussing _ʾ/_

_Hamza_ refers to a [+ stop] phoneme, however assigning either a [+ voiced] or a [- voiced] feature to this glottal stop is not straightforward since it consists either in opening or closing the vocal chords, depending on its location in the segment. Sībawayh considers _hamza_ to be a [+ voiced] phoneme, which makes it a [+ voiced + stop] phoneme, just like the other _qalqala_ phonemes. To distinguish the five _qalqala_ phonemes from _hamza_, Sībawayh uses the category

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^{69} Al-ʿAwfī, _al-Fuṣūl_, p. 58, l. 8-12.
of *mušraba* “saturated” phonemes, which gather all the voiced phonemes except *hamza* (which Sibawayh considers to be voiced). The definition that al-Nassir gives for *mušraba* is the following: “An element that has acquired a quality of another element.” This point remains obscure in the *Kitāb*.

A legitimate question that one can pose is why /ʾ/ is not subject to *qalqala* if it gathers the same features as the other [+ voiced + stop] phonemes, except that it is not *mušraba* “saturated”.

*Ibn al-Ǧazarī*

In his *Našr*, Ibn al-Ǧazarī presents the position of some scholars who include /ʾ/ to the list of *qalqala* phonemes, for it is a [+ voiced + stop]:


Some of them have added *hamza* to them [the *qalqala* consonants] because it is voiced and plosive, however the majority did not mention it because of its softening when it is vowelless. Thus, it is different from its sisters because of the illnesses that afflict it.

ʿArabāwī does not mention an earlier reference to a discussion about *hamza* as a *qalqala* phoneme. Sibawayh describes /ʾ/ as a [+ voiced + stop], but he does not include it in *ḥurūf al-qalqala* and he does not justify his choice. The justification of Ibn al-Ǧazarī is that unlike its “sisters” (i.e. the other [+ voiced + stop] phonemes?), *hamza* is “softened” in pausal position and is “afflicted by illnesses”.

*Sāǧaqlī Zādah al-Marʿašī*

The other scholar who is said by ʿArabāwī to have tackled the issue of *hamza* as *ḥarf al-qalqala* is Sāǧaqlī Zādah al-Marʿašī. He deals twice with this issue in his *Ǧuhd al-muqill*. In a passage devoted to *qalqala* in general, where he

71 Ibid., p. 121.
73 ʿArabāwī, *Ḫurūf al-qalqala*.
74 Ibid.
briefly gives his opinion that *hamza* is subject to *qalqala.*
In a passage dealing more in detail with the pronunciation of *hamza* in pausal position,
he comments on Makkī’s assertion in his *Rīʿāya* that the reader should “lengthen” the pronunciation of *hamza* in pausal position.

However, this passage is problematic. In Makkī’s *Rīʿāya,* the text reads: *an yaṭluba l-lafẓ bihā* (the reader should “try to obtain its pronunciation”).
But this is a correction of the modern editor, Aḥmad Ḥ. Farahāt, who notes in the apparatus that the manuscript (*fī l-aṣl*) has: *an yaṭluba l-lutf bihā* (he should “try to be kind to it”).

The quotation of Makkī’s *Rīʿāya* by Sāḡaqli Zādah reads as follows: *an yuṭīla l-lafẓ bihā* (he should “lengthen its pronunciation”).
However, the modern editor of *Ǧuhd al-muqill,* Sālim Q. al-Ḥamad, proposes in a footnote to correct both *yaṭluba* and *yuṭīla* by *yulaṭṭifa* (he should “soften its pronunciation”), which he says would solve the problem of interpreting how *hamza* could be “lengthened”, which al-Marʿašī (Sāḡaqli Zādah) faces. Al-Ḥamad does not seem to know the lesson *an yaṭluba l-lutf bihā.*

The commentary of Sāḡaqli Zādah is that the only possibility to lengthen this [+ stop] is to pronounce it with *qalqala:*

*Fa-laysa l-murād min taṭwīl al-lafẓ bihā [l-hamza] illā iẓhār qalqalatihā, id bi-l-qalqala yaṭūlu l-ṣawt.*

What is intended by the lengthening of its [*hamza*] pronunciation is nothing but the realisation of *qalqala,* since sound is lengthened by *qalqala.*

Sāḡaqli Zādah adds that *hamza* genuinely (*fī l-aṣl*) belongs to *ḥurūf al-qalqala* in its quality [+ voiced + stop] phoneme, but scholars prefer to avoid the pronunciation of *qalqala* with *hamza* because it would lead to a sound similar to “vomiting and coughing” (*al-tahawwuʿ wa-l-suʿla*), according to Makkī’s own

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76 Ibid., p. 150, l. 9-p. 151, l. 2.
77 Ibid., p. 281, l. 3-p. 282, l. 9.
80 « Qalqalatihā » sāqita min (Ṭ). (Editor’s note. Ṭ refers to Rabat, Kazāna ʿāmma, 2813).
82 Ibid., p. 281, l. 13.
Why is it Difficult to Date When Qalqala Became Unintelligible?

