

The Tiberian Pronunciation Tradition of Biblical Hebrew

Volume I

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THE TIBERIAN
PRONUNCIATION TRADITION
OF BIBLICAL HEBREW

VOLUME I

The Tiberian Pronunciation Tradition of Biblical Hebrew

*Including a Critical Edition and English Translation of the Sections on
Consonants and Vowels in the Masoretic Treatise
Hidāyat al-Qāri' 'Guide for the Reader'*

Volume I

Geoffrey Khan





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Volume I

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PREFACE

The term ‘Biblical Hebrew’ is generally used to refer to the form of the language that appears in the printed editions of the Hebrew Bible and it is this form that it is presented to students in grammatical textbooks and reference grammars. The form of Biblical Hebrew that is presented in printed editions, with vocalization and accent signs, has its origin in medieval manuscripts of the Bible. The vocalization and accent signs are notation systems that were created in Tiberias in the early Islamic period by scholars known as the Tiberian Masoretes. The text of the Bible that appears in the medieval Tiberian manuscripts and has been reproduced in modern printed editions is known as the Tiberian Masoretic Text or simply the Masoretic Text.

The opening sections of modern textbooks and grammars describe the pronunciation of the consonants and the vocalization signs in a matter-of-fact way. The grammatical textbooks and reference grammars in use today are heirs to centuries of tradition of grammatical works on Biblical Hebrew in Europe, which can be traced back to the Middle Ages. The paradox is that this European tradition of Biblical Hebrew grammar, even in its earliest stages in eleventh-century Spain, did not have direct access to the way the Tiberian Masoretes were pronouncing Biblical Hebrew. The descriptions of the pronunciation that we find in textbooks and grammars, therefore, do not correspond to the pronunciation of the Tiberian Masoretes, neither their pronunciation of the consonants nor their pronunciation of the

vowels, which the vocalization sign system originally represented. Rather, they are descriptions of other traditions of pronouncing Hebrew, which originate in traditions existing in Jewish communities, academic traditions of Christian Hebraists, or a combination of the two.

In the last few decades, research of a variety of manuscript sources from the medieval Middle East, some of them only recently discovered, has made it possible to reconstruct with considerable accuracy the pronunciation of the Tiberian Masoretes, which has come to be known as the ‘Tiberian pronunciation tradition’ or the ‘Tiberian reading tradition’. It has emerged from this research that the pronunciation of the Tiberian Masoretes differed in numerous ways from the pronunciation of Biblical Hebrew that is described in modern textbooks and reference grammars.

In this book, my intention is to present the current state of knowledge of the Tiberian pronunciation tradition of Biblical Hebrew based on the extant medieval sources. It is hoped that this will help to break the mould of current grammatical descriptions of Biblical Hebrew and form a bridge between modern traditions of grammar and the school of the Masoretes of Tiberias. The main focus of the book is on the synchronic state of the Tiberian pronunciation when it was a living tradition in the early Islamic period. Some comparisons with other traditions of Hebrew from different periods are, nevertheless, made where this is thought to be appropriate.

The book is divided into two volumes. The introductory section of the first volume discusses the background of the Tiberian pronunciation tradition, with particular attention to its

historical depth, its prestigious status and its relationship with other medieval reading traditions. It also describes the various extant medieval sources that are used in the book to reconstruct the pronunciation. Chapter 1 describes the pronunciation of the consonants. Chapter 2 presents a description of the pronunciation of the vowels and *shewa*, as well as an analysis of the syllabification and metrical structure of words. Chapter 3 describes the function of the diacritical signs known as *dagesh* and *rafe*. Chapter 4 examines various hybrid types of pronunciation, which arose due to imperfect learning of the Tiberian pronunciation tradition in the Middle Ages. Chapter 5 presents a summary of the reconstructed pronunciation and sample transcriptions of some Biblical passages. It is recommended that readers who would like a quick overview of the Tiberian pronunciation should look at chapter 5 first. It contains links to oral performances of the sample transcriptions by Alex Foreman.

The second volume presents a critical edition and English translation of the sections on consonants and vowels in the Judeo-Arabic Masoretic treatise *Hidāyat al-Qāri'* ('Guide for the Reader') by the Karaite grammarian 'Abū al-Faraj Hārūn (eleventh century C.E.). *Hidāyat al-Qāri'* is one of the key medieval sources for our knowledge of the Tiberian pronunciation tradition and constant reference is made to it in the various chapters of this book. Since no complete edition and English translation of the sections on the consonants and vowels so far exists, it was decided to prepare such an edition and translation as a complement to the descriptive and analytical chapters of volume one.

This book is a spinoff from a larger project on Biblical Hebrew to revise Gesenius' *Hebrew Grammar*. I am working on this project in collaboration with various other scholars, including

Aaron Hornkohl, Shai Heijmans and Ben Kantor, who are co-authors. I cite some of their contributions to the Gesenius grammar project in this book with due acknowledgement. I am grateful to Aaron, Shai and Ben for their help with the preparation of the book in various ways. Shai created the attractive Arabic font with Hebrew vowels and accents, which I use for the Karaite transcriptions of Hebrew. Ben skilfully laid out my edition of *Hidāyat al-Qāri'* in the Classical Text Editor programme, which aligned text and translation, and carefully proofread the text and translation. Many thanks also to my graduate student Estara Arrant, who drew my attention to a variety of examples of Non-Standard Tiberian vocalization in Genizah manuscripts from the database she has created for her Ph.D. research project. I am very grateful to my graduate student Joseph Habib for his help with the proofreading of the book. I also greatly appreciate the comments and corrections sent to me by Aaron Rubin and Ben Outhwaite, who read an earlier version of the book. Finally, I am very grateful to Alex Foreman, who made an impressive oral performance of the sample transcriptions.

Some aspects of the work that forms the basis of this book were funded by research grants. A British Academy small research grant supported my investigation of manuscripts of *Hidāyat al-Qāri'*. A grant from the Leverhulme Trust (2013–2016) supported the posts of Aaron Hornkohl and Shai Heijmans when they were gathering material for the revision of Gesenius' *Hebrew Grammar*. I acknowledge here with gratitude the support of these institutions.

I.0. INTRODUCTION

I.0.1. PRONUNCIATION TRADITIONS OF BIBLICAL HEBREW

Hebrew is generally thought to have ceased to be a spoken vernacular around the beginning of the third century C.E., after the destruction of the final remaining Hebrew-speaking settlements in Judaea by the Romans following the Bar-Kochba revolt. This coincides with the end of the Tannaitic period in Rabbinic tradition.¹ The surviving Hebrew texts that are datable to before this date would, therefore, have been written when Hebrew was still spoken. This includes the books of the Hebrew Bible, Qumran literature, Tannaitic Rabbinic literature, documents and epigraphy. There are references to the use of Hebrew as a vernacular in the second century C.E., for example the anecdote of the maid-servant of Rabbi Yehudah ha-Nasi, who is said to have known the meanings of some Hebrew words with which the scholars of the time were not familiar (Babylonian Talmud, *Megilla* 18a, Palestinian Talmud, *Megilla* 2.2, 73a). The Bar Kochba documents in the first half of the second century C.E. contain a number of features that appear to reflect the spoken language (Mor 2013a; 2015).

Although Hebrew is thought to have ceased to be a vernacular language by the third century C.E., it remained alive in later

¹ Kutscher (1982, 115–16), Saenz-Badillo (1996, 171–72), Schniedewind (2013, 191), Y. Breuer (2013).

periods in oral as well as written form. The oral recitation of the Hebrew Bible continued in a variety of traditions down to modern times. The Hebrew Rabbinic material of not only the Tannaitic period but also of the Amoraic period (220-500 C.E.) was composed orally. Furthermore, after Rabbinic literature was committed to writing, the oral dimension continued in reading traditions that have survived down to the present. There is a reference also to the use of Hebrew for ‘spoken discourse’ (*לְדִיבָר*) in a saying attributed to Rabbi Yonatan of Bet-Guvrin (Palestine, third century C.E.):

Rabbi Yonatan from Bet-Guvrin said there are four languages that are pleasant for use: Greek for singing, Latin for combat, Syriac for lamentation, and Hebrew for spoken discourse.²

Even as late as the tenth century one finds in a Masoretic treatise attributed to ‘Eli ben Yehudah ha-Nazir (ed. Allony 1973) a description of how the author undertook fieldwork in the streets of Tiberias to verify his analysis of the *resh* in the Tiberian biblical reading, on the grounds that the Hebrew *resh* could still be heard in the local speech of the (Jewish) inhabitants of Tiberias. These references are unlikely to refer to vernacular speech. Hebrew continued to be used as a form of learned discourse among scholars in the Rabbinic period after it had ceased to be a vernacular (Smelik 2013, 109–16). It was, moreover, promoted as a language of everyday speech by the

² אמר ר' יונתן דבית-גוברין ארבעה לשונות נאים שישתמש בהן העולם ואילו הן לעז לומר רומי לקרוב سورסי לאיליא עברית לדיבור.

Karaite scholar Benjamin al-Nahāwendi (mid-ninth century C.E.) on ideological grounds (al-Qirqisānī 1939, VI 25.3; Khan 1992b, 157). Hebrew words and phrases, as well as Biblical Hebrew quotations, continued in the so-called ‘Hebrew component’ of the vernacular languages spoken by the Jews down to modern times, which, it seems, is what ‘Eli ben Yehudah ha-Nazir was listening to on the streets of medieval Tiberias. A particularly large Hebrew component existed in Jewish secret languages, used mainly by merchants.³

When Hebrew was a spoken vernacular language before the third century C.E., it existed in a diversity of dialects, which differed on various linguistic levels (Rendsburg 2013a). This dialectal diversity existed synchronically at particular periods and there was also diachronic change in the various spoken forms of the language. Both of the synchronic and the diachronic differences in the spoken language were disguised to a large extent by the written form of the language, which was considerably standardized in its orthography and linguistic form (Rendsburg 1990; 2013b). Several differences are, nevertheless, identifiable from the surviving written evidence, some of which relate to pronunciation. We know from epigraphic evidence from the biblical period that diphthongs tended to be contracted in the northern (Israelian) dialects whereas they tended to be preserved uncontracted in the southern (Judahite) form of Hebrew, which is the basis of the standardized Biblical Hebrew language. In the Samaria ostraca, for example, one finds the orthography $\aleph\tau$ ‘wine’,

³ See the entries on the Hebrew component of secret languages in the *Encyclopedia of Hebrew Language and Linguistics* (vol. 3, 511-520).

reflecting the pronunciation *yēn*, whereas the Arad ostraca from the south have the orthography *רַנְ* corresponding to Masoretic Hebrew form *רַנְ* (Bruck 2013). The shibboleth incident described in Jud. 12.1-6 is clear evidence of differences in pronunciation between the dialects of Transjordan and Cisjordan (Rendsburg 2013c). In the Second Temple Period, there were differences in dialects of Hebrew regarding the pronunciation of the guttural consonants (laryngeals and pharyngeals). In many of the Dead Sea Scrolls from Qumran datable to this period, including those containing biblical texts, and Judaean inscriptions there is evidence of the weakening of the gutturals. This is shown by the fact that they are often either omitted or interchanged in the orthography. Such weakening was presumably due to Greek influence, which was spoken in Palestine during this period, especially in the educated or urban classes, since Greek did not contain pharyngeals in its sound inventory. The Bar Kochba documents, on the other hand, exhibit remarkably little weakening of the gutturals, despite the fact that they otherwise deviate quite radically from the standard language and orthography and appear to be close reflections of the spoken language. These documents are likely, therefore, to reflect a spoken dialect that had preserved the gutturals to a large extent.⁴ The biblical scrolls from Qumran which exhibit weakening of the gutturals, such as the Isaiah Scroll 1QIsa^a, therefore, reflect a particular dialectal variety of pronunciation, which was not general throughout Palestine.

⁴ See Mor (2013b; 2013a), Fassberg (2013), Morgenstern (2013, 505–6).

