The Background of the So-called ‘Extended Tiberian’ Vocalization of Hebrew

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The vocalization of modern printed Bibles is a tradition that has its origins in the standard Tiberian system of vocalization. This was developed by the Masoretes of Tiberias, whose school was active in the early Islamic period down to the 10th century. This system of vocalization is found in extant early manuscript codices of the Bible that were produced by the Tiberian Masoretic school, the best known being the Aleppo Codex, and it reflects the Tiberian biblical reading tradition. The standard Tiberian vocalization continued to be transmitted in manuscripts produced in later centuries after the cessation of the Tiberian Masoretic school. These include the so-called Codex Leningradensis (St. Petersburg National Library of Russia I Firkovitch B19a), which was copied in the 11th century and forms the basis of modern academic editions such as BHS and BHQ. There is remarkable uniformity in the standard Tiberian vocalization across the medieval manuscripts, with only a few minor variations, some of which can be correlated with known differences between Masoretes during the Masoretic period.1

Among the Hebrew Bible manuscripts that have come down to us from the Middle Ages can be found also those that have a non-standard type of Tiberian vocalization. These manuscripts use the Tiberian vocalization signs, but exhibit numerous deviations from the system of the standard Tiberian tradition. These deviations are found in the distribution of the vowel signs and the shewa and in the use of the dagesh and refeh signs. In this paper I should like to focus on the non-standard use of dagesh in such manuscripts and offer an explanation as to how it developed.

In many extant manuscripts with non-standard Tiberian vocalization the use of the dagesh sign has been extended to a greater range of contexts than is found in the standard Tiberian system. This distinctive feature of such manuscripts, and also the extended use of the hatf gomes sign, led Yeivin to term their vocalization ‘extended Tiberian’.2 Other scholars have proposed terms that relate to distinctive

1 For the Tiberian Masoretic tradition see Israel Yeivin, Introduction to the Tiberian Masorah, Masoretic Studies (Missoula, 1980) and Geoffrey Khan, A Short Introduction to the Tiberian Masoretic Bible and Its Reading Tradition, 2nd ed. (Piscataway, 2013).
features in the use of the vowel signs of these manuscripts. One widely used term of this type is ‘Palestino-Tiberian’. This refers to parallels that exist between the distribution of the Tiberian vowel signs in the manuscripts with that of the vowel signs of manuscripts with Palestinian vocalization, in particular the interchange of qameṣ and pataḥ, on the one hand, and sere and seghol, on the other. In this paper I shall use Yeivin’s term extended Tiberian.

The extended Tiberian type of vocalization has been found in biblical manuscripts written in medieval Europe, in both Ashkenaz and Italy. The best known European biblical manuscript of this type is Codex Reuchlinianus, written in Karlsruhe in 1105 CE. A range of manuscripts with non-standard Tiberian vocalization and extended use of the dageš that were written in the Middle East were discovered in the Cairo Genizah by Kahle, who published descriptions of some of them. Descriptions of other Genizah fragments were subsequently made by other scholars, in particular Diez Macho and Revell. Further work has recently been carried out by Samuel Blapp on the Bible fragments with non-standard Tiberian vocalization from the Genizah for his Ph.D. thesis at the University of Cambridge.

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3 See Alexander Sperber, The Pre-Masoretic Bible, Corpus Codicum Hebraicorum Medii Aevi 2 (Copenhagen, Munksgaard, 1956-1959). Additional manuscripts of this type from Italy are described by Chiara Pilocane, Frammenti dei più antichi manoscritti biblici italiani (secc. XI-XII): analisi e edizione facsimile (Firenze, 2004).


5 Paul Kahle, Masoreten Des Westens, Texte Und Untersuchungen Zur Vormasoretischen Grammatik Des Hebräischen (Stuttgart, 1927), vol. 2.