Sāqli Zādah considers that this reason is void since "necessity allows what is forbidden" (al-ḍarūrāt tubīḥu l-maḥẓūrāt)⁸⁴

Since they feared that it [hamza] faded when it is vowelless, it was necessary to realise it carefully in pausal position by strengthening its plosiveness and the realisation of its qalqala, even if it implied a sound similar to vomiting and coughing because necessity allows what is forbidden.

Sāqli Zādah thus teaches that hamza should be pronounced with qalqala when it is vowelless.

Authors for Which It is More Difficult to Decide Whether They Understood Sībawayh

Some grammarians, including the prominent Ibn al-Sarrāġ (d. 316/928) in his Uṣūl, have not dealt with qalqala in the first place.⁸⁶ But even with grammarians who have written on qalqala it is not easy to decide whether they understood the issue at stake in the Kitāb.

We have already mentioned above the positions of Ibn Ğinnī and of al-Zamaḫšarī. Since they give a description of qalqala which is very similar to that of Sībawayh, with no other comment, it is impossible to decide whether they really understand Sībawayh’s position.

The case of Ibn al-Ǧazarī presented above is slightly different from that of Ibn Ğinnī and al-Zamaḫšarī since he seems to be simply compiling others, namely Sībawayh, including tā’ among ḥurūf al-qalqala, and al-Mubarrad, including kāf. The mere fact that he does not express a judgment on these positions is not enough to decide whether he understands the issue or whether he noticed a change in the pronunciation of qalqala phonemes.

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⁸⁴ Sāqli Zādah al-Marʿašī, Ğuhd al-muqill, p. 282, l. 3.
⁸⁵ Ibid., p. 282, l. 1-3.
Makkī b. Abī Ṭālib al-Qaysī

We have already mentioned above the fact that Makkī considers qalqala to be “genuine” (aṣl) in qāf. Except for this point, and for the mention of a mnemonic, Makkī’s description of qalqala is very similar to that of Sībawayh in the Kitāb, such as the “pressure” (daġt) put on their “position” (mawdi’).


Qalqala consonants, also called laqlaqa. They are five consonants, gathered in the letters of the expression ǧad baṭaqa. They are so called because of the realization of a sound similar to a tone (nabra) when pronounced in pausal position and the will to complete their pronunciation. This sound is more obvious in pausal position on them [these consonants] than when they are connected.

Makkī describes89 the same [+ voiced] and [- voiced], [+ stop] and [- stop] phonemes as Sībawayh, which means that according to him, and just like Sībawayh, hurūf al-qalqala gather the [+ voiced + stop] phonemes, except hamzā. Makkī does not mention this fact explicitly, but since he writes that qalqala expresses “the will to complete their pronunciation [of these phonemes]” (irādat itmām al-nuṭq biḥinna)90 we can probably assume that he understands the phonetic phenomenon at stake, i.e. the protection of their [+ voiced] feature.

However, he does not mention any discrepancy between his actual pronunciation and that of any of hurūf al-qalqala.

Al-Dānī

Al-Dānī’s presentation of qalqala is almost identical to that of Sībawayh, with the bāʾ lesson:

Wa-min al-ḥurūf muṣraba ḍuġiṭat min mawāḏi’iḥā, fa-ʾidā waqīfa ʾalayhā ḥarağa maʾaḥā min al-fam ʿuwayt wa-nabāʾ l-lisān ʿan mawāḏi’ihi, wa-hiya ḫamsat aḥruf, yaẖmaʾuḥā qawluka (ǧad baṭaqa) al-qāf wa-l-ḡim

87 Fī « R »: summīnā. (Editor’s note. R refers to Rabat, Ḵazāna ʿāmma, Awqāf 956).
88 Makkī b. Abī Ṭālib, al-Riʿāya, p. 124, l. 11-14.
89 Ibid., p. 116-117.
90 Ibid., p. 124, l. 13.
Among the consonants, some are “saturated” (mušraba), “pressed” (ḍuġiṭat) from their positions, so that if you pause on them, a small sound exits from the mouth and the tongue withdraws from its positions. They are five consonants, gathered in the expression ġad baṭaqa, qāf, ġīm, tā‘, dāl, and bā‘. These consonants are called qalqala consonants because if you pause on them you cannot pause without the small sound, as when you say al-ḥarq, qaṭṭ, and similar [words].