Some of the biblical scrolls from Qumran have an orthography close to that of the Tiberian Masoretic Text without omission or interchange of gutturals. This may be due to conservatism of orthography, but it is necessary to assume that some traditions of Biblical Hebrew at this period did preserve the gutturals and were the source of later traditions that preserved them. In the Second Temple Period there is further evidence of variation in the pronunciation of the gutturals in the Greek transcriptions of Hebrew words in the Septuagint (late first millennium B.C.E.), which reflect the preservation of the Proto-Semitic velar fricatives **k* and **g*, e.g. Αχαζ ‘Ahaz’ (cf. Arabic *’akhadha* ‘he took’ = ﺃخذا), Γαζα ‘Gaza’ (cf. Arabic *Ghazza*, = ﻍـزة). The Hebrew orthography represents the merger of the original velar fricatives with the pharyngeal fricatives *ن* and *ي*. This orthography, which was derived from Phoenician, may have concealed a distinction that was preserved in some Hebrew dialects, but it is clear that there must have been a merger in some dialects by the Second Temple Period. This is due to the fact that some sources from Qumran that are roughly contemporary with the Septuagint exhibit weakening of the pharyngeals irrespective of their historical origin.⁵

There were a number of differences in morphology across the various dialects of Hebrew when it was a spoken language. Of particular significance for the later reading traditions of Biblical Hebrew are the differences in pronouns and pronominal suffixes. In the Second Temple Period there is evidence from the

⁵ For a discussion of the chronology of merger of velar fricatives with pharyngeals see Steiner (2005a).

Dead Sea Scrolls for variation between vocalic and consonantal endings of pronominal forms, e.g. in the second person forms:

2ms suffixes: תְּ/בָה-, תְּ/כָה-

2mpl forms: כָּמָה/כָּמָת-, תָּמָה/תָּמָת-, אַתָּמָה/אַתָּמָת-

Another case of variation is found in the 3ms pronominal suffix on plural nouns, which has the forms יִ- or וִ- (Qimron 1986, 58–59; 2018, 269–78; Reymond 2014, 153–64).

I.0.2. THE BIBLE IN THE SECOND TEMPLE PERIOD

The text of the Hebrew Bible that is reflected by the Qumran manuscripts and other sources from the Second Temple Period was pluriform and dynamically growing (Ulrich 2015, 18). There were variant literary editions of many of the biblical books, these being particularly numerous in the Pentateuch (Tov 2016). A sizeable proportion of the Qumran biblical manuscripts, however, exhibit a text that is close to that of the medieval Masoretic Text. These have been termed by Emanuel Tov ‘proto-Masoretic’ or, in his more recent work (Tov 2012, 107–9) as ‘Masoretic-like’ texts. These show us that great efforts were made in some circles, apparently the Temple authorities, to preserve a stable text. In Talmudic literature, there are reports of three scrolls of the Pentateuch that were found in the Temple court. These differed from one another in small details. They were carefully collated and differences were corrected towards the majority reading.⁶ These activities were motivated, it seems, by a desire to preserve

⁶ The sources are discussed in detail by Talmon (1962). See also Ofer (2019, 88).

and level variants in one particular type of text, but not necessarily to standardize and eliminate rival texts (Tov 2014; van der Kooij 2014). This is clearly shown by the fact that such Masoretic-like texts exist alongside other types of biblical texts in the Qumran corpus that exhibit a variety of substantial differences from the Masoretic Text. Furthermore, the Masoretic-like texts from Qumran themselves exhibit some degree of diversity, since minor textual differences are found from one manuscript to another. Some hold the view that the Masoretic-like texts did not represent a central authoritative type of a text but rather one of several forms of text that were of equal status. Doubts are cast on the existence of sufficient cohesion in Judaism in the late Second Temple Period or of a sufficiently acknowledged leadership to make it conceivable that a majority of Jews recognized a single authoritative text (Ulrich 2015, 19). Lim (2013, 126) draws attention to the fact that different types of text are sometimes cited side-by-side, which he presents as evidence that there was no preference for one particular type of text. A further issue is the selection of the text of the Masoretic-like manuscripts. It is now generally agreed that this text was selected largely by chance rather than due to the archaic nature of the text or its perceived accuracy.

Despite the pluriformity of the biblical text that is reflected by the Qumran manuscripts, after the destruction of the Temple in 70 C.E. the Masoretic type of text was the only text tradition that continued to be transmitted in Jewish communities. Fragments of biblical scrolls discovered in sites outside Qumran datable to the first two centuries C.E. contain a consonantal text

that is identical with that of the medieval Masoretic manuscripts, even in the smallest details of orthography and cancellation dots above letters. These include fragments found in Masada (first century C.E.) and the somewhat later sites of Wadi Sdeir (*Nahal David*), *Nahal Hever*, *Wādī Murabba‘at* and *Nahal Še’elim* (early second century C.E.). The same applies to the recently published charred fragments of a scroll of Leviticus from En Gedi, which have been dated to roughly the same period (M. Segal et al. 2016). According to Tov (2008, 150), these texts from communities outside Qumran constitute an ‘inner circle’ of proto-Masoretic texts that derive directly from Temple circles and were copied from the master copy in the Temple court. The proto-Masoretic texts of Qumran, on the other hand, formed a second transmission circle copied from the inner circle, and so exhibits small differences.

The exclusive transmission of the proto-Masoretic tradition in Judaism is nowadays generally thought to be the consequence of historical events. Power and influence were gradually transferred from the priestly Sadducees to the Pharisees (Schiffman 1991, 112). The Pharisees, who as part of this process espoused the proto-Masoretic text from the priestly authorities, constituted the only organized Jewish group that survived the destruction of the Temple (Albrekton 1978; Tov 2012).

Several scholars have drawn attention to the interaction and interdependence of oral and written tradition in the formation and transmission of the Hebrew Bible through the first millennium B.C.E. down to the destruction of the Second Temple, for example Nyberg (1934), Niditch (1996), Person (1998; 2010)

and Carr (2005). Carr, in particular, stresses the fact that even after the textualization of Scripture in written form in the first millennium B.C.E., the written text remained combined with a tradition of oral reading. The oral tradition of reading was memorized and the texts were learnt as part of an educational process, which has parallels in other ancient Near Eastern cultures. Such a tradition of transmission relied not only on written texts but also on teachers to pass on the oral traditions to pupils. Such was the importance and self-sufficiency of the oral tradition of the text, claims Carr, that at times of crisis, such as the Babylonian exile, it may have been used to regenerate lost written forms of the text. Raymond Person argues that the oral mind-set of ancient Hebrew scribes influenced the way they copied texts, in that they did not feel obliged to replicate the texts word by word, but preserved the texts' meaning as a dynamic tradition like performers of oral epics, with numerous small adaptations. This resulted in a pluriformity of texts, which were nevertheless understood as faithful representations of the tradition.

I.0.3. THE BIBLE IN THE MIDDLE AGES

After the destruction of the Second Temple, the Hebrew Bible continued to be transmitted in a process similar to that attributed by Carr to the earlier period, i.e. there was an intertwining of written text and oral reading tradition. The written text was copied by scribes and the memory of the oral reading tradition was passed on from generation to generation by teachers. The fact that the Hebrew Bible lost its pluriformity in its surviving written consonantal text after the Second Temple Period does not

mean it lost pluriformity also in its oral transmission. The aforementioned fragments of biblical scrolls from the period after the destruction of the Temple must have been recited with an oral reading tradition. Just as the consonantal text (*ketiv*) of the medieval Masoretic manuscripts corresponded to the written consonantal text of these early scrolls, it is likely that the medieval oral reading of the Middle Ages, which is represented by the Masoretic vocalization signs, also had a close correspondence to what was being recited orally at the beginning of the first millennium C.E. There is, indeed, evidence that the medieval reading tradition had its roots in the Second Temple Period (§I.0.8.).

The reading traditions of Biblical Hebrew that were transmitted after Hebrew ceased to be a spoken vernacular language exhibit diversity in phonology and morphology, some of which is likely to have had its roots in the dialectal diversity of spoken Hebrew at earlier periods.

We can distinguish broadly three stages of attestation of the later reading traditions:

(i) The pre-Masoretic Greek and Latin transcriptions datable to the first half of the first millennium C.E. The most important sources from this period are the Greek transcriptions found in the second column of the Hexapla of Origen (c. 185–254 C.E.) and the Latin transcriptions in the Vulgate and writings of Jerome (346–420 C.E.). In addition to these, transcriptions are sporadically found in late Greek translations, such as Aquila, Symmachus and Theodotion, and in the writings of the Church fathers.

- (ii) The medieval traditions reflected by vocalized manuscripts and other sources. In addition to the Tiberian vocalization system, medieval manuscripts are extant that contain other vocalization sign systems, which reflect different reading traditions.
- (iii) The reading traditions that have survived in Jewish communities in modern times.

The reading traditions of the Bible in Palestine reflected by the Greek transcriptions of Origen and the Latin works of Jerome exhibit a number of features that can be correlated with some of the dialectal features mentioned in §I.0.1. They appear to have preserved the gutturals, although they are not directly represented by the Greek and Latin script, and so have their roots in dialectal pronunciations in which these consonants were not weakened. The 2ms pronominal suffixes are generally transcribed without a following vowel and so correspond to the variants ending in consonants reflected by the orthographies **ת**- and **ת-** in Qumran sources, e.g., *σεδκαχ* (Tiberian: קְדַצָּה) ‘your righteousness’ (Origen, Psa. 35.28), *φαρασθ* (Tiberian: פְּרַשְׁתָּה) ‘you have breached’ (Origen, Psa. 89.41); *phalach* vs. **פְּלַחַת**, ‘your work’ (Jerome, Hab. 3.2), *calloth* (Tiberian: קְלִוָּתָה) ‘you are vile’ (Jerome, Nah. 1.14).⁷

The reading traditions of the Hebrew Bible that are reflected by the medieval systems of vocalization signs were transmitted orally for many generations during the first millennium C.E. Their commitment to written form by means of

⁷ See Sperber (1937), Brønno (1943; 1970), Sutcliffe (1948), Janssens (1982), Yuditsky (2013; 2017), Kantor (2017).

vocalization sign systems was a textualization of oral traditions. This was no doubt stimulated by the general increasing shift from oral to written transmission of knowledge in the early Islamic period.⁸ This is a phenomenon that affected the whole of society in the Middle East at this period. It is likely to have been brought about, in part at least, by the archival documentary culture of the Abbasid bureaucracy, which developed in the eighth century C.E., and the spread in the production of paper at that period.⁹

The systems of vocalization signs that were developed in the Middle Ages reflect three major traditions of pronunciation, which are normally referred to as the Tiberian, Babylonian and Palestinian traditions. The Palestinian pronunciation is reflected also by some manuscripts vocalized with Tiberian vowel signs. This latter type of vocalization will be referred to as Non-Standard Tiberian vocalization (§I.0.13.6.). Although the sign systems were a creation of the Middle Ages, the pronunciation traditions that they reflect had their roots in an earlier period and had been transmitted orally for many generations. There is some

⁸ For a detailed discussion see Schoeler (2006) and Bloom (2010).

⁹ For the documentary culture of the Abbasid administration see Sijpesteijn (2007), van Berkel (2014), Khan (2007, 13–65) and for the spread of paper at this period see Bloom (2001). An analogy can be identified in the increase of written culture in the kingdom of the Judean king Hezekiah in the eighth century B.C.E. According to Schniedewind (2004; 2013) this was stimulated by the increase in administrative bureaucracy and urbanization. The role of bureaucracy and documentary culture appears to have been a catalyst to written culture also in medieval Europe; cf. Clanchy (2013).

evidence that they originated in the Second Temple Period (§I.0.8.). They share more features among themselves than they do with the Samaritan pronunciation tradition, which was transmitted orally by the Samaritan community through the Middle Ages down to modern times. This suggests that they were more closely related, due to a common origin and/or due to convergence through communal contact. They nevertheless diverged from one another in a number of ways in phonology and morphology. The distinctness of the Samaritan tradition of reading reflects the fact that it split from the Jewish traditions with the separation of the Samaritan community from Judaism at an early period.