The wide distribution of the non-standard type of Tiberian vocalization in many medieval manuscripts written in Europe led Kahle to believe that it must have been associated with a major stream of Masoretic tradition that is traceable in the Masoretic sources. A common feature of the manuscripts is the vocalization with hireq before yod in contexts such as לִישְׂרָאֵל where standard Tiberian generally has shewa followed by yod with hireq (לְׂיִשְׂרָאֵל). This is recorded in Masoretic lists and treatises as a distinctive practice of Ben Naftali. Kahle, therefore, held that this vocalization type was associated with the tradition of Ben Naftali. In reality, however, the manuscripts with non-standard Tiberian vocalization contain numerous features that are not attributed to Ben Naftali or Ben Asher in the Masoretic lists, such as the extended use of dagesh and rafeh and also the interchange of qamesh and patah, on the one hand, and seghol and šere, on the other. The attribution of the system to the Ben Naftali school was subsequently followed by Prijs. Díez Macho maintained that the vocalization had its roots in the Ben Naftali school but had undergone further development and so he terms it ‘Pseudo-Ben Naftali’. Morag argued against the attribution of the system to the Ben Naftali school and terms it ‘Fuller Palestinian’. Dotan believed that the vocalization was a continuation of the Palestinian vocalization.

There is a considerable degree of variation in the use of the dagesh sign across the various extended Tiberian manuscripts, but there is a clear tendency in many manuscripts for this sign to be used more frequently than in the standard Tiberian vocalization. Concomitantly there is also a wider use of the rafeh sign. The distribution of dagesh and rafeh in Codex Reuchlinianus, the best known biblical manuscript with this system of vocalization, has been studied by Morag. He shows that in this manuscript the rules of the marking of dagesh and rafeh on the בגדכפ׳׳ת

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10 He was following in this respect the identification by Delitzsch of the non-standard features of the Codex Reuchlinianus with the Ben Naftali tradition; see Seligmann Baer and Franz J. Delitzsch, Liber Jeremiae (Leipzig, 1890), ix., and Christian Ginsburg, Introduction to the Massoretico-Critical Edition of the Hebrew Bible, Reprint (New York, 1966), 640.


12 ‘Un Manuscrito Hebreo Protomasoretico’; ‘A New List of So-Called “Ben Naftali” Manuscripts’.

13 ‘The Vocalization of Codex Reuchlinianus’.


15 ‘The Vocalization of Codex Reuchlinianus’.
letters are, in principle, applied to all letters, except the pharyngals (ח, כ, ר, and those that function as both *matres lectionis* and consonants (א, י, ג, נ). The *dagesh* sign, therefore, is marked on the majority of letters at the beginning of a word and within a word after a silent *shewa*, e.g. הָעָלָם ‘number’ (Isa. 10.19, standard Tiberian הָעָלָם, מֵסְפָּר), מַמְלָכָה ‘kingdom’ (Jer. 18.9, standard Tiberian מַמְלָכָה, מֵסְפָּר, מַמְלָכָה ‘my vineyard’ (Isa. 5:3, standard Tiberian מַמְלָכָה, מֵסְפָּר, מַמְלָכָה ‘sick’ (Isa. 10.18, standard Tiberian מַמְלָכָה, מֵסְפָּר). The use of *dagesh* and *rafeh* in numerous other manuscripts of this type, both biblical and non-biblical, has been described by Eldar. He shows that many of the manuscripts follow a basic principle of marking of *dagesh* similar to that of Codex Reuchlinianus, although there is a considerable amount of diversity in points of detail. The investigation by Blapp of Genizah fragments with extended Tiberian vocalization has revealed a similar basic distribution, although each manuscript exhibits some variant features.

According to Morag the *dagesh* sign at the beginning of a word and after silent *shewa* in this system of vocalization did not have a phonetic realization of gemination but only had the function of indicating a syllable boundary. Eldar likewise takes the view that this *dagesh* did not have a phonetic realization but rather was a ‘separative *dagesh*’.

Yeivin agrees with Morag and Eldar that the function of the *dagesh* in the extended Tiberian manuscripts was to express the division of syllables. He argues, however, that it was not simply an abstract sign but rather had the phonetic value of a *dagesh forte*. This would explain why it is not marked on consonants that do not in principle take *dagesh forte*, in particular the pharyngal consonants.

In the Tiberian masoretic manuscripts that were written during the masoretic period there are a few cases of the marking of the *dagesh* sign on letters other than הבכש for the purpose of ensuring a clear division of syllables and words. In Codex Leningradensis (I Firkovitch B19a), for example, a *dagesh* is sometimes placed on an initial *lamed* of the second word of a phrase connected with *maqef* when the first word ends in *nun*, e.g. וַיִתֶּן־לּו ‘and he gave him’ (Gen. 24:36). This can be regarded as a measure to separate the two words clearly and prevent the coalescence of the consonants by a process of assimilation. The *dagesh* would mark the articulation of

