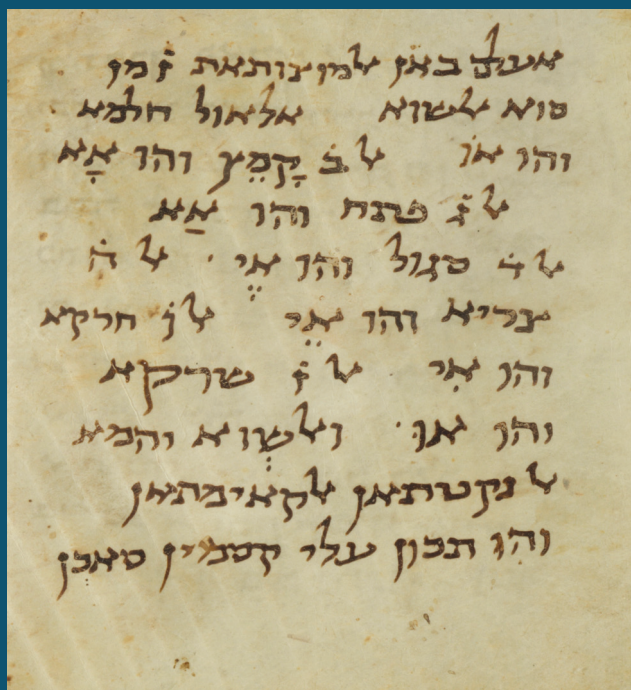# Points of Contact

## The Shared Intellectual History of Vocalisation in Syriac, Arabic, and Hebrew

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# 5. CONCLUSION

*Now that we have shown all the sections on pointing, based on the rules which we have set for it with regard to reasons and meanings, and having reached the limit in specifying that, according to the sayings of tradition, the schools of recitation, the way of language, and the model of Arabic, I believe we are at the end of our book.* (Abū ʿAmr al-Dānī [d. 1053], *The Rules for Pointing the Codices* [1960, 87a–87b])

The history of Semitic vocalisation is the shared history of Christians, Muslims, and Jews in their attempts to preserve the recitation of their holy texts. It is a history of mutual innovations, adaptations, and intellectual exchanges over the course of hundreds of years, beginning with the first Syriac relative diacritic dots in the fifth century and reaching its zenith with the absolute vocalisation systems of the eleventh century. This book has examined that history with an emphasis on the phonological ideas that medieval Syriac, Arabic, and Hebrew scholars developed to explain their new technologies of vowel pointing. The foundation for this analysis was a survey of the ways that Semitic scholars differentiated vowels from consonants, enabling them to better describe the phonetics of vocalisation (chapter 2). That survey equipped us with the vocabulary and phonological understanding needed to trace the development of relative vocalisation in Syriac, Hebrew, and Arabic up through the eighth century (chapter 3). We then explored the ways that relative vocalisation and phonology gave way to absolute pointing, specifically focusing on the development of discrete names for the vowels in Semitic linguistic traditions between the ninth and eleventh centuries (chapter 4).

Our survey of medieval linguistic texts identified three primary concepts that Semitic scholars used to distinguish the phonology of vowels from consonants: 'sounding' letters (chapter 2, §1.0), 'movements' (chapter 2, §2.0), and the dual nature of the *matres lectionis* (chapter 2, §3.0). The sounding letters descended from the Greek grammatical concept of *phōnēenta* 'sounding, voiced', a word applied to the vowels as a result of their continuous airflow and their ability to be pronounced alone. By contrast, the *aphōna* 'soundless' consonants were stop-plosives that required the assistance of vowels to be articulated. Relying on the Greek *Technē Grammatikē* of Dionysius Thrax (c. second century BCE), Jacob of Edessa (d. 708) adapted this dichotomy for Syriac with the calques *qɔlɔnɔyɔtɔ* 'sounding', which included all the vowels, and *dlɔ qɔlɔ* 'without sound', which encompassed the consonants. His conception of the sounding ones persisted in the Syriac linguistic tradition, with some modifications, through Dawid bar Pawlos (fl. c. 770–800) and up to the eleventh-century grammar of Elias of Ṭirhan (d. 1049). Early Arabic grammarians were also aware of the Greek sounding letters, but they did not apply the concept to vowels before approximately the tenth century. Instead, early scholars like al-Farrāʾ (d. 822) used the Arabic calque *muṣawwit* 'sounding' to describe groups of consonants with continuous airflow.