The various Jewish reading traditions had distinctive vowel systems. The Tiberian pronunciation tradition distinguished the vowel qualities [a] (*pataḥ*), [ɔ] (*qames*), [e] (*šere*) and [ɛ] (*segol*). The Babylonian vocalization system lacked a sign for *segol* and generally used a *pataḥ* sign where Tiberian had *segol*, suggesting that Babylonian pronunciation did not distinguish between the qualities [a] and [ɛ], but only had the quality [a].¹⁰ The Palestinian pronunciation tradition did not distinguish between *pataḥ* and *qames*, on the one hand, and between *šere* and *segol*, on the

¹⁰ The Babylonian tradition has been exhaustively described by Yeivin (1985), which is the most authoritative scholarly source. Important earlier studies of manuscripts with Babylonian vocalization were made by Kahle (1902; 1913; 1928). For an overview of the distinctive features of Babylonian vocalization and the reading traditions it reflects see Khan (2013f) and Heijmans (2016).

other, but rather had only one ‘a’ vowel and one ‘e’ vowel.¹¹ There was, however, internal diversity within these traditions of pronunciation. This applied in particular to the Babylonian and the Palestinian traditions, which exhibit a considerable amount of variation both in the sign systems and the pronunciation these systems reflect in the medieval manuscripts. The Tiberian vocalization system and the pronunciation it reflects are more uniform and standardized than the other traditions, but, nevertheless, there is some internal diversity (§I.0.10).

I.0.4. THE TIBERIAN MASORETIC TRADITION

The textualization of the orally transmitted Tiberian reading tradition was carried out by a circle of scholars in Tiberias known as Masoretes. The Masoretes (known in Hebrew as בָּשְׂרַת מִסְרָה) were scholars who devoted themselves to preserving the traditions of writing and reading the Bible. Their name derives from the Hebrew term *masora* or *masoret*, the meaning of which is generally thought to be ‘transmission of traditions’.¹² The

¹¹ The most important scholarly studies of the Palestinian vocalization include Kahle (1930), Dietrich (1968), Revell (1970a; 1970b; 1977), Chiesa (1978) and Yahalom (1997). For overviews of the system see Heijmans (2013b) and Yahalom (2016).

¹² There is no complete consensus concerning the original meaning or etymology of the term. It seems to be connected with the Rabbinic Hebrew verb סַר ‘to hand over’, though this may be a denominal form. The noun מִסְרָה occurs in Ezek. 20.37, which is generally understood today as ‘bond’ (< סַר). One of its ancient interpretations, however, was ‘number’ (cf. Septuagint ἀριθμῷ). As we shall see, counting letters

Tiberian Masoretes were active over a period of several centuries in the second half of the first millennium C.E. The medieval sources refer to several generations of Masoretes, some of them belonging to the same family. The most famous of these families is that of Aharon ben Asher (tenth century), whose forebears were engaged in Masoretic activities over five generations.¹³ The Masoretes continued the work of the *soferim* ('scribes') of the Talmudic and Second Temple periods, who were also occupied with the correct transmission of the biblical text.¹⁴

and words to ensure the correct preservation of the text was one of the activities of the Masoretes. The word occurs also in Mishnah Avot 3.14 in a statement attributed to Rabbi Aqiva (c. 50–135 C.E.) מִסְרָת סִגְלָה לְתֹורָה 'The *masoret* is a fence for the Torah', where it may have been originally used with the same sense (i.e. 'counting' of letters/words). Ben-Hayyim (1957b) has suggested that the verb מסר in Hebrew actually had the meaning of 'to count', as did its cognate in Samaritan Aramaic. The form מִסְרָה is a variant feminine pattern of the noun. The form מִסְרָת or מסורה, which is reflected in the English spelling 'Massorah', has no textual basis but is a modern reconstruction on the analogy of the pattern found in nouns such as כֶּפֶרְתָּה 'mercy seat' and בָּצָרָת 'dearth'.

¹³ Asher 'the elder', the great-great-grandfather of Aharon, probably lived in the second half of the eighth century C.E.; cf. Kahle (1959, 75–82; 1927, vol. 1, 39).

¹⁴ According to the Babylonian Talmud (*Qiddushin* 30a) the *soferim* acquired their name from the fact that they counted (Hebrew סִפְרָה) all the letters of the Pentateuch. As we have seen above the term מִסְרָת was probably originally understood in the sense of 'counting'. This connection with the Talmudic interpretation of the term *soferim* may be more than coincidental, in that רַתָּה may have been intended originally

The Tiberian Masoretes developed what can be termed the Tiberian Masoretic tradition. This was a body of tradition that gradually took shape over two or three centuries and continued to grow until it was finally fixed, and the activities of the Masoretes ceased, at the beginning of the second millennium. During the same period, circles of Masoretes are known to have existed also in Iraq. It is the tradition of the Tiberian Masoretes, however, that had become virtually the exclusive Masoretic tradition in Judaism by the late Middle Ages and has been followed by all printed editions of the Hebrew Bible.

The Tiberian Masoretic tradition is recorded in numerous medieval manuscripts. The majority of these were written after 1100 C.E. and are copies of older manuscripts that were made in various Jewish communities. The early printed editions are based on these late medieval manuscripts. The most authoritative of these early editions was the so-called second Rabbinic Bible (i.e. the Bible text combined with commentaries and translations, known as *Miqra'ot Gedolot*) edited by Jacob ben Ḥayyim ben Adoniyyahu and printed at the press of Daniel Bomberg in Venice between 1524 and 1525. These early Rabbinic Bibles appear to have been based on more than one manuscript (Penkower 1983). This came to be regarded as a *textus receptus* and was used as the basis for many subsequent editions of the Hebrew Bible.

to refer to the activity of the *soferim*. In the Middle Ages the term *sofer* acquired the narrower sense of ‘copyist’. According to a medieval list of Masoretes published by Mann (1935, 2:44) the chain of Masoretes began with Ezra the scribe.

A small number of surviving manuscripts are first-hand records of the Tiberian Masoretic tradition. These were written in the Middle East before 1100 C.E., when the Masoretes were still active in the tenth century or in the period immediately after the cessation of their activities in the eleventh century. They are, therefore, the most reliable witnesses of the Tiberian Masoretic tradition. They all come from the end, or near the end, of the Masoretic period, when the Masoretic tradition had become fixed in most of its details. After 1100 C.E. the fixed tradition was transmitted by generations of scribes. Some of the modern editions of the Bible are based on these early manuscripts, e.g. the *Biblia Hebraica* from the third edition (1929–1937) onwards (the latest edition of which is the *Biblia Hebraica Quinta*, 2004–), *The Hebrew University Bible* (1975–), the editions by Aron Dotan (1973; revised 2001) and Mordechai Breuer (1977–1982) and the modern edition of the Rabbinic Bible by Menachem Cohen (known as *Ha-Keter*, Ramat-Gan, 1992–).

The Tiberian Masoretic tradition can be divided into the following components:

1. The consonantal text of the Hebrew Bible.
2. The layout of the text and codicological form of the manuscripts.
3. The indications of divisions of paragraphs (known in Hebrew as *pisqa'ot* or *parashiyot*).
4. The accent signs, which indicated the musical cantillation of the text and also the position of the main stress in a word.

5. The vocalization, which indicated the pronunciation of the vowels and some details of the pronunciation of the consonants in the reading of the text.
6. Notes on the text, written in the margins of the manuscript.
7. Masoretic treatises. Some manuscripts have appendices at the end of the biblical text containing various treatises on aspects of the teachings of the Masoretes.
8. Orally transmitted reading tradition.

The first seven of these components are written, whereas the eighth existed only orally. The orally transmitted Tiberian reading tradition was passed on from one generation to the next. The reading tradition is only partially represented in graphic form by the vocalization and accent signs. These written components were created during the Masoretic period in the last third of the first millennium C.E. The most famous Masorete, Aharon ben Asher, who lived in the tenth century, represented the last generation. At the close of the Masoretic period at the beginning of the second millennium, the written components of the Tiberian Masoretic tradition had become fixed and were transmitted in this fixed form by later scribes. By contrast, the oral component, i.e. the Tiberian reading tradition, was soon forgotten and appears not to have been transmitted much beyond the twelfth century. As a result, the Tiberian vocalization signs came to be read according to the various local traditions of Hebrew pronunciation, most of them influenced by the vernacular languages of the communities concerned. The vocalization and accents were no longer direct representations of the way in which

the biblical text was recited and they became fossilized written components of the text. Since the Tiberian oral tradition of reading did not survive down to modern times, the letters, vocalization and accent signs are symbols that require interpretation. This interpretation is little more than speculation unless we examine extant sources that were written by medieval scholars and scribes who had direct access to the Tiberian pronunciation when it was still a living oral tradition. The description of the Tiberian pronunciation that is presented in this book is based on such medieval sources. Our main concern will be with the pronunciation of the vowels and consonants.

The Tiberian Masoretic manuscripts are codices, i.e. books consisting of collections of double-leaves that were stitched together. A Bible codex was referred to in medieval Hebrew sources as a מַחְזֹר *mahzor*, as opposed to a scroll, which was referred to as a ספר *sefer*. The term *mahzor* later came to designate specifically a codex containing a prayer-book for festivals. Another term that was used for a Bible codex in the Middle Ages was מִשְׁחָף *mishaf*, which is an Arabic loanword (< Arabic *mushaf*).¹⁵ The Hebrew Bible began to be produced in codex form during the Islamic period. The earliest surviving codices with explicitly dated colophons were written in the tenth century C.E. All of these originate from the Jewish communities in the Middle East. There is indirect evidence from some Rabbinic sources that

¹⁵ The Arabic word *mushaf* is itself a loanword from Ethiopic *mashaf*, which means ‘book’, or specifically ‘Scripture’, see Leslau (1987, s.v. *sahafa*).

the codex had been adopted for Hebrew Bibles already in the eighth century C.E.¹⁶

Previously, the Hebrew Bible was always written in a scroll. After the introduction of the codex, scrolls continued to be used for writing the Hebrew Bible. Each type of manuscript, however, had a different function. The scrolls were used for public liturgical reading in the synagogues, whereas the codices were used for study purposes and non-liturgical reading. The scroll was the ancient form of manuscript that was hallowed by liturgical tradition and it was regarded as unacceptable by the Masoretes to change the custom of writing the scroll by adding the various written components of the Masoretic tradition that they developed, such as vocalization, accents and marginal notes. The codex had no such tradition behind it in Judaism and so the Masoretes felt free to introduce into this type of manuscripts the newly developed written Masoretic components.¹⁷ The desire to commit to writing in the Middle Ages many components of the Masoretic tradition that had been previously transmitted orally was, no doubt, one of the main motivations for the adoption of the codex at this period. It had been available as a format of book production since the Roman period. It started to be used for the writing of Christian Bibles as early as the second century C.E. The earliest extant datable codices of the Qur'ān pre-date the dated codices of the Hebrew Bible by about two centuries. The fact that

¹⁶ See Beit-Arié et al. (1997), Glatzer (1989, 260–63), Outhwaite (2018, 323).

¹⁷ For the association of the scribal innovations with changes in the physical form of manuscripts see Khan (1990b).

one of the medieval Hebrew terms for Bible codex, *mishaf*, is a loanword from Arabic (*mushaf*) suggests, indeed, that the Jews borrowed the format from the Muslims. We may say that the liturgical scroll remained the core of the biblical tradition, whereas the Masoretic codex was conceived as auxiliary to this. This distinction of function between liturgical scrolls with no vocalization, accents or Masoretic notes, on the one hand, and Masoretic codices, on the other, has continued in Jewish communities down to the present day. Occasionally in the Middle Ages, Masoretic additions were made to scrolls if they had, for some reason, become unfit for liturgical use. The fact that the leaves of a codex were written on both sides, unlike biblical scrolls, and its overall practical format meant that the entire twenty-four books of the Bible could be bound together in a single volume. The less practical scroll format meant that the books of the Bible had to be divided up into a series of separate scrolls. In many cases, however, codices consisted of only sections of the Bible, such as the major divisions of Pentateuch (*Torah*), Prophets (*Nevi'im*) and Writings (*Ketuvim*), or smaller units.