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16 *The Hebrew Language Tradition in Medieval Ashkenaz (ca.940-1350 C.E.),* 125–43.
17 ‘The Non-Standard Tiberian Hebrew Language Tradition according to Bible Manuscripts from the Cairo Genizah’.
18 ‘The Vocalization of Codex Reuchlinianus: Is the Pre-Masoretic Bible Pre-Masoretic?’; 226–28.
19 *The Hebrew Language Tradition in Medieval Ashkenaz (ca.940-1350 C.E.),* 125–43.
20 *משמעון שם הדוצר בפיוocrat המדריך*.
21 *Yeivin, Introduction to the Tiberian Masorah,* 294–95.
the *lamed* with increased muscular pressure to ensure it maintains its correct articulation. According to the Masoretic treatise *Kitāb al-Ḳilaf* by Miša’el ben ‘Uzzi’el, Ben Naftali placed a *dageš* in the first nun of the name nun in the combination בינונ. This was a measure to prevent the coalescence of two identical letters across a word-boundary. An alternative strategy to separate the two letters is to place a *paseq* between the words, e.g. לְׂהַגְׂדִִּ֨יל ׀ לְׂמַַ֜עְׂלָה 'to make exceedingly great' (1 Chron. 22:5), and this is found also in a number of Tiberian Masoretic manuscripts.

According to *Kitāb al-Ḳilaf*, Ben Naftali marked a *dageš* in the qof of the verb יַעְׂק 'he surplants' (Jer. 9:3) and this is found also in a number of Tiberian Masoretic manuscripts. This indicated that there was a syllable division before the qof and that, therefore, the ‘ayin had a silent shewa. This alerted the reader to the fact that the syllable division was different from that of the more frequent form יַעֲק 'Jacob'. The practice of the Masorete Ben Naftali to use *dageš* in this way reflects his general tendency to introduce innovative measures to ensure a careful reading to a greater extent than Ben Asher, who was more conservative. Another innovative feature of the reading of Ben Naftali, for example, is that it exhibits a slightly greater tendency than Ben Asher to separate small words connected by a *maqṣef* by reading the first word with an accent.

The phenomenon of marking *dageš* to give prominence to syllable division has a natural phonological explanation. The optimal contact between two adjacent syllables is where the onset of the second syllable is stronger than the offset (coda) of the preceding syllable. According to this principle, strength is equated with degree of sonority or the quality of being vowel-like. This optimality principle can influence how a sequence of phonological segments is syllabified. In a sequence of two consonant segments CC a syllable division between the two is more preferred if the second consonant is less sonorant, i.e. stronger, than the first. The sonority of a consonant can be decreased by a process of fortition. Gemination is a clear process

23 ed. ibid., ש"א.
27 Silje Alvestad and Lutz Edzard (*La-Hṣōb but La-Hāzōr?: Sonority, Optimality, and the Hebrew p’‘eh Forms*, Abhandlungen Für Die Kunde Des Morgenlandes, Bd. 66, Wiesbaden, 2009) have demonstrated how this principle can explain the distribution of the insertion of *ḥaṭeph* vowels in verbs with initial *ḥeth* in Tiberian Hebrew.
of fortition 28, so it follows that gemination of a consonant is a natural way to mark a clearer syllable division. This also indicates that the dagesh in such forms as יֵעָקֵב should indeed be interpreted as having the phonetic realization of gemination and is not purely an abstract symbol of syllable division.

The practice attributed to Ben Naftali of marking dagesh in a letter after a guttural with silent shewa (ם) and in the second word in phrases such as and יַעְׂקָב to mark a clear division of syllables occurs in a number of later Bible manuscripts, e.g. יַעְׂקָב 'and he harnessed' (Exod. 14:6), יַעְׂזֵר 'Jazer' (Num. 32:35), יַעְׂקָב 'to eat bread' (Gen. 31:54), יַעְׂקָב 'to them from sorrow' (Esther 9:22). 29 These can be interpreted as reflecting a tradition of marking syllable divisions that is descended, directly or indirectly, from the practice attributed to Ben Naftali.

Yeivin believes that the use of the dagesh in the extended Tiberian vocalization system was an extension of the sporadic uses of dagesh with a separative function in the standard Tiberian manuscripts in structures such as יֵעָקֵב 'and he gave him' (Gen. 24:36), יֵעָקֵב ‘he surplants’ (Jer. 9.3) and יֵעָקֵב.