It was not until the Greek-Syriac-Arabic translation movement in the ninth century that an Aristotelian view of *phōnēenta* vowels penetrated the Arabic scholastic tradition, and non-grammarians like Abū Bishr Mattā (d. 940) and Ibn Sīnā (d. 1037) began to apply the concept to Arabic. They adopted the word

*muṣawwitāt*, most likely a direct calque of *qɔlɔnɔyɔtɔ* based on Syriac-Arabic lexicography. This translation also allowed Arabic-speaking Hebrew Masoretes to study 'sounding' phonology, and they applied *muṣawwita* to the category of the seven Tiberian vowels. The term is especially common in a subgenre of Judaeo-Arabic Masoretic treatises that emerged around the tenth century. These have come to be known as *muṣawwitāt* texts due to their emphasis on explaining the Hebrew vowels.

Rather than sounding letters, Arabic grammarians overwhelmingly preferred the idea of 'movement' to describe vowels, naming them *ḥarakāt* 'movements'. This term somehow indicated the vocalic energy required to move between the consonants of a word. Its antonym was *sākin* 'still', which instead applied to unvocalised consonants. *Ḥaraka* is attested from the earliest Arabic grammatical sources in the eighth century, but the origin of the term is unclear. It is most likely a calque of the Greek word *kinesis*, which has the occasional use of referring to inflectional vowels at the ends of Greek words in *scholia* of Dionysius Thrax's *Technē*. It may also be related to the early Syriac accent names *zawˁ* 'movement' and *mziˁɔnɔ* 'mover', which both predate the earliest mentions of *ḥaraka* in Arabic grammar, but this connection is uncertain. What is clear is that later Syriac grammarians, like Elias of Ṭirhan (d. 1049) and Elias of Nisibis (d. 1046), calqued the Arabic words *ḥaraka* and *mutaḥarrik* 'moved, vocalised', referring to Syriac vocalisation (and sometimes accents) with *zawˁ* and *mettziˁɔnutɔ* 'moved, vocalised'. Hebrew scholars, like the author of the *Treatise on the Shewa* and Abū al-Faraj Hārūn (d. c. 1050), also utilised *ḥaraka, mutaḥarrik,* and *sākin*. They retained the original

meanings of these words while simultaneously adapting them to better describe the mobile and quiescent forms of *shewa*.

Syriac, Arabic, and Hebrew scholars all dealt with the twin functions of the *matres lectionis*, which were letters that could represent vowels or consonants depending on their context. These letters functioned as a modicum of 'vocalisation' prior to the invention of the vowel points, and their dual nature provoked complex analyses of their phonological features. The earliest descriptions of these letters in Arabic come from al-Khalīl ibn Aḥmad's (d. 786/791) introduction to *Kitāb al-ʿAyn*, the lexical material compiled in subsequent sections of that book, and the *Kitāb* of al-Khalīl's student, Sībawayh (d. 793/796). They indicate that the *matres lectionis* are the most ephemeral of all the letters, calling them 'soft' (*layyin*), 'subtle' (*khafī*), 'airy' (*hāwī*), and 'sick' (*ḥurūf ʿilla*). These attributes apply because grammarians perceived the function of the *matres lectionis* letters to represent vowels as a type of elision (*ʾikhfāʾ* lit. 'concealment'), and the changeability between consonantal and vocalic forms made the letters weaker than the rest of the consonants. Several Masoretic *muṣawwitāt* authors adopted similar language, describing the multiple phonetic realisations of the *matres* in similar terms to the multiple realisations of the 'relaxed' (*rafe*) and 'pronounced' (*mappiq*) *bgdkpt* letters.