The scrolls generally differed from Masoretic codices not only in the lack of vocalization, accents and Masoretic notes, but also in the addition of ornamental strokes called *tagin* ('crowns') to the Hebrew letters *shin*, *'ayin*, *tet*, *nun*, *zayin*, *gimel* and *sade*.

In the Masoretic period, the task of writing codices was generally divided between two specialist scribes. The copying of the consonantal text was entrusted to a scribe known as a *sofer*, who also wrote scrolls. The vocalization, accents and Masoretic

notes, on the other hand, were generally added by a scribe known as a *naqdan* ('pointer', i.e. vocalizer) or by a Masorete. This reflects the fact that the tradition of transmitting the consonantal text and the tradition of transmitting the Masoretic components were not completely integrated. According to the colophon of the Aleppo Codex, for example, the text was copied by the scribe Shlomo ben Buyā‘ā and its vocalization and Masora were supplied by Aharon ben Asher.¹⁸ For the scribe who wrote the consonantal text the base of authority was constituted by an existing authoritative exemplar manuscript.¹⁹ For the *naqdan* the base of authority was a master teacher of the oral reading tradition. In the case of the Aleppo Codex, the *naqdan* and the master teacher were one and the same person. By contrast, the Codex Lenigradensis, which was produced in the early eleventh century after the close of Masoretic period and the death of the last authorities of the Tiberian oral tradition, was written and vocalized by the same scribe, Samuel ben Jacob.²⁰

¹⁸ The original inscriptions are now lost and survive only in copies (Kahle 1930, 7–12; Ofer 1989). The scribe Shlomo ben Buyā‘ā also wrote the manuscript I Firkovitch II.17 (L¹ according to the abbreviation of Yeivin 1980, 22–23), but the *naqdan* was different from that of A and so the vocalization and accentuation.

¹⁹ In one extant Judaeo-Arabic document from the Genizah the Persian loanword *namūdhaj* 'model, exemplar' is used to refer to such a model manuscript (Outhwaite 2018, 331).

²⁰ There is evidence from colophons that other Masoretic codices, also apparently from the post-Masoretic period, were produced entirely by a single scribe (Outhwaite 2018, 329).

So far we have made a distinction between manuscripts of the Hebrew Bible written in scrolls and those written in Masoretic codices and also between the early Tiberian codices datable to before 1100 and later ones. In the early period, coinciding with or close to the time when the Masoretes were active, we can distinguish between various types of Hebrew Bible codices. The type of codex that has been referred to in the preceding discussion is what can be termed a ‘model’ codex, which was carefully written and accurately preserved the written components of the Tiberian Masoretic tradition. Such manuscripts were generally in the possession of a community, as is shown by their colophons, and were kept in a public place of study and worship for consultation and copying (to produce both codices and scrolls). References to various model codices and their readings are found in the Masoretic notes, e.g. Codex Muggah, Codex Hilleli, Codex Zambuqi and Codex Yerushalmi (Ginsburg 1897, 429–33). Sometimes accurately written manuscripts also contain the text of an Aramaic Targum.

In addition to these model Masoretic codices, there existed numerous so-called ‘popular’ Bible codices, which were generally in the possession of private individuals. These were not written with such precision as the model codices and usually did not include all the written components of the Tiberian Masoretic tradition. Often they contain no accents or Masoretic notes but only vocalization, and this may deviate from the standard Tiberian system of vocalization in a number of details. Some

popular Bible manuscripts were accompanied by an Aramaic Targum or an Arabic translation and commentary.²¹

All popular manuscripts were not necessarily written carelessly. The crucial feature of their production was that the scribes felt less bound by tradition than in the copying of the model manuscripts. Many of them are distinguished from the model manuscripts also in their smaller dimensions and their different page-layout (Arrant 2020).

There were, therefore, three classes of Hebrew Bible manuscript in the early Middle Ages: (i) scrolls used for public reading in the liturgy; (ii) model Masoretic codices, the purpose of which was to preserve the full biblical tradition, both the written tradition and the reading tradition; (iii) popular manuscripts that aided individuals in the reading of the text.

We describe here briefly some of the surviving model Tiberian Masoretic codices that have come to be regarded as among the most important and are referred to in various places in this book. All of these manuscripts originate from the Middle East, as do the vast majority of the early codices. The early eastern manuscripts began to come to the attention of scholars in the nineteenth century, mainly due to the collection of eastern manuscripts assembled by Abraham Firkovitch (1787–1874), the majority of which were donated to what is now the National

²¹ For this type of medieval manuscript see Goshen-Gottstein (1962, 36–44), Díez Macho (1971, 22), Sirat (2002, 42–50), Stern (2017, 88–90), Arrant (2020) and Outhwaite (2020). These scholars use different terms to refer to such Bible manuscripts. Sirat, for example, refers to them as ‘common Bibles’, a term that is adopted by Outhwaite (2020).

Library of Russia in St. Petersburg. An important breakthrough was also the discovery of the Cairo Genizah in the late nineteenth century, which contained many fragments of early eastern Bible manuscripts, the majority of which are now in the possession of Cambridge University Library. The earliest surviving codices that were written in Europe are datable to the twelfth century (Beit-Arié et al. 1997). The early medieval model codices with standard Tiberian vocalization all reflect a basically uniform Masoretic tradition, though no two manuscripts are completely identical. The differences are sometimes the result of scribal errors and other times due to a slightly different reading tradition or system of marking vocalization and accents that is followed by the *naqdan*.

1. The Aleppo Codex (referred to henceforth as A)

In the colophon of this manuscript, it is stated that it was written by Shlomo ben Buyā‘ā and the Masorete Aharon ben Asher (tenth century C.E.) added the vocalization, accents and Masoretic notes. This is confirmed by comparison with the statements concerning the traditions of Ben Asher and Ben Naftali in the Masoretic treatise known as ‘The Book of Differences’ (*Kitāb al-Khilaf*) of Misha’el ben ‘Uzzi’el (§I.0.13.1.). The Aleppo Codex agrees with Ben Asher against Ben Naftali in 94% of the cases of differences between the two Masoretes recorded in this work. It is indeed thought to be the manuscript that Maimonides examined when he pronounced that Ben Asher’s tradition was superior to that of other Masoretes. It should be regarded, therefore, as the authorized edition in Jewish tradition after the

time of Maimonides (Penkower 1981). When Maimonides saw the manuscript, it was kept in Egypt, possibly in the Ben-Ezra synagogue in Fusṭāṭ, which later became famous for its ‘Genizah’. From the later Middle Ages, however, it was kept in Aleppo. In 1948 the synagogue in which it was kept in Aleppo was set on fire and only about three-quarters of the original manuscript were preserved. The surviving portions are now kept in Jerusalem in the library of the Ben-Zvi Institute (Shamosh 1987; Friedman 2012; Goshen-Gottstein 1960; Yeivin 1968). It has been published in a facsimile edition by Moshe Goshen-Gottstein (1976) and images are available online.²² This manuscript forms the basis of a number of Israeli editions of the Hebrew Bible, including the *Hebrew University Bible* (Goshen-Gottstein 1975), the edition of Mordechai Breuer (Jerusalem 1977–1982, re-edited in 1996–1998 with inclusion of new information on the *parasha* divisions) and the modern Rabbinic Bible (*ha-Keter*) edited by Menachem Cohen (1992–).

2. Codex Leningradensis, St. Petersburg (Leningrad), National Library of Russia, I Firkovitch Evr. I B 19a (referred to henceforth as L).

This codex is still widely known as Codex Leningradensis. One of the colophons of the manuscript states that it was written in Fusṭāṭ, Egypt, and subsequently checked and corrected ‘according to the most exact texts of Ben Asher’.²³ Its date is given in the colophon according to five different systems of reckoning,

²² <http://www.aleppocodex.org>.

²³ ל.פי הספרים המדויקים של בן אשר.

which do not completely coincide, but a date in the region of 1008-1009 C.E. seems to be intended. It was, therefore, written after the close of the Masoretic period and was not the original work of a Masoretic authority, unlike the Aleppo Codex, which was vocalized by the Masorete Aharon ben Asher. It is, nevertheless, very similar to A and agrees with Ben Asher against Ben Naftali in 90% of the cases of differences between them that are recorded in the ‘The Book of Differences’. The commissioner and first owner of the manuscript was a wealthy Karaite merchant known as Joseph ibn Yazdād.²⁴ The Codex Leningradensis differs slightly from the Aleppo Codex in a few minor details. There is a lesser degree of marking of *hatef* signs on non-guttural consonants than in A (§I.2.5.3.) and a slightly greater degree of marking of *ga'ya* on open syllables. Some of the original vocalization and accentuation has clearly been changed during the correction process referred to in the colophon and the corrections, in general, correspond to what is found in A. These consist of erasures, mainly of *ga'ya* signs, and additions, mainly of *hatef* signs under non-guttural consonants. The manuscript has been preserved in its entirety and it contains the complete text of the Bible. Paul Kahle made this the basis of the third edition of *Biblia Hebraica* (Stuttgart 1929–1937) and it has been used for all subsequent editions. For practical reasons, unless otherwise indicated, manuscript L is cited according to the edition in the fourth edition of *Biblia Hebraica* (*Biblia Hebraica Stuttgartensia*, abbreviated as

²⁴ For the background of the manuscript and the interpretation of its colophon see Outhwaite (2018).

BHS). In places where there are problems with the reading reflected by BHS (see, e.g. §I.3.1.14.) the manuscript is cited directly. Manuscript L is also the basis of the edition of the Hebrew Bible by Aron Dotan (Tel-Aviv 1973, revised 2001).²⁵

3. British Library, London, Or. 4445 (referred to henceforth as B)

This manuscript contains leaves from different periods. The ones of greatest interest for the study of the Tiberian Masoretic tradition are the oldest leaves, which constitute most of the Pentateuch. These are generally thought to have been written at the same period as A in the first half of the tenth century, or possibly slightly earlier. This older section agrees with Ben Asher against Ben Naftali in 80% of the recorded cases of differences. It marks *hatef* signs on non-guttural consonants slightly more frequently than in the corresponding portions of L, in accordance the principles found in A. The marking of *ga'ya* in open syllables is, however, less frequent than in A. The *rafe* sign, furthermore, is used on non-*בגדכפת* consonants less often than in A (§I.3.2.). It appears, therefore, to represent a slightly less developed tradition than A.²⁶

²⁵ A facsimile edition of the manuscript was published by Loewinger (1970).

²⁶ Yeivin (1968, 359–60), Ginsburg (1897, 469–74), Lyons (1983), Dotan (1993).

4. The Cairo Codex of the Prophets (referred to henceforth as C)

This manuscript, which contains all of the books of the Prophets, was preserved down to modern times in the Karaite synagogue in Cairo. It has a colophon attributing it to the Masorete Moshe ben Asher, the father of Aharon ben Asher, with the date 895 C.E. There is now a consensus that the manuscript was written later, most likely in the eleventh century, and this is a later copy of an earlier colophon.²⁷ The manuscript reflects a tradition that is closer to that of Ben Naftali than to that of Ben Asher. In places where a difference is recorded between Ben Asher and Ben Naftali, it agrees with Ben Asher in 33% of cases and with Ben Naftali in 64% of cases. C also reflects some features of vocalization that are attributed to Ben Naftali in the Masoretic sources. These include forms such as לִישְׁרָאֵל instead of לִישְׁרָאֵל, the latter being the tradition of Ben Asher, which is found in A and L (§I.2.5.1.). Another case is the marking of *dagesh* in the *qof* of the verb בְּקַעַ ‘he supplants’ (Jer. 9.3) (§I.3.1.11.2.). It does not, however, correspond to the tradition attributed to Ben Naftali in all features. In general, it exhibits a more developed tradition than A and L. It marks, for example, *ga'ya* in open syllables (§I.2.8.2.1) and *dagesh* in consonantal 'alef (§I.1.1.) more frequently than is the case in A and L.²⁸ A facsimile of C was published by Loewinger (1971). A Spanish team directed by Pérez Castro (1979–

²⁷ For the arguments regarding its dating, see Menachem Cohen (1982b), Glatzer (1989, 250–59), Lipschütz (1964, 6–7).