Yeivin’s argument that the dagesh in the extended Tiberian manuscripts should be interpreted as dagesh forte is fully persuasive. It is not clear, however, why there should be a leap from the isolated uses of separative dagesh forte in Tiberian manuscripts to the use of dagesh forte on all letters that can take them with the same distribution of dagesh lene on בֹּנְכֵם consonants.

Also the separative function of the dagesh in word-initial position when the preceding word ends in a vowel is not clear, e.g. יֶלְדוֹתֵר שֶׁׅנְוֵה וּיוֹרֵד (Codex Reuchlinianus, Morag 1959, 221) = Tiberian יֶלְדוֹתֵר שֶׁׅנְוֵה וּיוֹרֵד ‘a love song for my beloved’ (Isa. 51). The natural way to separate a word from a preceding word ending in a vowel is to lengthen the final vowel of the first word. Gemination of the initial consonant of the second word has the opposite effect and expresses rather prosodic bonding. The result of such prosodic bonding is found in dehiq structures and structures with the word מַה followed by a dagesh. In dehiq structures dagesh occurs on the first consonant of a word that has the stress on the first syllable when it is preceded by a word with a conjunctive accent or maqṣef ending in an unstressed open syllable. It occurs mainly where the vowel in the unstressed open syllable is seghol or qames, e.g. יֶלְדוֹתֵר שֶׅנְוֵה וּיוֹרֵד ‘who are these to you?’ (Gen. 33.5), יֶלְדוֹתֵר שֶׅנְוֵה וּיוֹרֵד ‘(you breached) for yourself a breach’ (Gen. 38.29). 30 The Aramaic Masoretic term dehiq

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30 For further details see Yeivin, *Introduction to the Tiberian Masorah*, 290–293.
means ‘compressed.’ In the Masoretic treatise *Hidāyat al-Qāri’* it is stated that it had this name because the final vowel of the first word was reduced in length.\(^{31}\) The phenomenon can be regarded as a bonding process, traditionally referred to as ‘conjunctive *dagesh*,’ whereby some of the length-timing of the final vowel of the first word is transferred to the following consonant.\(^{32}\) The fact that it occurs predominantly with the low vowels *seghol* and *qameṣ* can be correlated with the inherently longer duration of low vowels than that of higher vowels. In the case of the interrogative particle הָיָּ֣ה ‘what’ the vocalization appears to reflect a full reduction to a short vowel in such circumstances, since the vowel under the הָיָּ֣ה is *pataḥ* rather than *qameṣ*, e.g., מַהֲרָ֖שׁנָֽיו, ‘why do you cry?’ (Exod. 14.15). This indicates that at some point in the historical development of the Tiberian pronunciation this cliticized particle must have become completely bonded and the vowel before *dagesh* was short.

I shall argue here that the missing link between the sporadic use of separative *dagesh* in Tiberian manuscripts and the system of *dagesh* found in the extended Tiberian manuscripts was a hitherto unidentified orthoepic phenomenon that developed in the Tiberian reading tradition which I shall term the extended *dagesh forte* reading.

The basic principle of orthoepy is to ensure that the distinct elements of the text are given their optimal realization, keeping them maximally distinct and avoiding slurring over them. Some orthoepic measures in the Tiberian reading are late developments that should be dated to the medieval period, but some have greater time depth.\(^{33}\) The extended *dagesh forte* reading is one of the orthoepic measures that developed in the later stages of the Tiberian reading tradition.\(^{34}\)

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involved pronouncing the *dagesh lene* of יִרְׂבֶּּ֖ה letters at the beginning of syllables as *dagesh forte*. Evidence for this can be found in medieval Karaite transcriptions of the Hebrew Bible into Arabic script. The Karaite transcriptions were mostly written in the 10th and 11th centuries and generally reflect the Tiberian reading tradition. The majority of them represent the reading in Arabic orthography and many used also Arabic vocalization signs. They, therefore, give us an insight into the Tiberian reading that is independent of the Hebrew orthography and vocalization sign system.35 In several of these transcriptions the Arabic šadda sign (i.e. the sign for gemination in Arabic) is marked both where the Tiberian vocalization has *dagesh forte* and also where, according to the normal interpretation, it has *dagesh lene*, e.g.

**BL Or. 2540**

*Dagesh forte Dagesh forte*

[niṯḥakkaˈmɔ] (BL Or 2540, fol. 4r, 4 || BHS נִיתְחָקָהּ Ex. 1.10 ‘let us deal wisely’).