The only elements which are not found in the Kitāb are the explicit number of phonemes, five, and the mnemonic, in the version given by Makkī, 92 ġad baṭaqa. Instead of Sibawayh’s example al-ḥiḏq (or al-ḥadq in other versions), al-Dānī gives al-ḥarq and adds qaṭṭ. Just like Makkī, al-Dānī93 describes the same [+ voiced] and [- voiced], [+ stop] and [- stop] phonemes as Sibawayh.

ʿAbd al-Wahhāb al-Qurṭūbī

The presentation of ʿAbd al-Wahhāb al-Qurṭūbī is also very similar to that of Sibawayh, except that he mentions a mnemonic, in a different version from that of Makkī and al-Dānī, ṯabaqa ġad:


Know that among the consonants are consonants that are pushed (tuḥfazu) in pausal position and that are pressed from their positions,
they are the *qalqala* consonants: *qāf*, *ǧīm*, *ṭāʾ*, *dāl*, and *bāʾ*. You cannot pause on them but with a sound with which the tongue withdraws from its position, because of the strength of the pushing and the pressure, as in *iḥaq*, *iḏhab*, *iḥliṭ*, *uḥruǧ*, and *uḍdud*. Some Arab emit a stronger sound. They are gathered in the expression *ṭabaqa ǧaq*. Some of them add *kāf* to the *qalqala* consonants, but it is not one of them because *kāf* is not like *qāf* in terms of tightness (*ḥaṣr*).

The other difference with Makkī and al-Dānī is that he mentions the fact that other scholars erroneously add *kāf* to the list, but he does not mention al-Mubarrad explicitly. However, he does not mention the fact that if *kāf* is not included, it is because it is [- voiced]. He also does not mention the fact that *tāʾ* is sometimes added to the list.

As was the case with al-Dānī, it is not possible to decide whether al-Qurṭubī fully understands the phonetic phenomenon at stake in *qalqala*. He simply repeats Sībawayh’s description of *qalqala* and phonetic description of [+ voiced + stop] phonemes.95

‘ʿAlam al-Dīn al-Saḥāwī (d. 643/1245)

‘ʿAlam al-Dīn al-Saḥāwī authored a book in Qur’ānic readings, *Ǧamāl al-qurrāʾ wa-kamāl al-iqrāʾ*, in which he lists many variant readings sorted by sura. At the end of the treatise is a section devoted to the rules of *taǧwīd*.96 Curiously, however, although he describes many of the phonetic rules that apply to Qur’ānic recitation, he does not mention *qalqala*.

*Abū Šāma*

We already mentioned Abū Šāma above on the fact that *qalqala* is genuine in the phoneme *qāf*. In his commentary on an other verse by al-Šāṭibī that deals with *qalqala*, Abū Šāma first quotes authorities, Makkī and al-Dānī explicitly, and “others”, and then states his own opinion on this phonetic phenomenon which he understands as follows:

*Wa-innamā ḥaṣala lahā [ḥurūf al-qalqala] ḏālika li-ṭtifāq kaw[nih]ā šadīda maḡhūra fa-l-ḡār yamnaʿu l-nafas an yaḡriya maʿahā wa-l-šidda tamnaʿu an yaḡriya šawtuhā fa-lammā ǧtamaʿa lahā ḥāḍan al-wasfān wa-huwa mtināʿ ǧary al-nafas maʿahā wa-mtināʿ ǧary šawtihā ǧtyāt*

Ilā l-takalluf fī bayāniḥā fa-li-ḏālika yahṣulu min al-daġṭ li-l-mutakallim ‘inda l-nutq biḥā sākina ḥattā takādu tahrūğu ilā šibh taharrukihā li-qāṣd bayāniḥā iḍ lawlā ḏālika lam yatabayyanu li-annahu iḍā mtana’a l-nafas wa-l-ṣawt taqdiru bayānahā mà lam yatakalluf bi-iẓhār amrihā ‘alā l-waḡh al-maḏkūr.97

It is agreed that they [the qalqala consonants] are plosive and voiced. Voicedness prevents breath to flow with them and plosiveness prevents their voice to flow, so that when these two characteristics are gathered, i.e. prevention of breath to flow with them and prevention of their voice to flow, they need to be carefully realised, this is why some pressure happens to the speaker when he pronounces them vowelless, until a pseudo vowel is almost emitted, in order to realise them, otherwise they are not realised, because if you prevent breath and voice you can realised them only if you produce them carefully in the way that is described.