²⁸ Yeivin (1968, 360–61).

1992) produced an edition of the manuscript together with its Masora.

5. Jerusalem National and University Library, Heb. 24, 5702 (formerly MS Sassoon 507) (henceforth referred to as S)

This is likely to have been written in the tenth century. The surviving sections contain most of the Pentateuch. It does not exhibit a predominant correspondence to either Ben Asher or Ben Naftali, in that it agrees with Ben Asher against Ben Naftali in 52% of the recorded cases of differences. The vocalization exhibits some features that are attributed to Ben Naftali, e.g. בִּשְׁרָאֵל (§I.2.5.1.). In some features it is more developed than A and L, such as the greater marking of *rafe* and the greater marking of *ga'ya* in open syllables. Unlike A and L, however, it does not mark *hatef* signs on non-guttural consonants.²⁹

Towards the end of the Masoretic period in the second half of the tenth century and the eleventh century, many Karaite scholars became involved with the Tiberian Masoretic tradition. Some studies have shown that the Masoretic notes in some Tiberian Bible codices, including the Aleppo Codex, contain some elements that appear to reflect Karaite rather than Rabbanite theology.³⁰ Does this mean that the whole circle of Tiberian Masoretes were Karaites? There are several problems with such a simple assessment. The medieval sources refer to several

²⁹ Yeivin (1968, 361-362), Shashar (1983).

³⁰ For example, the gradual revelation of *mišvot* to generations before Moses; cf. Zer (2003).

generations of Masoretes, some of them belonging to the same family. They indicate that the family of the famous Masorete Aharon Ben Asher had been involved in Masoretic activities over five generations. Aharon Ben Asher lived in the tenth century, and so Asher ‘the elder’, who is stated to be the great-great-grandfather of Aharon, is likely to have lived in the second half of the eighth century C.E., before the emergence of Karaism on the historical scene. There is no evidence of a Karaite community in Tiberias during the Masoretic period. The immigration of Karaites to Palestine evidently began in the second half of the ninth century and was directed towards Jerusalem (Gil 1992, 182). Some of the Masoretes, furthermore, were closely associated with the Rabbanite Jewish authorities, e.g. Pinhas Rosh ha-Yeshiva ('head of the Academy'), who lived in the ninth century. The 'Academy' (*Yeshiva*) was the central body of Rabbanite Jewish communal authority in Palestine. Some close parallels to the format and phraseology of the Masoretic notes can, in fact, be found in Midrashic literature composed before the Islamic period (Martín Contreras 1999; 2002; 2003). It is likely that these Midrashim were redacted by Jewish sages in Tiberias, which was a thriving centre of Rabbinic scholarship in the Byzantine period (Rozenfeld 2010, 120–26). All this suggests that Karaite scholars joined forces with an existing stream of tradition of 'Bible scholarship' in Rabbanite Judaism, enhancing it and developing it.

The Karaites contributed to the Tiberian Masoretic tradition in various ways. They sponsored the safekeeping of the model Masoretic codices produced by the Masoretes. This is

shown by the fact that colophons of many of the surviving codices indicate that they had come into the possession of Karaite public institutions, such as study houses and synagogues. The Karaites also became involved in the production of accurate copies of Masoretic biblical codices, particularly in the eleventh century, after the cessation of the activities of the Tiberian Masoretes. In the late tenth and early eleventh century, they produced several Masoretic treatises (§I.0.13.1.) and developed the para-Masoretic philological activity of grammar (§I.0.13.4.).

Several of the colophons of the model Tiberian also indicate that the codices were used for liturgical reading by the Karaite communities on Sabbaths and festivals, e.g.

The Aleppo Codex (A):

'in order that they bring it [the codex] out to the settlements and communities in the holy city on the three pilgrimage festivals, the festival of Passover, the festival of Weeks and the festival Tabernacles to read in it'.³¹

The Cairo Codex of the Prophets (C):

'This is the codex, the Eight Prophets, which Ya'beš ben Shlomo consecrated in Jerusalem ... for the Karaites who celebrate the feasts at seeing the moon, for them all to read on Sabbath days, at new moons and at the feasts'.³²

³¹ Kahle (1930, 3): כדי שיוציאו אל המושבות והקהילות שבעיר הקודש בשלשה: רגילים חג המצוות חג השבועות וחג הסוכות לקורות בו.

³² Kahle (1959, 93): זה הדفتر שמנה נביאים שהקדיש אותו יעבן בן שלמה: בירושלים ... לקרין העושים המועדים על ראות הירח יקראו בו כלם בשבות ובחדשים בموיעדים.

II Firkovitch Evr. II B 34:

‘This Bible should be taken to one of the settlements in which there are Karaite communities on Sabbaths and festivals in the city of Cairo so that the congregation can read it each Sabbath and blessed festival’.³³

The use of Masoretic codices for liturgical reading distinguished the Karaites from the Rabbanites, who continued to use scrolls for this purpose (Allony 1979).

I.0.5. *QERE AND KETIV*

The medieval Tiberian Bible codices record the reading tradition not only in the vocalization sign system but also in marginal notes. These are known as *qere* notes. The term *qere* is the Aramaic passive participle קָרֵי ‘read’. The notes were marked when there was a conflict between the orthography of the text, known as the *ketiv* (from the Aramaic passive participle כתִּיב ‘written’), and the oral reading. The usual practice in the manuscripts was to write the vocalization of the *qere* on the orthography of the *ketiv* and then write in the margin the appropriate orthography of the *qere* without vocalization. The *qere* note in the margin is generally flagged by the word קָרֵי (*qere*) under it or the abbreviation ק, e.g.

2 Kings 20.4

L:	העיר	Margin:	חצֵר
		i.e. read the <i>ketiv</i> as	חצֵר הַעִיר
			ק

³³ Kahle (1930, 74–77): יאוסף זה המקרא אל אחת המושבות שייהי בה קהילות הקריםין בשבותות ובמוסדות במדינת מצרים לקראת הקהיל בו בכל שבת ומועד ברוד.

In some places in the manuscripts, the *qere* note is accompanied by a sign that resembles a final *nun* נ. This was evidently a device to draw the attention of the reader (Ofer 2019, 89–91).

Qere notes are unevenly distributed across the Hebrew Bible. They are less frequent in the Pentateuch than in the Prophets and Writings.³⁴

When there is a regular conflict between the orthography of the reading in frequently occurring words and forms, as is the case, for example, with the Tetragrammaton (*ketiv*, *qere* אָדָנִי, יהוה or אֶלְהִים), the place name ‘Jerusalem’ (*ketiv*, *qere* יְרוּשָׁלָם) and some morphological suffixes (see below), the vocalization of the word reflects the *qere* but there are no *qere* notes in the margins with the appropriate orthography.

It is important to distinguish between the *qere* notes and the *qere*. The term *qere* should properly refer to the entire reading tradition, reflected by the vocalization, whereas the *qere* notes concern selected cases where the reading tradition differs sufficiently from the orthography to lead to errors in reading. Errors in reading included not only errors in pronunciation but also errors in the understanding and parsing of a word.

As remarked, the transmission of the Hebrew Bible involved the intertwining of written text and oral reading tradition. The written text was copied by scribes and the memory of the oral reading tradition was passed on from generation to generation by teachers. The scribes and the teachers constituted two distinct groups and their activities were distinct. This is one of the reasons why discrepancies arose between the two channels

³⁴ Barr (1981), Tov (2015, 157).

of transmission. To understand further the phenomenon of a reading tradition (*qere*) of the Hebrew Bible that does not always correspond to the orthography of the written text (*ketiv*), it is helpful to compare the *qere* to the oral reading traditions of the Qur'ān, known as *qirā'at*.

According to early Islamic sources, immediately after the death of the prophet Muḥammad, Qur'ānic verses were preserved in both written and oral form. They were recorded in writing on small fragmentary objects, such as palm stalks and thin stones, and were transmitted in human memory ‘in the hearts of men’ (*ṣudūr al-rijāl*).³⁵ The implication is that oral traditions accompanied written traditions from the very beginning of the process of transmission. After the written text of the Qur'ān had been officially stabilized and had undergone a process of standardization in the form of the edition of the caliph ‘Uthmān (seventh century C.E.), considerable diversity still remained in the various traditions of orally reciting the text, despite the fact that ‘Uthmān had commanded the written texts that did not conform to the new ‘Uthmānic recension to be destroyed. These oral reading traditions exhibited different linguistic features, reflecting differences between the spoken Arabic dialects of the period, and also textual differences. Some of the differences were also due to grammatical errors by reciters. For approximately two centuries after the introduction of the ‘Uthmānic standard written text, some textual differences in the reading traditions still deviated from the or-

³⁵ See *ḥadīth* 4986 in the collection of al-Bukhārī (*Sahih al-Bukhārī*) ed. Muḥammad M. Khan (1997).

thography of this standard text. The textual differences, therefore, were not only different interpretations of the written orthography but also, it seems, different readings that arose in oral transmission. By the third century A.H./ninth century C.E., however, the permitted forms of reading were strictly brought into line with the orthography of the text and with standardized rules of Arabic grammar. This was largely due to the activities of Ibn Mujāhid (d. 324 A.H./936 C.E.), who had the official backing of the government authorities. Ibn Mujāhid also reduced the number of authorized reading traditions to seven canonical ones, which were transmitted from a recognized authority and had a large number of tradents. The principle of conformity with the orthography of the ‘Uthmānic text did not necessarily require correspondence to the reading originally intended by the orthography, but rather it was required that the reading could be accommodated by the orthography. The potential for variation was increased by the fact that what was fixed was the orthography without diacritical dots on the Arabic letters (known as the *rasm*). This is likely to have been intentional in order to accommodate a diversity of reading traditions. The text, therefore, could not serve as a stand-alone document but rather functioned as an *aide-mémoire* for the oral reading (Graham and Kermani 2007, 116; Roxburgh 2008, 8). Various different dialectal forms of Arabic were permitted in the reading traditions, so long as they could be supported by the *rasm*. The orthography originally represented the western Arabian dialect of the Hijāz in which a glottal stop was elided. The word for ‘well, spring’, for example, was pronounced as *bīr* in the dialect of Hijāz (i.e. بَيْر) and this is what

was originally intended by the orthography *بِر*. This was how it was pronounced also in some of the canonical reading traditions. Other canonical reading traditions, however, read the *rasm* with a glottal stop, viz. *bi'r*, in accordance with the phonology of the eastern Arabian dialect (i.e. *بِر*). Some of the most widely followed canonical readings in later centuries, in fact, followed the eastern type of pronunciation, which deviated from what the orthography was originally intended to represent.³⁶

The *qere* of the Hebrew Bible was most likely analogous to the Qur'ānic reading traditions, especially those of the early Islamic period, which sometimes differed textually from the orthography.³⁷ As with the Qur'ānic reading traditions, the *qere* reflects an orally transmitted reading tradition of the written text, i.e. a memorized tradition of oral recitation. It need not be assumed that it is derived from a variant written tradition that had its origin in written manuscripts.³⁸ Indeed allusions to Jewish education in the Second Temple Period refer to learning the Torah

³⁶ For a good overview of Qur'ānic reading traditions see Leemhuis (2017). See also Nasser (2013) and Graham and Kermani (2007).