[madˈdūa] (BL Or 2540, fol. 7r, 5 || BHS מָדַּעַ Exod. 2.18 ‘why?’).

**Dagesh lene**

[yirˈbbɛ] (BL Or 2540, fol. 4v, 1 || BHS יִרְבֶּּ֖ה Ex. 1.12 ‘He increases’).

[ˈɡɡɔd] (BL Or 2540, fol. 3v, 4 || BHS יַּגְּדָ Ex. 1.4 ‘Gad’).

[ˈddɔn] (BL Or 2540, fol. 3v, 3 || BHS יַּדְּנָ Ex. 1.4 ‘Dan’).

[miharˈtɛn] (BL Or 2540, fol. 7r, 5 || BHS מִהַרְׂתֶַּ֥ן Ex. 2.18 ‘you hurried’).

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A close reading of a passage in the Masoretic treatise *Hidāyat al-Qārī* reveals the same phenomenon:

באב פי מי ינ אלתרוק עלי תלאתה מנואל

vented אנה אנ פי אלתרוק מפアクセות עלי גורר כפמא רפמא זכרפי פי אלתרוק מי יני עלן

סנסא פי אלתקל ואלכמה אולס unge אלא אולנס אלמעuida אלא אלנס אלכבר הז

אלעלא

vented אנה אנ פי יא מי ספיי אלתרוק קר ני רפ מוקי והשעא יני תכ הכות התב הנשה תורי הנב תכ

יקד יני דעש ברקי וה תהל תואת יישמה תלעלעל בוקי נונגביי אולק תל��ת

Chapter concerning letters that occur in three grades

Know that just as there are among the letters those that when they are adjacent to another letter, this latter makes them light with *raphe*, likewise among the letters are those that occur in three grades with regard to heaviness and lightness. The first grade is lightening. The second is the normal *dageš*. The third is the major *dageš*. This includes the *taw*.

Know that the *taw*, unlike the other letters, may occur *rapheh*, as in תַָּ֣חַת הַנְׂחַשֶּׁ֤ת וֹיֵּ֨י הַשַּ֖ער ‘rooms of the gate’ (Ezek. 40:10); it may occur with *dages*, as in תֵֶַּ֤וֹרֵֵּ֤י זָהָּ֤ב ‘ornaments of gold’ (Cant. 1:11); and it may occur with major *dageš*. The latter includes three *taws*: ‘He made it an eternal heap of ruins’ (Josh. 8:28), וַיְׂשִימֶֶּ֤הָ תֵל־עוֹלָּ֥ם ‘and its houses and its treasuries’ (1 Chron. 28:11), וְִֽׂאֶּ֤ת־בִָּ֨תַָ֜יו וְׂגַנְׂזַכָָּ֧יו ‘and these three men’ (Dan. 3:23).36

In the passage in question the author states that the letter *taw* has three degrees of ‘heaviness’. These three degrees include (i) *taw* with *raphe*, i.e. fricative, (ii) normal *dages* and (iii) major *dageš*. The grades (ii) and (iii) do not refer to *dageš* *lene* and *dages* *forte* respectively, as we normally understand them. Rather ‘normal *dages*’ includes both what we would normally interpret as *dageš* *lene* and also *dages* *forte*. ‘Major *dages*’, i.e. grade (iii), is restricted to a few examples of *taw* where the *dages* is extra-long, e.g. in the word בִָּ֨תַָ֜יו ‘houses’ (with two accents azla *geresh*) (1 Chron. 28:11).

The extended *dages* *forte* reading arose by giving the *dages* sign its full value in all contexts. The primary motivation for this was most likely an attempt to make a maximally clear distinction between fricative and plosive forms of the

letters. Another effect of strengthening the pronunciation of the dagesh was to mark a clear separation between syllables. This enhanced accuracy of reading words with בגדכפ׳׳ת consonants was achieved without deviating from the standard Tiberian notation system.

I should like to argue that the distribution of the dagesh in manuscripts with extended Tiberian vocalization reflects a type of reading that arose by an analogical extension of the extended dagesh forte reading. The analogical process involved extending the gemination marking syllable onsets from בגדכפ׳׳ת consonants to all consonants in syllable onsets that could be geminated. Since gemination was a potential feature also of a range of other consonants, this distribution of gemination of the בגדכפ׳׳ת consonants in the extended dagesh forte reading was extended further to include these other consonants. This took place by a process of regularization, e.g.