This description of the [+ stop] and [+ voiced] features heavily depends on Sībawayh’s Kitāb, as is clear from the two quotations below:

\[ Fa-l-maḡhūra ḥarf ušbi’a l-iʿtimād fī mawḍiʿihi wa-manaʿa l-nafas an yaḡriya maʾahu ḥattā yanqadiya l-iʿtimād ʿalayhi wa-yaḡriya l-ṣawt.99 \]

A voiced consonant is one whose base is filled in its position and that prevents breath to flow with it until its base is completed and sound flows.

\[ Wa-min al-ḥurūf al-šadīd wa-huwa llaḏī yamnaʿu l-ṣawt an yaḡriya fīhi.100 \]

Among the consonants is the plosive, which prevents sound to flow in it.

In a [+ voiced] phoneme, breath is barred from flowing with it and in a [+ stop] phoneme voice is barred from flowing through it. This means that in [+ voiced + stop] phonemes both breath and voiced are barred. Abū Šāma then says that the realisation of these phonemes needs to be taken care of (iḥtāǧat ilā

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97 Abū Šāma, Ibrāz al-maʿānī, p. 755, l. 4-8.
99 Sībawayh, Le livre, ii, p. 453, l. 21-22.
100 Ibid, ii, p. 454, l. 6.
This then leads the speaker to pronounce something close to a vowel (ḥattā takāda taḫruǧu ilā šibh taḥarrukihā li-qāṣd bayānihā).

At the difference of Sībawayh, Abū Šāma explicitly uses these two definitions to explain qalqala. By doing this he shows that he understands the phonetic phenomenon at stake: without qalqala the complete [+ voiced + stop] feature of these phonemes cannot be preserved. However, it is impossible to tell whether he noticed that the pronunciation of qalqala phonemes had changed since Sībawayh’s time or whether he simply explains Sībawayh’s position. This last possibility would already be remarkable, if compared to other scholars who did not understand Sībawayh’s Kitāb in the first place.

Abū Šāma also refutes al-Mubarrad’s inclusion of kāf to ḥurūf al-qalqala. He quotes Ibn (Abī) Maryam al-Šīrāzī’s definition of qalqala and mentions his refutation of the inclusion by some scholars of the following phonemes to the list: /ḍ/, /z/, /ḏ/ and /ẓ/.

In all this, Abū Šāma’s position is consistent with Sībawayh’s description, which he clearly has understood.

Ibn al-Ḥāǧib and al-Astarābāḏī

In his Šāfiya, as quoted by its commentator Raḍī l-Dīn al-Astarābāḏī, Ibn al-Ḥāǧib gives this definition of qalqala:

Wa-ḥurūf al-qalqala mā yanḍammu ilā l-šadda fīhā ḍaġṭ fī l-waqf, (wa-yaǧmaʿuḥā qad ṭubiǧa).

The qalqala consonants are are those that associate plosiveness with pressure in pausal position, they are gathered in qad ṭubiǧa.

In this definition, Ibn al-Ḥāǧib does not mention the [+ voiced] feature of the qalqala consonants but only the “pressure” (ḍaġṭ) in pausal position. Thus the qalqala consonants are not the voiced stops but stops that are pronounced with “pressure” in pausal position. By changing the definition of the qalqala consonants, Ibn al-Ḥāǧib clearly breaks with the grammatical tradition. However, since he describes exactly the same [+ voiced] and [- voiced] phonemes

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102 Ibid., p. 755, l. 7.
103 The edition reads ṭaʿ but it is obviously a typing mistake, for it is already included in the list of qalqala consonants.
105 Al-Šāfiya, as quoted in al-Astarābāḏī, Šarḥ al-Šāfiyat, iii, p. 257-258.
as Sībawayh, it is impossible to tell whether Ibn al-Ḥāǧib had understood the impact of his new definition.