The Hebrew lexicographer Judah ben David Ḥayyūj (d. c. 1000) was especially familiar with Arabic conceptions of the *matres*, and he adapted their vocabulary to describe the *sākin layyin* ('soft silent' or 'latent quiescent'). He used this principle to explain how some Hebrew vowels are pronounced even when they

are not written *plene* with a *mater lectionis*. Similar discussions of the *matres* appear in the work of Elias of Nisibis, who seems to calque the Arabic concept of *ʾidghām* 'suppression, assimilation' with the Syriac term *metgneb* 'suppressed' to explain the defective spellings of certain words. At the same time, his contemporary, Elias of Ṭirhan, explicitly rejected the Arabic analysis of 'sick' *matres lectionis* letters, instead invoking the principle of 'soundingness' to insist that the *matres* were the only letters that were *not* sick, since they could be pronounced alone.

Furthermore, members of all three traditions divided their vowel inventories into groups according to the *matres lectionis*, assigning each of their vowel phonemes to a particular letter. This practice was simplest for Arabic, where each *mater* was responsible for just a single vowel, but Syriac and Hebrew writers expanded the concept for their larger vowel inventories. Some evidence from Ibn Jinnī's (d. 1002) *Sirr Ṣināʿa al-Iʿrāb*, al-Khwārizmī's (d. 997) *Mafātīḥ al-ʿUlūm*, and Ḥunayn ibn Isḥāq's (d. 873) *Kitāb Aḥkām al-Iʿrāb ʿalā Madhhab al-Yūnāniyyīn* suggests that part of this shared tradition of grouping vowels may be connected to the Greek names for vowel letters (*omega, omicron*, etc).

Our exploration of the vowel qualities themselves began by examining the concept of 'relative' vocalisation (chapter 3), which refers to methods that medieval scholars used to indicate vowels based on their relationship to other vowels. These include the Syriac diacritic dot system and the Masoretic practice of differentiating vowels as *milleʿel* 'above' or *milleraʿ* 'below', both of which were connected to ideas of phonetic 'height' and eventually informed the placement of the Syriac and Hebrew vowel

points (chapter 3, §1.0). A similar concept appears in the Arabic terminology of *naṣb* 'standing upright' and *ʾimāla* 'bending down', which also connected vowels to 'height' and described the relative qualities of allophones of /a/ and /ā/ (chapter 3, §2.0).

The Syriac diacritic dot system is the primary graphical example of relative vocalisation. The grammatical works of Jacob of Edessa (d. 708) describe vowels as either 'thick' and 'wide' or 'thin' and 'narrow'. The former were generally more backed and open, while the latter were more fronted and closed, but each of these adjectives described the vowels of a word only in relation to those of its homographs. Syriac scribes indicated these relationships by placing a diacritic dot above a word to indicate relatively 'thick' or 'wide' vowels, while that word's homograph with comparatively 'thin' or 'narrow' vowels took a dot below. This practice led to an association of the vowel phonology of homographs with 'height', as backed vowels were considered 'above' their fronted 'below' counterparts. We saw that Jacob refers to these homographs as *men lʿel* 'above' and *men ltaḥt* 'below', and it seems that these phrases are the source of the Masoretic terms with the same meanings: *milleʿel* and *milleraʿ*. Early Masoretes applied these two words to differentiate Hebrew homographs that differed by a single vowel, taking up the idea of 'backness' as 'height' and creating a vowel 'scale'. However, they did not adopt the Syriac diacritic dot directly. Instead, the phonological principles of 'above' and 'below' vowels informed the later positioning of the absolute vowel points in both Syriac and Tiberian Hebrew. For Syriac, these points evolved gradually over several centuries of scribal developments. By contrast, it seems the

Tiberian Masoretes invented their system all at once, consistently analysing the hierarchy of the vowel scale to determine the number and position of the points in their vocalisation signs.

Classical Arabic had a much smaller inventory of vowel qualities than Syriac and Hebrew—only three, compared to their six or seven—so Arabic scribes did not need a relative vocalisation system to indicate cardinal vowels. Instead, Arabic scholars applied the principles of 'height' as 'backness' to their analysis of vocalic allophones. Likely in the late seventh or early eighth century, they introduced the pair of terms *ʾimāla* 'bending down' and *naṣb* 'standing upright', describing relatively fronted (e.g., /e/, /ɛ/) and backed (e.g., /a/, /ɑ/, /ɔ/) allophones of /a/, respectively. These terms would have been useful for describing allophonic pronunciations in Qurʾānic recitation that could not be represented by the Arabic script or the red-dot vocalisation system. *Naṣb* then became a name for the cardinal vowel /a/, at least until the early ninth century. Meanwhile, *ʾimāla* remained in use for fronted allophones (/e/) in opposition to *tafkhīm* 'thickening' (/ɔ/, /o/).