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<tr>
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<td>niš.mor</td>
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Manuscripts with extended Tiberian vocalization were widely distributed in medieval Ashkenaz. Yequí’tel ha-Naqadan, who was writing in medieval Ashkenaz in the second half of the 13th century, was aware of the existence of such manuscripts. He and readers in his community, however, thought that the dagesh was a dagesh lene and so, understandably, the dagesh had no phonetic realization in consonants that did not belong to the בגדכפ׳׳ת group. This is expressed in the following passage from his ‘En ha-Qore 37:

Now you should understand that the letters with dagesh are heard in all words (marked with them). Their being pronounced with dagesh or rafe is known in the language and fixed in the mouth, in the place of articulation, whether it be dagesh forte or dagesh lene. But as for the letters וקצסנומ, the dagesh lene is not heard in them in most places … most people of our land do not know how to pronounce the dagesh lene that occurs in these letters."

Yequti’el then gives a number of examples of *dageš lene* in the letters בֹּדַכֶּפֶּת, both after guttural letters, e.g. בַּעְׂלָּ, and after non-guttural letters, e.g. מֹטֶל. Although the tradition of marking this *dageš* continued in medieval Ashkenaz, Yequti’el’s remarks indicate that the reading of the *dageš* as *dageš forte* had largely fallen into oblivion. He qualifies his remarks with the phrase ‘in most places ... most people of our land’, which may indicate that he was aware of some vestiges of the type of pronunciation that was originally reflected by the extended Tiberian vocalization. Indeed a statement by David Qimḥi, writing in southern France at roughly the same period as Yequti’el, could be interpreted as indicating that there were still memories of this original pronunciation. In his *Miklol* he states (ed. Lyk, 140b):

> כל שָאָוֹל שִָואל־הָָאִיש קריאת הלָּמָּה חזקה, ... לכָּנָפְלַ֥וּ פָנִֶּֽי קריאת הנוּנָּה קלה, ... likewise the other letters (are read) in this way, except for yoּדֶא, which is always light unless it has *dageš*.

‘Whenever mobile *šewa* is followed by one of the letters בֹּדַכֶּפֶּת (letters) is soft ... The same applies to the other letters with regard to their strength and lightness, for example in הֶּּ בַּעְׂלָּ, why’ the reading of the *lamed* is strong and in הֶּּ יַשֶּׁאָל why? the reading of the *lamed* is light because of the mobile *šewa* in it. In שָאָוֹל שִָואל־הָָאִיש ‘the man questioned us carefully’ (Gen. 43.7) the reading of the *šin* is strong; in יַשֶּׁאָל why? ‘and he shall ask for him’ (Num. 27.21) the reading of the *šin* is light. In יַשֶּׁאָל why? (why) has your contenance fallen?’ (Gen. 4.6) the reading of the *nun* is strong; in הַנָּפְלַ֥וּ וְׂל א־יָקַ֥וּם עִֽוֹד ‘they will fall and not rise again’ (Amos 8.14) the reading of the *nun* is light. Likewise the other letters (are read) in this way, except for *yod*, which is always light unless it has *dageš*.

In this passage Qimḥi refers to strong and weak variants of consonants. He states that this variation is found not only in the בֹּדַכֶּפֶּת consonants, but also in other consonants. The distribution of the variation in the other consonants is the same as is found with the בֹּדַכֶּפֶּת consonants, i.e. the weak variant occurs after a vowel. This appears, therefore, to be an allusion to the type of pronunciation that is reflected by extended Tiberian vocalization, although Qimḥi does not refer to the marking of the *dageš* sign on the strong variant of the consonants outside the בֹּדַכֶּפֶּת group. His remark at the end of the passage that *yod* does not have strong and weak variants in the same way as the other consonants ‘unless it has *dageš*’ can

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38 Yarqoni, ‘En Ha-Qoré by Yequtiel Ha-Kohen’, 107.
also be correlated with the type of pronunciation reflected by extended Tiberian vocalization. In manuscripts exhibiting this type of vocalization $\text{yod}$ often lacks $\text{dageš}$ in word-initial or post-consonant position and takes $\text{dageš}$ only where this occurs in the standard Tiberian vocalization.\textsuperscript{39} In this passage, therefore, we may have evidence that features of the extended Tiberian type of pronunciation survived in Ashkenaz and were applied to biblical manuscripts with standard Tiberian vocalization. It should be noted, however, that Qimhi makes a distinction between $\text{dageš lene}$ ($\text{דגש קל}$) and $\text{dageš forte}$ ($\text{דגש חזק}$) in the בגדכפ’ת consonants and does not identify the fortition of the other consonants in word-initial position with the gemination of $\text{dageš forte}$.