Raḍī l-Dīn al-Astarābāḏī who comments this text gives an account of qalqala which fully complies with that of Sībawayh. He does not explicitly mention the [+ voiced] feature as a distinctive feature of these phonemes but he clearly says that one has to pronounce them with qalqala in order to make them clear to the listener:


He says: the qalqala consonants. They are called qalqala consonants because a pressure of the tongue accompanies them in their place of articulation in pausal position, with the strength of the voice that rises from the chest. This complete pressure prevents this sound to exit. If you want to make it clear to the hearer, you need to stir (qalqala) the tongue and move it from its position until its sound exits and it is heard.

Rāḍī l-Dīn al-Astarābāḏī does not mention the [+ voiced] feature of the qalqala phonemes. The only clue we have that he might understand what is at stake in this phonetic phenomenon is the fact that he mentions the emission of a sound (ṣawt), not a breath, which is the case with voiced phonemes.

Ibn Umm Qāsim

Ḥasan b. Umm Qāsim al-Murādī authored a commentary of a treatise written in verse by ʿAlam al-Dīn al-Saḫāwī entitled ʿUmdat al-muǧīd fī l-naẓm wa-l-taḡwīd.107 In his commentary called al-Mufīd Ibn Umm Qāsim is quite specific about the phonetic phenomenon of qalqala, which he describes as follows:

106 Ibid., iii, p. 263, l. 2-5.
Concerning *qalqala*, al-Ḫalīl mentioned the strength of the voice. For Sībawayh and the reciters, *qalqala* consonants are five, gathered in *qaṭaba ġad*. They are so called because of the strong pressure of the voice in pausal position. These consonants are voiced and plosive. Voicedness prevents breath to flow with them and plosiveness prevents voice to flow through them. They need to be carefully realised, this is why some pressure of the voice happens to the speaker, until a vowel is almost reached. Al-Mubarrad said that some of them are stronger in terms of *qalqala*.

He makes exactly the same link as Abū Šāma between Sībawayh's description of *qalqala* and the [+ voiced] and [+ stop] features. His text seems to depend directly on Abū Šāma's, and just as for Abū Šāma it is impossible to decide with certainty whether Ibn Umm Qāsim had noticed any discrepancy in the pronunciation of *qalqala* phonemes with Sībawayh's description.

**Conclusion**

Obviously, much more research is needed in order to thoroughly explore the phonological views of these authors. This is especially true of their terminology, which we tend to understand through that of their predecessors, although each author may have a slightly different understanding of the technical terms they use.
Sibawayh is not always followed in his approach to *qalqala*. If he is not even understood, it is most probably because later authors would have a different pronunciation of Arabic, which would make Sibawayh’s explanations obscure.

As shown by Owens, there are two histories of Arabic, that of the literary language and that of the spoken one. *Qalqala* sits at the junction of these two histories because it is both described by grammarians of literary Arabic and performed by Qur’ānic reciters. We have only explored here the literary history of *qalqala*.

I hope this paper encourages more research into historical phonetics of Arabic and a better understanding of the refined views of Classical grammarians, in order to unify the two histories of Arabic described by Owens, based on linguistically sound arguments.

**Appendix**

The main shift in the interpretation of *qalqala* can be described as follows: from protecting the [+ voiced] feature of [+ voiced + stop] phonemes to a mere description of a special sound caused by the "strength" in some [+ stop] phonemes, voiced or voiceless. The latter view is predominant among modern reciters, as described by al-Ḥamad. Modern reciters of the Qur’ān insist on emitting the *qalqala* sound after *qāf* and *ṭāʾ*, although they are not voiced anymore in contemporary Arabic, because they are stronger stops and because they are emphatic (primarily or secondarily):

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112 Ġānim Qaddūrī l-Ḥamad, *al-Dirāsāt al-ṣawtiyya*.
Ṭāʾ and qāf are considered non voiced phonemes in contemporary literary Arabic, so that they break one of the two conditions for qalqala, which is voicedness. However, we observe that the Qur’ānic readers and Arabic speakers are keen on pronouncing the small sound of qalqala after these two phonemes in pausal position. This is made possible by the fact that these two phonemes are “strong” (plosive), so that a sound is emitted after them in pausal position, just like after kāf; only that it is stronger after these two because of the emphasis (faḫāma) of ṭāʾ through velarisation (iṭbāq), and the strength of the opening of the two organs in the pronunciation of qāf together with the fact that it is a raised (mustaʿlin) phoneme.

This type of explanation shows a shift in the practical definition of qalqala, from a protection of the [+ voiced] feature of the [+ voiced + stop] phonemes in pausal position to a sound emitted after stronger stops, voiced or voiceless.