³⁷ Cf. Crowther (2018), who draws analogies between the diversity of Qur'ānic oral reading traditions with the pluriformity of biblical texts from Qumran.

³⁸ We take the view here of scholars who have stressed the oral dimension of the text reflected by the vocalization; cf. especially Barr (1968, 194–222; 1981), Morag (1974), M. Breuer (1997) and Ofer (2019, 87–89). A discrepancy between a reading tradition and the written text similar to the one found in the transmission of the Hebrew Bible is found

by hearing the recitation of texts, which would be memorized and repeated orally. This acquired knowledge of the text would stand independently of the written text. Josephus (d. 100 C.E.) describes such a process of education as follows:

Let the high priest stand upon a high desk, whence he may be heard, and let him read the laws to all the people; and let neither the women nor the children be hindered from hearing.³⁹

Such memorized oral traditions could potentially survive punctuations such as the physical destruction of written texts, as is likely to have happened after the destruction of the First Temple in the sixth century B.C.E.⁴⁰ and as is reported to have happened during the reign of Antiochus IV Epiphanes, who, according to 1 Macc. 1.56–57, ordered the destruction of books in the Temple in 168–167 B.C.E. In a similar manner oral traditions of the Qur’ān maintained textual traditions that were eliminated by the physical destruction of written non-‘Uthmānic versions (Zbrzezny 2019).

The *qere* notes in the medieval Masoretic codices are unlikely to have originated as written marginal corrections of specific words in the written text, as advocated, for example, by scholars such as Ginsburg (1897, 183–87) and Gordis (1971).

also in the tradition of reciting the Talmud in the Yemenite Jewish community; Morag (1988).

³⁹ *Antiquities* (4.214). The passage is discussed by Schniedewind (2013, 196). Josephus refers elsewhere also to the memorization of Psalms by the Levites (*Antiquities* 20.218).

⁴⁰ Cf. Carr (2005, 161–73).

Rather they constitute a system that was developed before the vocalization signs were created to alert the reader to places where the oral reading deviates from what is represented by the written orthography.

In the early Islamic tradition, the Qur'ān was typically recited only from memory during congregational prayers. In an attempt to bring the oral traditions more into line with the written text, Ḥajjāj ibn Yūsuf (d. 95 A.H./714 C.E.), the governor of Iraq, ordered the recitation to be made from a book rather from memory alone (Hamdan 2006, 172). Such an attempt to bring the recitation of oral tradition more closely together with the text is likely to have occurred also in Judaism in the process of fixing the text after the destruction of the Temple. The oral and written traditions of both the Hebrew Bible and the Qur'ān, nevertheless, continued to be separate levels of transmission. The oral reading was the oral performance of the written text, whereby the two levels were intertwined.

As is the case with Qur'ānic reading traditions, the *qere* reflected linguistic differences from the *ketiv*, textual differences and sporadic errors in reading.

The linguistic differences often appear to reflect dialectal divergences. The *qere* of the pronominal suffixes *‑χɔ:* [-χɔ:], *‑tɔ:* [-tɔ:] and *‑ɔ:* [-ɔ:], for instance, reflect different morphological forms from those reflected by the *ketiv*. The *ketiv* of the second person suffixes *‑τ‑*, *‑η‑* reflect forms without a final vowel and the 3ms suffix *‑ω‑* appears to reflect a suffix containing a front vowel, such as *-ēw* or the like. The forms of the *qere* are reflected in Qumran manuscripts and Hebrew epigraphic texts from the first

millennium B.C.E. by spellings such as כָּה-תָּה- and וְ- (Cross and Freedman 1952, 53, 66–67; Qimron 1986, 58–60). The spelling of these suffixes with the normal Masoretic type of orthography is also found in Qumran and epigraphic texts.⁴¹ The *qere* of the suffixes נִ-⁴², תִּ-⁴³ and וִ-⁴⁴, moreover, is reflected by the orthography of the consonantal text in a few sporadic cases, e.g. יְדַבֵּה ‘your hand’ (Exod. 13.16), גָּרַףְתָּ ‘you have sojourned’ (Gen. 21.23), חָשַׁבְתָּ ‘his arrows’ (Psa. 58.8). It is not necessarily the case, therefore, that the linguistic differences between the *qere* and the *ketiv* always reflect later stages of development of the Hebrew language, but rather in many cases these may have been contemporary dialectal differences. Exceptional pronominal forms that appear in the *ketiv* but not in the *qere* and have been considered archaic are often attested in the orthography of Qumran manuscripts. This applies, for example, to 2fs pronominal forms with final *yod*:

ketiv אַתִּי, *qere* אַתָּה 1 Kings 14.2 ‘you (fs)’

ketiv הָלַכְתִּי, *qere* הָלַכְתָּ Jer. 31.21 ‘you (fs) went’

ketiv לְבִי, *qere* לְבָדֶךָ 2 Kings 4.2 ‘to you’

The *yod* occurs on these pronominal forms in Qumran manuscripts where they do not occur in the *ketiv* of the Masoretic Text, suggesting that it was still a living linguistic feature in the late Second Temple period. Examples are particularly numerous in the scroll 1QIsa^a, e.g.⁴²

⁴¹ For a detailed discussion of the attested forms of the suffix see Hornkohl (2020).

⁴² Material incorporated from the Gesenius grammar project contributed by Aaron Hornkohl.

(1QIsa^a 42.24 | BHS אַתְּ־הִיא Isa. 51.9 ‘[are] you [not] she’)

(1QIsa^a 39.26 | BHS לְבָד Isa. 47.7 ‘your [fs] heart’)

(1QIsa^a 17.4 | BHS עֹלֵית Isa. 22.1 ‘you [fs] have gone up’)

In fact, the forms with *yod* occasionally occur in the *qere* of the Masoretic text, e.g. חַיְיכִי ‘your (fs) life’ (Psa. 103.4).

There are other less frequently occurring instances where there appear to be differences in morphology between the form represented by the orthography of the *ketiv* and the *qere* without it being felt necessary to write a *qere* note, e.g.

Cant. 3.4. עַד־שָׁהַבְּאַתְּיוֹ ‘until I had brought him’

Gen. 24.47. וְאֶשְׁפַּט ‘and I placed’

Lev. 20.26. וְאֶבְדַּל ‘and I have separated’

Here the *ketiv* orthography is likely to reflect the forms הביאתיו and ואשפט respectively. Evidently, the orthography of the *ketiv* was considered to be acceptable as a representation of the *qere* due to analogy with orthography in other contexts, e.g. הביא ‘bring!’ (1 Sam. 20.40), and defective spellings such as שלשים ‘officers’ (Exod. 14.7).⁴³

With regard to textual differences between the *qere* and the *ketiv*, sometimes there is a difference in the whole word, e.g. 2 Kings 20.4, written העיר ‘the town’, read חצר ‘the court’ or the

⁴³ The linguistic differences between the *qere* and the *ketiv* are particularly prominent in Biblical Aramaic, where in many cases each of these layers clearly reflects different dialects of Aramaic.

division of words, e.g. Ezek. 42.9, written לְשָׁכֹות הָאֱלֹהִים, read מִתְחַת הַלְּשָׁכֹות הָאֱלֹהִים ‘below these chambers’. In some isolated cases the discrepancy amounts to omissions or additions of words or phrases, e.g. Jer. 31.38, written הִנֵּה יְמִים בָּאִים, read הִנֵּה יְמִים בָּאִים ‘behold the days are coming’.

In a few cases, a textual difference in the *qere* does not differ in its phonetic form from the reading offered by the *ketiv*. This applies, for example, to several instances where the *ketiv* is לו ‘to him’ and the *qere* is לא ‘not’ and vice versa, e.g.

וְקָם הַבַּיִת אֲשֶׁר-בָּעָיר אֲשֶׁר-לֹא חָמָה לְצִמְתָּה לְקָנָה אֹתָן

qere: אֲשֶׁר-לֹא חָמָה

‘The house that is in a city with a wall (*ketiv*: a city that is not a wall) shall be made sure in perpetuity to him who bought it’ (Lev. 25.30).

וְאָמַר | לֹא בַּי עֲתָה תָּפִן

qere: וְאָמַר | לא

‘He would say “No, you must give it now” (*ketiv*: ‘He would say to him “You must give it now”’ (1 Sam. 2.16).

In such cases, the conflict between the oral *qere* and the orthography of the *ketiv* is only a difference in its interpretation, which shows that the oral reading was transmitted together with an associated semantic content. So the note in the margins of medieval Masoretic manuscripts stating that the *qere* is לו where the *ketiv* has נֹל indicates that in the reading tradition this word *lo* has the meaning ‘to it’ and offers an orthography that is more appropriate for this than the orthography of the *ketiv* (לא), which

reflects a different meaning of *lō*, namely the meaning of the negative particle. In late antiquity, this semantic content was expressed by the Targums (Onqelos and Jonathan), which frequently reflect an interpretation of the *qere* and not the *ketiv* (e.g. Onqelos to Lev. 25.30: ‘בֵּיתָא דְּבָקְרַתָּא דְּלִיהָ שׁוֹרָא’ ‘a house that is in town that has a wall’). In a number of cases, however, the Targums reflect the semantic content reflected by the orthography of the *ketiv*. This applies, for example, to the Targum to 1 Sam. 2.16, which reflects the *ketiv* לָו ‘to him’: ‘וַיֹּאמֶר לְיָהּ וְאָמַר לְיָהּ’ ‘and he said to him’. This reflects a diversity of interpretative traditions.

Another case where the *ketiv* and *qere* have the same phonetic form is 2 Sam 5.2: *ketiv* את, *qere* note המביא את ‘the one bringing in + object marker’ (וְהַמְבִיא אֶת-). The *ketiv* seems to have arisen by haplography of an *'alef*. The *qere* note need not be taken as evidence that it has its origin in a written manuscript with the correct orthography, but rather indicates that in the reading tradition the *ketiv* is interpreted as meaning המביא. The purpose of the note was to ensure that readers parsed the anomalous orthography correctly. Similar cases of *qere* notes that do not reflect a different pronunciation but rather offer help in parsing words with an unusual orthography include Jer. 18.3 *ketiv* הוּא, *qere* note והנה הוּא ‘and behold he’ (וְהַנֵּה-הָוּא) and Exod. 4.2 *ketiv* מִזֶּה, *qere* note מִזֶּה ‘what is that?’ (מִזְהָה). In these last two cases, the orthography of the *ketiv* has the purpose of reflecting the prosodic bonding of the words. Although this prosodic bonding indeed exists also in the *qere*, the *qere* note was

considered necessary since such combinations of words are normally not represented in this way in the orthography.

Another case of the *qere* note apparently differing only in orthography from the *ketiv* is

1 Chron. 11.17. L: וַיְתָאֵן ‘and he desired’, *qere* note: וַיְתָהֵן, i.e. the *qere* is וַיְתָהֵן.

Here the spelling of the *qere* note with final ו (imitating the orthography of the 3ms pronominal suffix on plural nouns וּ-) is likely to be a device to ensure that the ending of the word is read as a final diphthong. Similar *qere* notes for this verb are found in Prov. 23.6 and Prov. 24.1. An analogous type of note is found in Jer. 17.11: *ketiv* מוֹם, *qere* מוֹם ‘his days’ (מוֹם). The orthographies וַיְתָאֵן and מוֹם would, in principle, be possible for the representation of a final diphthong consisting of *qameṣ* and consonantal *vav* [ɔ:ɔv]. The point is that the *vav* in orthographic sequences such as וְ- and מוּ- at the ends of words would normally be read in the biblical corpus as a vowel. The *qere* note warns against following the normal practice, which would result in an error of reading.

In a few cases, the *qere* has a *qameṣ ḥatuf* or *ḥatef qameṣ* where the *ketiv* has a vowel letter *vav*, e.g.

Neh. 4.9. L: וַיִּשְׁׁבֶּן ‘and we returned’, *qere* note: וַיִּשְׁׁבַּן, i.e. the *qere* is בַּן.