As alluded to by Yequti’el ha-Naqdan, the type of pronunciation that geminated consonants outside the בגדכפ’ת group after a vowelless consonant or word-initial position was rarely used in medieval Ashkenaz. Yequti’el, in fact, describes a reading tradition in which there was a general tendency to weaken $\text{dageš forte}$, especially when the letter had $\text{shewa}$ \textsuperscript{40}. There is evidence from transcriptions of Hebrew into Latin script in medieval France that letters with $\text{dageš forte}$, according to the standard Tiberian vocalization, were not pronounced geminated.\textsuperscript{41} The marking of $\text{dageš forte}$ is, moreover, frequently omitted in medieval Ashkenazi prayerbooks,\textsuperscript{42} and is completely lost in modern Ashkenazi reading traditions.\textsuperscript{43} This general weakening of gemination in Ashkenaz that had begun already in the Middle Ages would have eliminated the gemination that was distinctive of the extended Tiberian pronunciation tradition.

As has been proposed, the extended type of Tiberian pronunciation was a analogical development of the extended $\text{dageš forte}$ type of reading, in which $\text{dageš lene}$ in בגדכפ’ת consonants in the standard Tiberian vocalization system were pronounced as $\text{dageš forte}$. Within the extended Tiberian pronunciation, therefore, the $\text{dageš}$ of the בגדכפ’ת consonants was always pronounced as $\text{dageš forte}$. Apart from the possible vestiges of the extended Tiberian type of pronunciation in medieval Ashkenaz described above, there is no other evidence for the survival of either the extended Tiberian or extended $\text{dageš forte}$ type of readings outside of

\textsuperscript{39} Cf. the description of the distribution of $\text{dageš}$ in Codex Reuchlinianus by Morag, ‘The Vocalization of Codex Reuchlinianus’, 220.

\textsuperscript{40} Yarqoni, ‘En Ha-Qoré by Yequtiel Ha-Kohen’, 113.

\textsuperscript{41} Yehiel Gedalyahu Gumpertz, מיבטא’ סֶפַטֶּנוּ: Studies in Historical Phonetics of the Hebrew Language (Jerusalem, 1953), 5; Yarqoni, ‘En Ha-Qoré by Yequtiel Ha-Kohen’, 108–11.

\textsuperscript{42} Eldar, The Hebrew Language Tradition in Medieval Ashkenaz (ca.940-1350 C.E.), 115–22.

Palestine. The grammarian Judah Ḥayyūj, writing in Spain at the end of the 10th century, clearly refers to the distinction between *dagesh forte* and *dagesh lene* in the בגדכפ׳׳ת consonants. In his *Kitāb al-ʿAfʿāl ʿḌawāṭ Hurūf al-Līn* ‘Book of Verbs with Soft Letters’ he states as follows 44:

‘Know that ب׳ג׳ד׳כ׳פ׳ת are pronounced in Hebrew in two ways. The first type (of pronunciation) is thus: בֵית גִימָל דָל כֶפֶר פָא תָא. The second type is בֵּית גִימָל דָל כֶפֶר פָא תָא. The first type is called ‘heavy’ and the second ‘light’. I have called the first ‘heavy’ and the second ‘light’ because the first occurs in Hebrew words either heavy or light, examples of ‘heavy’ being יְשַבֵּר, יְשַׁבֵּר ... and this is what is called heavy in reality, examples of the ‘light’ (variant of the ‘heavy’ way of pronouncing) are בְּרֵאשִׁית בָרָא אלהים ... יִרְבֶּה ... and this is what is called light in reality. As for the second type, this only occurs ‘light’ in the Hebrew language. I have called the first type ‘heavy’ (because it is thus) in comparison with the second, not because it is ‘heavy’ in all circumstances.’

Here Ḥayyūj uses the term ‘light’ (ḥāfīf) to refer both to a fricative letter and also to a stop with *dagesh lene*.