In chapter 4 we followed the transition from relative to absolute vocalisation by tracing the introduction of absolute vowel names to Arabic (chapter 4, §1.0), Syriac (chapter 4, §2.0), and Hebrew (chapter 4, §3.0) phonology. Arabic grammarians had two sets of absolute names for their cardinal vowels by the first half of the eighth century at the latest. One of these, the *ʾiʿrābī* set, evolved from the perception among Arabic grammarians that the back of the mouth (or more precisely, the velum) was the

highest articulation point, and thus velarised sounds were 'ele-
vated' (*mustaʿliya*). Accordingly, the front of the mouth was 'low-
ered' (*munkhafiḍa*), and the idea of *khafḍ* 'lowering' became as-
sociated with the front vowel /i/. Its antonym was *rafʿ* 'rising', a
term which correlates with the 'high' velar pronunciation of /u/,
and these two names supplemented *naṣb* to form a complete set
of absolute vowel names. These 'ʾiʿrābī' terms also became the
names of the grammatical cases, connecting them to the vowels
that most often occurred in each inflectional ending.

At least as ancient as the ʾiʿrābī set is the 'non-ʾiʿrābī' set,
including *fatḥ* 'opening' (/a/), *kasr* 'breaking' (/i/), and *ḍamm*
'pressing together, bringing together' (/u/). These describe the
opening and closing of the mouth or lips when articulating each
vowel. They share this descriptive concept with vowel names in
both Syriac and Hebrew, but the idea of 'wide-and-narrow' pho-
nology is so widespread that it is not clear whether any one lin-
guistic tradition calqued their terms from the others.

The first hints of absolute vowel terminology in Syriac fol-
low a similar 'wide-and-narrow' model. Dawid bar Pawlos writes
about the different qualities of the *matres lectionis* letters *waw* and
*yod* as *ptiḥɔ* 'opened' (likely /o/ and /e/ or /ay/), *ʿṣiṣɔ* 'con-
strained' (/u/), and *ḥbiṣɔ* 'squeezed, pressed-together' (/i/). He
also refers to letters with /a/ and /ɔ/ as *ptiḥɔ* 'opened' and *zqipɔ*
'stood upright', respectively. This term from the *zqp* root is most
likely a calque of the Arabic *naṣb*, a name for /a/ that could also
indicate /ɑ/ after a *mustaʿliya* letter. Ḥunayn ibn Isḥāq (d. 873)
identifies the vowels more directly in *Ktɔbɔ d-Shmɔhe Dɔmyɔye*,
where he describes letters as *zqipɔ* or *ptiḥɔ*. He also introduces the

term *sheshlɔ* 'chain' to name the two-dot supralinear vocalisation sign that represents /ɔ/. The lexicographers ʿĪsā ibn ʿAlī (d. c. 900) and Ḥasan bar Bahlul (fl. 942–968) use the same type of participial terminology to designate vowels in their Syriac-Arabic lexica, including *zqipɔ* and *ptiḥɔ* plus *rbiṣɔ* 'compressed' (/e/), *zribɔ* 'contracted, narrowed' (/e/), and possibly *ḥbiṣɔ* (/i/). Besides *zqipɔ*, all these terms relate to the relative openness or closedness of a vowel, representing a direct conceptual evolution from Jacob of Edessa's earlier *pte* 'wide' and *qaṭṭin* 'narrow' comparisons.