The purpose of the *qere* note is to supply a more appropriate orthography for the short vowel of the reading tradition since the orthography of the *ketiv* with *vav* could cause an error in reading.

In some cases falling into the category of those just discussed, in which the *qere* note presents a more frequent variation of orthography rather than the orthography of a completely different word, there is a Masoretic note relating to orthography rather than a *qere* note, which serves the same purpose, e.g.

Neh. 13.23. L: אֲשֶׁר־קְדוּשָׁה עַמּוֹנִים ‘Ashdodite, Ammonite women’, note וַיַּרְא (‘the *vav* is redundant’), i.e. the *qere* is אֲשֶׁר־קְדוּשָׁה עַמּוֹנִים.

In these types of cases the manuscripts occasionally differ, some having a *qere* note and others a Masoretic note relating to orthography (Ofer 2019, 92), e.g.

2 Sam. 16.8. תְּחִנֵּת:

L: תְּחִנֵּת קְ ‘the *qere* is תְּחִנֵּת’

A: חִנֵּת קְ ‘one of four cases in which the orthography (of this suffix) lacks (*yod*)’

Notes such as those just described, in which the *qere* is pronounced the same or similarly to the *ketiv*, suggest that the *qere* notes were originally compiled before the creation of the vocalization signs, since the vocalization would have ensured that such an error of reading was not made. References to differences between *qere* and *ketiv* are, in fact, already mentioned in Rabbinic literature (Yeivin 1980, §105; Ofer 2008; 2009).

In a large proportion of cases where the *qere* differs from the *ketiv*, the *qere* represents an easier reading than the *ketiv*. The reading may be textually easier. The *qere*, for example,

sometimes has a *vav* where the *ketiv* has a *yod* that is textually difficult and has evidently arisen through scribal error, as in:

Jer. 13.20. L: שָׂאֵי עִינְכֶּת ‘lift up your (pl) eyes’ (where the *ketiv* reflects שָׂאֵי ‘lift up (fs)’), *qere* note שאו, i.e. the *qere* is אַשְׁר

In some places, the *qere* inverts the letters of a *ketiv* of an obscure form to produce a familiar form, e.g.

2 Sam. 20:14. L: וַיַּקְרְבּוּ ‘and they assembled’, *qere* note יַקְרְבּוּ, i.e. the *qere* is וַיַּקְרְבּוּ.

In such cases in the Aleppo Codex the vocalization signs are not marked in the order required by the *qere* but rather are marked on the letters of the *ketiv* in a different order from the form of the *qere* that they are intended to represent, i.e. וַיַּקְרְבּוּ (Yeivin 1962). Here each individual letter has the vocalization required by the *qere* but the sequence of vowels is still according to the order of the letters in the *ketiv*. This may reflect the notion that the *qere* here is correcting a mistaken orthography, which is scrambled in the *ketiv*.

The *qere* may be socially easier, in that it supplies a euphemism in place of a less socially polite *ketiv*, e.g.

Deut. 28.30. L: יִשְׁכַּבְנָה ‘he will ravish her’, *qere* note יִשְׁכַּבְנָה, i.e. the *qere* is יִשְׁכַּבְנָה ‘he will lie with her’.

It may be theologically easier by, for example, supplying a substitution for the sacred Tetragrammaton or avoiding an anthropomorphism, as in

שְׁלֹשׁ פָּעִים | בָּשְׂנָה יַרְאָה כָּל־זְכָרָךְ אֶת־פָּנָי | יְהוָה אֱלֹהֵיךְ ‘Three times a year all your males shall appear before the Lord, your God’.

Here the verb **יראה** is read as a *nif'al*, but the *ketiv* appears to have originally represented a transitive *qal* verb ‘he will see (the face of the Lord)’. The reading tradition was less anthropomorphic and so theologically more acceptable.

In a few cases, however, the *qere* contains textual differences that appear to be more difficult than that of the *ketiv* and have arisen by an error, e.g.

בְּעֵינִי, בְּעֵינִי, בְּעֵינִי L: *qere* note i.e. the *qere* is ‘upon my eye’.

The *ketiv* reflects the word **עוני** ‘my punishment’, and this would seem from the context to be the original reading here (C. McCarthy 1981, 81–83) and the reading ‘my eye’ has arisen by an erroneous reading of the word: **אוֹלֵךְ יְהוָה יְהוָה בְּעֵינִי** (קרי בעיני) ‘It may be that the Lord will look upon my punishment (*qere* my eye) and that the Lord will repay me with good for this cursing of me today.’ The Septuagint translates ἐν τῇ ταπεινώσει μου ‘in my humiliation’, which is clearly a rendering of the *ketiv*. The interpretation of Targum Jonathan, however, reflects the reading of the *qere*: **מִא אָמַגְלֵיא קָדֵם יְהוָה דְּמֻעַת עֵינִי** ‘what if the tear of my eye is revealed before the Lord?’. Another example is

Gen. 8.17. L: **הַיּוֹצֵא** ‘bring out’, *qere* note **הַיּוֹצֵא**, i.e. the *qere* is **הַיּוֹצֵא**.

The *qere* here is the morphologically difficult form הַיְצָא, whereas the *ketiv* reflects the expected form הַזָּא. Here again, the *qere* seems to have arisen by an erroneous reading of a *yod* instead of a *vav*. The letters *vav* and *yod* were often difficult to distinguish in the Hebrew square script used in the Second Temple Period (Tov 2012, 228–32).

Difficult *qere* readings such as בְּעִיטֵי and הַיְצָא, which apparently arose from a confusion of written letters, do not necessarily originate in scribal errors in written texts but rather could have been due to misreadings of a written text in the oral recitation. This would imply that the oral reading tradition, although memorized and potentially independent of the written text, in practice had some degree of dependence on it. As remarked, it is best characterized as an oral performance of the visible written text. The tradition of this oral performance was evidently less fixed in antiquity and could adjust to the visible written text, even when this was misread. At a later period, the Tiberian reading tradition was fixed in its textual form, but it nevertheless continued to have the status of an oral performance of the written text and so have some degree of dependence on it. This is reflected, in particular, in the phenomenon of orthoepy in the Tiberian reading tradition, i.e. the effort to ensure that the distinct elements of the written text are given their optimal realization (§I.0.11.).

The intertwined nature of the oral reading tradition and the written text is reflected also in the interpretation exhibited by the early versions and by the interpretation traditions that existed during the first millennium C.E. when the Tiberian reading was still a living oral tradition. In the ancient versions, such as the

Septuagint, the Peshitta and the Vulgate, the renderings of passages with *qere* and *ketiv* differences in the Masoretic tradition in some cases reflect the Tiberian *qere* and in other cases reflect the *ketiv*.⁴⁴ Even Greek transcriptions of Hebrew proper names in the Septuagint in some cases reflect the *ketiv* rather than the *qere*.⁴⁵ It is possible that in the source text and source reading tradition of the Septuagint in the Second Temple Period the *qere* and *ketiv* variations were distributed differently from what came to be fixed in the Masoretic tradition. This is less likely, however, in later versions such as the Peshitta and Vulgate, and it appears that the translators were basing themselves on either the *qere* or the *ketiv*. In the Talmudic period, indeed, the Rabbis based their interpretations of Scripture on both the *qere* and the *ketiv*, and traces of this practice continued into the Middle Ages.⁴⁶

I.0.6. THE ACCENTS

The *qere* became canonical and fixed. After the canonization of the *qere*, another level of oral reading was superimposed on the *qere* in the form of the divisions of the *qere* text expressed by cantillation. These divisions, which came to be represented graphically by the medieval accent signs, expressed a particular

⁴⁴ According to Gordis (1971, 66) the Peshitta and Vulgate versions reflect approximately 70% *qere* readings and the Septuagint approximately 60%.

⁴⁵ Myers (2019, 285–86).

⁴⁶ Goldberg (1990), Naeh (1992; 1993).

interpretation of the text.⁴⁷ Occasionally the accent divisions do not correspond to the tradition of the written text. This applies to some cases where there is a conflict between the accents and the paragraph divisions, known as *parashiyyot*, in the Tiberian Masoretic text. These paragraph divisions in the layout of the written text are found in the manuscripts from Qumran, both biblical and non-biblical. There is a large degree of agreement between the paragraphing of the Qumran biblical scrolls and that of the medieval manuscripts, which indicates that the tradition can be traced back to the Second Temple period. In a number of places, however, the paragraph divisions in the medieval manuscripts do not coincide with the end of a verse according to the accents. This is known as פסקה ב באמצע פסוק ‘a paragraph division within a verse’, e.g. Gen. 35.22, 1 Sam. 16.2. The reason for this appears to be that the paragraph division of the written text and the division expressed by the cantillation are two different layers of exegetical tradition, which occasionally do not correspond with one another. In a number of cases, the cantillation divisions conflicted with the *qere*, as is seen by the fact that in a number of verses a division in the *qere* represented by a pausal form in the vocalization has a conjunctive accent in the cantillation.⁴⁸

⁴⁷ There is evidence that the written accent signs were introduced before the vocalization signs in the various traditions of notation of reading traditions (Dotan 1981).

⁴⁸ For this phenomenon see Revell (1980; 2015), I. Ben-David (1995) and Khan (2013a, 59–60). According to Dresher (1994) and DeCaen and Dresher (2020) this phenomenon is motivated by the system of prosodic division, which obliges conjunctives to be used in long verses in

The cantillation is a layer of reading that has roots in late antiquity. There are references to the teaching of biblical cantillation in Talmudic literature. One passage (Babylonian Talmud, *Berakhot* 62a) mentions the use of the right hand by the teacher or leader of the congregation to indicate the accents of the reading. The term פְּסָקִי טֻعַמִּים ‘stops of the accents’, which is found in Talmudic literature, reflects the function of the accents to mark syntactic division. The association of the chant with the interpretation of the meaning of the text was recognized, as is shown by the Talmudic interpretation of Neh. 8.8 ‘[And they read from the book, from the law of God, clearly;] they gave the sense and (the people) understood the reading’ (וְשׂוֹם שֶׁבֶל וַיְגִינוּ בְמִקְרָא), which is said to refer to the reading with accents.

Evidence for the division of the biblical text by accents in the Second Temple period is found in a Septuagint manuscript from the second century B.C.E. that has spaces corresponding to the major pausal accents of the Tiberian tradition (Revell 1971). In addition to the Tiberian accent signs, there was also a tradition of marking cantillation divisions by accents in manuscripts with Babylonian vocalization. Divisions of the Babylonian cantillation in most cases coincide with those of the Tiberian tradition (Shoshany 2003; 2013). This can be interpreted as reflecting that they had a common origin in antiquity.

There is evidence that in the Second Temple period the exegesis of the syntax of the biblical text did not always

some places where they are not expected. This would imply that the prosodic accent system was imposed on an earlier inherited reading tradition.

correspond to that of the Tiberian accents. This is seen in the Septuagint translation, which often reflects a different syntactic division of the verse. From the Pesher commentaries found in Qumran, moreover, it appears that the delimitation of biblical verses did not always correspond to the placement of the final pausal accent (*silluq*) in the Tiberian tradition. It should be taken into account, however, that, just as there was a large range of consonantal textual traditions at this period, it is likely that there were a variety of exegetical traditions regarding the syntax of the text.