The reading traditions of the Jewish communities in Arabic-speaking countries have preserved the gemination of *dagesh forte* according to the distribution of the familiar system of reading with *dagesh forte* and *dagesh lene*. There is no trace of an extended *dagesh forte* type of reading. Nor is there any trace of an extra-long gemination of taw. The plural form בָתִים is regularly read with *dagesh lene*, e.g. Yemen: bavoːtʰeːxäm (בְּבַי וָּעַֽטְ‪ָמ‬ ‘in your houses’ Isa. 3:14). 45 This applied even to cases where the word has a secondary accent.

The extended *dagesh forte* type of reading and its development in the extended Tiberian reading arose as orthoepic measures to ensure a maximally distinct and accurate reading. Various other orthoepic measures developed in the Tiberian

tradition and these also did not survive in later reading traditions. One example is the reading of the word מַה מַה vocalized with pataḥ and connected by maqṣeph to the following word, the first letter of which has dagesh, e.g. מַה־דִב מַה־דִב 'and what did he say' (Jer. 23.35). It is clear that the pataḥ in this particle originally developed due to its prosodic and syllabic bonding with the following word. It continued, however, to be written as an orthographically separate word. In order to ensure that the orthographic distinctness was expressed clearly in pronunciation the pataḥ in the word מַה was lengthened. This orthoepic measure is reflected by Karaite transcriptions of the Tiberian reading into Arabic script, in which the pataḥ is represented by an Arabic mater lectionis 'alif, e.g. م۟اّۖت صۖع۟ اق متיתس "why do you cry?" Exod 14:15). In a similar way, a word-final vowel before the dagesh in a deḥiq construction was not fully shortened to a short vowel in the Tiberian reading tradition, as is reflected by the Karaite transcriptions, e.g.

מַה־תִצְׂעַּ֖ק מַה־תִצְׂעַּ֖ק 'why do you cry?' Exod 14:15).

This also seems to have been an orthoepic measure of the Tiberian tradition. There is evidence from manuscripts of the Hebrew Bible with Babylonian vocalization that in the Babylonian reading tradition the vowel of מַה before dagesh and vowels before a dagesh in deḥiq structures were short. This is shown in several

For details see Khan ‘Learning to Read Biblical Hebrew in the Middle Ages'; ‘Orthoepy in the Tiberian Reading Tradition of the Hebrew Bible and Its Historical Roots in the Second Temple Period', Vetus Testamentum, 2017. In Exod. 4.2 the ketiv מַה has the qere מַה מַה, in which the pataḥ is also read as long according to the Karaite transcriptions, e.g. מַה מַה. The purpose of the qere masoretic note is to indicate that the ketiv מַה should be read as two separate words, which should be kept prosodically distinct.

manuscripts with the so-called compound Babylonian vocalization. In this system short vowels before dagesh are marked by a compound sign combining a vowel sign and shewa. Such signs are used for the vowels in question, demonstrating that they were pronounced short, e.g.

\[ \text{מֶה מָ֑תּ (BHS Exod 13,14 ‘what does this mean?’)} \]

\[ \text{בְּמִרְׂעֶּה–טֹּוֹב (L Ezek 34,14 ‘in good pasture’)} \]

The grammarian Hayyuj, writing in 10th century Spain, describes the shortening of the final vowel of the first word in dehiq structures and of the patah of ה before dagesh. He states in his Kitāb al-ʿAfāl Dawāṭ Ḥūrūf al-Līn that ‘these are all read with taṣdīd (i.e. dagesh forte) on account of the assimilation of the long vowels’. In modern reading traditions the vowel is, likewise, pronounced short before the geminate consonants, e.g. Baghdad: waʾeqbeʾre:haššam (וָאֶּקְׂבְׂרֶֶ֤ה שָּם ‘and I buried her there’ Gen. 48:7), Aleppo: nelxasšam (נֵּלכָה שָם ‘let us go there’ 1 Sam. 9:6).

In conclusion, the distribution of dagesh in the extended Tiberian vocalization system reflects the fortition of consonants by gemination as an orthoepic measure. This was an analogical development of the extended dagesh forte reading. In this latter type of reading the dagesh lena of the בָּרֵכָת consonants came to be pronounced as dagesh forte, which was likewise an orthoepic measure. Such orthoepic strategies were unknown or rapidly fell into oblivion outside the medieval Middle East and in later reading traditions.

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49 [هذه كلها مفردة بالتشديد لاندغام السواكن](The Weak and Geminative Verbs in Hebrew, ed. Jastrow, 11).