Syriac linguists reached complete sets of absolute vowel terms only around the eleventh century, as evidenced by the grammars of Elias of Nisibis (d. 1046) and Elias of Ṭirhan (d. 1049), who also introduced nominalised forms of the vowel names. However, these two scholars did not always agree on which vowels their terms represented. The Nisibene Elias lists *zqiptɔ* (/ɔ/), *rbiṣtɔ* (/e/), *ptiḥtɔ* (/a/), *rwiḥtɔ* 'broadened' (/o/), *ʾaliṣtɔ* 'narrowed' (/u/), *massaqtɔ* 'raised' (/e/), and *ḥbiṣtɔ* (/i/). Again, most of these rely on 'open-and-closed' comparisons of vowels. The *zqp* term is still an exception, but so is *massaqtɔ*— likely a calque of Arabic *marfūʿ* 'raised up, given /u/'—which seems to indicate that /e/ is 'higher' (i.e., more-backed) than /i/. By contrast, Elias of Ṭirhan names the vowels *zqɔpɔ* (/ɔ/), *ptɔḥɔ* (/a/), *rbɔṣɔ* or *sheshlɔ* (/e/), *massaqɔ* or *rwaḥtɔ* (/o/), *ḥbɔṣɔ* (/u/), and *yod* (/i/). For him, *massaqɔ* represents the 'raised' backed position of /o/ relative to /u/, while *ḥbɔṣɔ* seems to be a calque of Arabic *ḍamm* 'pressing together' (/u/). These differences show

that the East Syriac vowel names were not standardised even at
the end of the period covered in this book.

Hebrew absolute vowel terminology was equally varied, as
Masoretes and grammarians developed four conventions to name
their vowels between the ninth and eleventh centuries. All four
began with the old relative terms from *ptḥ* 'opening' for /a/ and
*qmṣ* 'closing' for /ɔ/, and then supplemented them by various
means. The first, known from Masoretic notes and the work of
Aharon ben Asher (d. c. 960), was an expansion to the relative
terminology, contrasting /ɛ/ and /e/ as 'small *ptḥ*' and 'large
*qmṣ*', respectively. Second, some Masoretes, like the author of the
*Treatise on the Shewa*, named vowels according to the number and
position of the Tiberian vocalisation points. Third, ninth-century
Masoretes introduced Aramaic 'phonetic' names that described
the physical processes of articulating vowels, including *ḥelmɔ*
'closing firmly' (/o/), *sherqɔ* 'whistling' (/u/), *ṣiryɔ* 'cracking,
splitting' (/e/), and *ḥerqɔ* 'gnashing the teeth' (/i/). These names
later took Hebrew segolate forms (*ḥelɛm*, etc.), which appear in
Saadia Gaon's (d. 942) presentation of the old *milleʿel-milleraʿ*
vowel scale in *Kutub al-Lugha*. Finally, as evidenced by the trea-
tise which Allony called *Kitāb al-Muṣawwitāt*, some Hebrew schol-
ars adapted Arabic grammatical terminology to name their vow-
els. These included Arabic inflectional terms such as *naṣba* (/o/)
and *khafḍa* (/i/), as well as *qibbuṣ* 'bringing together' (/u/),
which is ultimately a calque of Arabic *ḍamm*. These linguists used
Arabic terms not just as absolute vowel names, but some—like
Abū al-Faraj Hārūn (d. c. 1050) and the anonymous author of

*Kitāb Naḥw al-ʿIbrānī*—also adapted them to divide the Hebrew vowel scale into phonetic groups.

    This book presents a history of Semitic vocalisation, but it is not, as Shelomo Morag contemplated, the "complete history" (1961, 5). It compares the ways the Syriac, Arabic, and Hebrew linguists faced the shared challenges of preserving their religious recitation traditions in an increasingly Islamicised and Arabicised—but also multicultural and multi-ethnic—medieval Middle East. It is a proof of concept that simultaneous close readings of sources from different religious and linguistic traditions can yield valuable insights into the historical contexts of the people who produced them. Such comparisons highlight the points of contact between diverse communities and allow for the reconstruction of more complete intellectual histories for each group involved. However, this comparative methodology also highlights its own weaknesses, since there are many topics that we cannot fully incorporate.

    As a result, we are still quite a way from a complete history of Semitic vocalisation, but the path forward is clearer than ever before. Besides the primary frameworks outlined above, the other methods by which Semitic linguists differentiated the phonetic categories of vowels and consonants require further examination. Such research would include comparisons of the ways that Syriac and Hebrew scholars utilised the cognate terms *neʿmɔtɔ* 'melodies' and *naʿimot/naghamāt* 'melodies, tones' (see Allony 1971), as well as the ways that they interpreted the Arabic terms *ʾiʿrāb* 'making Arabic' and *naḥw* 'grammar, form' (see chapter 2, §4.0). Related research might include a systematic comparison of the

phonological meanings of the Syriac and Hebrew accent names
in relation to the vowels, building on the work of Eric Werner's
*The Sacred Bridge* (1959), which I have not dealt with here. I have
also not examined many of the Hebrew and Aramaic notes found
in Ginsburg's *Massorah* (1880) or Baer and Strack's appendices to
*Dikduke ha-Ṭeʿamim* (1879), but it would not be surprising if some
of them contain technical vocabulary that also appears in the Syr-
iac tradition (e.g., *qɔlɔnɔyɔtɔ* 'sounding ones'). Further analysis of
the technical terms related to vocalisation in Arabic *tajwīd* schol-
arship would also prove illuminating (see Nelson 2001; Gade
2003; Khan 2020, I:100, n. 123, 440, n. 183).

Besides Syriac, Arabic, and Tiberian Hebrew, there are
other aspects of the history of vocalisation that only studies of
additional systems can reveal. For example, we have not exam-
ined to what extent the Palestinian and Babylonian vocalisation
systems are related to the Tiberian tradition and Arabic grammar,
especially in terms of their technical vocabulary (see Morag
1961, 30–41; Dotan 2007, §§5.1–2). The same can be said for
Samaritan Hebrew, which is surely relevant to the medieval re-
lationship between Arabic and Hebrew linguistics (Morag 1961,
41–44).[1] We have also not addressed the fourth major tradition
of Semitic vocalisation, which of course appears in the Ethiopic
writing system. This tradition is unique among Semitic lan-
guages, as rather than the free-floating vowel points and strokes,
it utilises an alphasyllabic system in which vowel 'diacritics' are

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[1] A possible starting point would be the discussion of Samaritan gram-
marians and phonology in the introduction to Ben-Ḥayyim and Tal
(2000). See also, Dotan (2007, §5.6).

bound directly to consonantal bases. This Ethiopic alpahasylla-bary appeared at least as early as the fourth century, apparently under the influence of Greek, and well before the vocalisation systems in Syriac, Arabic, and Hebrew (Ullendorff 1951). At least on the surface, this system is more reminiscent of the South Asian Indic alphasyllabaries than other Semitic scripts.[2] Finally, the history of Coptic linguistics is also relevant to Semitic vocalisation. We have already noted that Coptic grammarians may have been aware of the concept of 'sounding' letters (chapter 2, §1.2),[3] and the Greek-derived Coptic alphabet is among the few Middle Eastern scripts that actually indicates vocalic phonemes with letters on par with the consonants. Jacob of Edessa invented the same type of vowel letters for use in Syriac, and although it is assumed that he based his letters on the Greek alphabet (Merx 1889, 51; Segal 1953, 42), he also studied in Alexandria and would have been exposed to Coptic in the Christian community there (Hoyland 2008, 20–21). If we are ever to reach a complete history of Semitic vocalisation, then each of these other systems must be brought into the proper context with the languages discussed here. It is hoped that this book provides a firm foundation to anchor future comparative studies of vocalisation, especially for experts in adjacent fields.

We may at last recall ʿAbd Allah ibn Ṭāhir, the ninth-century governor of Khurasan, who held a hard line against any kind

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[2] This may be an opportunity to revisit Revell's hypothesis of Indian influence on the early arrangement of Arabic consonantal phonology (1975).

[3] See Bauer (1972, 147–48) and Versteegh (2011).

of pointing in Qurʾān manuscripts. He lamented the addition of dots: "How beautiful this would be, if there were not so much coriander seed scattered over it!" (Hughes 1895, 686). We now see that he represents just a single opinion in a varied history of linguistic traditions that grew and evolved together over hundreds of years. In the end, it turns out, the study of vocalisation required many different points of view.