This is seen in the case of Isa. 40.3. In the New Testament, ‘the voice of one crying in the wilderness’ of Matt. 3.3 reflects an interpretation that is different from the one reflected by the Tiberian accents. In the *Manual of Discipline* from Qumran (1QS 8.13-14), however, the introit ‘a voice calls’ is omitted and the teacher uses the verse to exhort the sectarians ‘to prepare a way in the wilderness’, i.e. establish a community there. This shows that the Masoretic interpretation of the syntax was also current at that period. The version found in Matt. 3.3 is apparently an exegetical reworking to support the call of John from the wilderness (Fishbane 1988, 367–68). Another case is Deut. 26.5. The interpretation in conformity with the accents ‘An Aramaean was seeking to destroy my father’ can be traced to the Second Temple period. Midrashic literature, however, indicates that there was also an ancient tradition of interpreting it ‘My father is an Aramaean about to perish’ (Goldschmidt 1960, 34ff.).⁴⁹ It is likely

⁴⁹ The Septuagint translation (*συρίαν ἀπέβαλεν ὁ πατήρ μου* ‘my father abandoned Syria’) seems to reflect a slightly different consonantal text.

that the exegetical tradition of the Masoretic accents has its origin in the teachings of mainstream Pharisaic Judaism. Within the accent system itself one can sometimes identify different layers of tradition. One example of this is the decalogue in Exod. 20.13-16. The accentuation of this passage is unusual in that most words have two different accents. The explanation of this double accentuation is apparently that it reflects two layers of tradition. According to one layer of tradition, the four commandments are presented in four separate verses, whereas in another they form together one accentual unit.⁵⁰

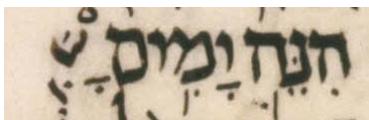
The Targums frequently reflect an interpretation of the text that corresponds to the divisions of the cantillation. In Deut. 26.5, for instance, the disjunctive accent on the first word of the clause נָרְמִי אֶבְדֵּ אָבִ indicates that it is syntactically separated from the following word and so the two should be interpreted as subject and predicate rather than a noun and attributive adjective. The sense reflected by the accents, therefore, is ‘An Aramaean (i.e. Laban) was seeking to destroy my father’. This is a Midrashic interpretation, which is reflected by Targum Onqelos (בן ארמאה לְאֹובְדָא יְתַ אָבָא).⁵¹

We may say, therefore, that three layers of textual tradition became fixed and canonized, one written, i.e. the *ketiv*, and two oral, i.e. the *qere* and the cantillation tradition. It is not known whether there was a difference in the historical depth of the two oral layers of tradition. The accents, however, clearly relate more closely to the *qere* than the *ketiv*. When, for example, the *qere*

⁵⁰ For the existence of different layers of accent systems see Menahem Cohen (1987).

contains words that are not written in the *ketiv*, these words have accents and, vice versa, words that are written but not read have no accents. When a word that occurs in the *qere* is omitted in the *ketiv*, some manuscripts write the accents, e.g. in Jer. 31.38, where the *ketiv* is הִנֵּה יְמִים בָּאִים and the *qere* is ‘behold the days are coming’, L writes the accents of the *qere* בָּאִים on a filler sign:

L:



This phenomenon of two oral traditions may be compared to the toleration of pluriformity in the oral reading traditions (*qirā'āt*) of the Qur'ān. As we have seen above, attempts were made to restrain this pluriformity, but it was not eliminated altogether and a limited diversity of reading traditions were legitimated. The most direct analogy to the different Qur'ānic *qirā'āt* is the existence of reading traditions that were distinct from the Tiberian one, namely the Babylonian, Palestinian and various non-standard Tiberian traditions. One could, however, also regard the existence of distinct oral layers within the Tiberian tradition as a manifestation of the legitimization of a pluriformity of reading traditions.

I.0.7. THE REPRESENTATION OF THE *QERE* IN WRITTEN FORM

As is well known, the Targums sometimes go beyond the oral reading reflected by the medieval Masoretic tradition and make further adjustments for purposes of exegesis or the resolution of perceived textual difficulties. One may regard them, therefore, as a further layer of tradition, refining the oral cantillated *qere*. It is of interest that some features of the oral *qere* and the adjustments of the Targums actually appear in the written text of some Qumran Hebrew Bible manuscripts.⁵¹ This may be compared to the situation in the early years of the transmission of the Qur’ān. There are references to the existence of early codices of the Qur’ān that deviated from the ‘Uthmānic text. Some of the readings attributed to these codices that differed from the ‘Uthmānic text survived as oral reading traditions after the ‘Uthmānic recension had become the standard written form of the text.⁵² Even in some medieval manuscripts of the Hebrew Bible, the reading of the *qere* was written in the text in place of the reading of the *ketiv*. These were predominantly manuscripts written for private use. Such manuscripts, which are mainly preserved in the Genizah in fragmentary form, often deviate from the traditional Masoretic tradition in other respects. Many, for

⁵¹ For the reflection of the *qere* in the *ketiv* of 1QIsa^a from Qumran see Kutscher (1979, 519–21). The correspondences between the adjustments of the Targum and the *ketiv* of Qumran manuscripts have been discussed by Gottlieb (2016).

⁵² See Leemhuis (2017).

example, exhibit features of Non-Standard Tiberian vocalization or lack accents. An extreme case of such private medieval manuscripts is a corpus of Hebrew Bible manuscripts written by Karaite scribes in Arabic transcription (§I.0.13.3.). These regularly represent the *qere* in the transcription rather than the *ketiv*. By contrast, monumental manuscripts, which were typically deposited in public institutions, preserved the traditional distinction between the *ketiv* and the *qere*.

Biblical manuscripts with Palestinian vocalization, which in general should be considered to be private texts, frequently have the *qere* form written in place of the *ketiv* (Revell 1977, 164–65). Manuscripts with Babylonian vocalization, most of which can be assumed to have been written in Iraq, correspond to the Tiberian consonantal text very closely and differ only in a few details. These differences are generally related to orthography and include, in some cases, the harmonization of the *ketiv* with the *qere*. Such small divergences between the ‘Easterners’ (*Madin-ha’e*) and the ‘Westerners’ (*Ma’arba’e*) are mentioned in the Tiberian Masoretic notes and also in lists appended to Tiberian manuscripts.

I.0.8. THE HISTORICAL DEPTH OF THE TIBERIAN READING TRADITION

There are a number of indications that the Tiberian reading tradition, i.e. the *qere* of the Tiberian Masoretic Text, which came to be represented by the Tiberian vocalization sign system, had its roots in the Second Temple Period.

As has been remarked, the textual differences between the reading and the written text are referred to in Rabbinic literature. Furthermore, some of the Qumran scrolls from the Second Temple period have in a number of places the text of the Tiberian *qere*.⁵³ One may trace back the text of *qere* forms even further, into the period of literary growth of the biblical books. There is internal evidence for this in the distribution of *qere* and *ketiv* within the Masoretic text. This is found, for example, in the fact that the *ketiv* of the text of Chronicles often corresponds to the *qere* of its earlier biblical source. An example of this is the word מִגְרָשִׁים ‘surrounding pasture-lands’, which is used in association with the lists of Levitical cities in Josh. 21 and 1 Chron. 6. The Chronicler is clearly using the text of Josh. 21 as his literary source. In the original text in Joshua, the word is always written as a singular form but it is read in the reading tradition as a plural: מִגְרָשָׁה. This reflects a later interpretation of an originally singular form as a plural (Barr 1984). This ‘later’ interpretation, however, is no later than the consonantal text of Chronicles, where it is written as a plural. Even if we do not attribute this interpretation to the author of the Chronicles passage, there are good grounds for arguing that the text of the reading tradition of Josh. 21 is as old as the consonantal text of 1 Chron. 6.⁵⁴

⁵³ This is found particularly in ‘popular’ texts such as 1QIsa^a; cf. Kutscher (1979, 519–21).

⁵⁴ For the antiquity of the reading tradition see the discussion in Barr (1968, 207–22) and Grabbe (1977, 179–97). Maimon Cohen (2007) argues that the *qere* variants listed in the Masoretic notes are linguistic

In Late Biblical Hebrew, certain verbs with a reflexive or non-agentive meaning appear as *nif'al* in the past suffix conjugation form (perfect) whereas they appear as *qal* in Classical Biblical Hebrew. The intransitive form of the verb ‘to stumble’ (כָּשַׁל), for example, appears in the *nif'al* נִכְשָׁל in the book of Daniel (בְּשָׁל), ‘and he will stumble’ Dan. 11.19) but in the *qal* form כָּשֵׁל elsewhere. In the prefix conjugation (imperfect), however, the verb is vocalized as a *nif'al* throughout the Bible. This is because the *ketiv* of the prefix conjugation (כָּשַׁל) is ambiguous as to the verbal conjugation and could, in principle, be read as *qal* or *nif'al*. The Tiberian reading tradition treats the verbal forms as *nif'al* where this would be compatible with the consonantal text, but the occurrence of the *qal* form in the suffix conjugation in Classical Biblical Hebrew suggests that the verb was originally read as *qal* in all forms. This is clearly the case in the infinitive form of this verb תִּכְשֹׁל (Prov. 24.17), where the consonant text lacks the initial *he* of the *nif'al* הַכְשִׁל and so must have represented the *qal*, but it is nevertheless read as a *nif'al*. The crucial point is that the replacement of the *qal* by the *nif'al* is reflected by the consonantal text itself in Late Biblical Hebrew in the book of Daniel. In some cases, the evidence for the development of an original *qal* verb into a *nif'al* form that is independent of the vocalization is found in the Qumran manuscripts from the Second Temple period many centuries before the creation of the vocalization sign system. This applies, for example, to the verb וַיַּגַּשׁ ‘to approach’. On account of the assimilation of the initial *nun* in this

variants that date back to the time of the composition of the biblical books.

verb when in contact with the following consonant, the orthography of the prefix conjugation can only be read as *qal* (שׁוֹי), since a *nif'al* reading would require the insertion of a *nun* in the consonantal text (שׁוֹנֵי). The orthography of the suffix conjugation form (שׁוֹגֵן), however, could be read as either *qal* or *nif'al*, and it is the *nif'al* reading that was adopted in the reading tradition (שׁוֹגֵן). In the Qumran text 4Q512 (40–41, 2) the infinitive of this verb appears in the form בְּהַנְגִשָּׁה, which is unambiguously a *nif'al* (בְּהַנְגִשָּׁה) (Ariel 2013, 947). Similar distinctions between the suffix conjugation and prefix conjugation of passive forms are found, whereby the former is vocalized as *pu'al* whereas the latter is vocalized as *nif'al* (e.g. טָרַף ‘was torn apart’ vs. טָרַפֵּה). Furthermore, the vocalization interprets certain verbs as *pi'el*, which are likely to have been originally *qal*. The verb גַּרְשָׁנָה ‘to drive out’, for example, is normally vocalized as *pi'el* in the prefix and suffix conjugations (גַּרְשָׁנָה, גַּרְשָׁנֶה), in which the orthography is ambiguous between a *qal* or *pi'el* reading. In the participles, however, where the orthography of *qal* and *pi'el* would be distinct, the original *qal* is preserved (שָׁרֵשָׁה, שָׁרֵשָׁה). The shifts of *pu'al* to *nif'al* and *qal* to *pi'el* are developments that are attested in Post-biblical Hebrew already in Second Temple sources.⁵⁵

Another case of correspondence of the *ketiv* of late books with that of the *qere* of earlier books is the word ‘Jerusalem’. The

⁵⁵ For these issues relating to the vocalization of verbal forms see Ginsberg (1934), Ben-Hayyim (1958, 237), Qimron (1986) and Fassberg (2001). For further re-interpretations of the Masoretic orthography in the Samaritan reading tradition see Ben-Hayyim (2000, 338–339) and Schorch (2004).

regular *ketiv* or this word in the earlier books is יְרוּשָׁלָם, whereas the *qere* is יְרוּשָׁלָם [jaʁu:ʃɔ:lə:jim] with the final syllable broken by a glide. In some of the late books, there are a few examples of the *ketiv* of this word spelt with a *yod* before the final *mem*, e.g. מִירֻשָׁלָם (Esther 2.6).

External evidence for the antiquity of the *qere* includes the fact that in many cases where there is a semantic difference between the *qere* and the *ketiv*, the meaning of the *qere* is reflected by the Greek Septuagint. A clear example of this is the exegetical alteration in the reading tradition whereby an original expression of ‘seeing the face of God’ is changed into the theologically more acceptable ‘appearing before God’ by reading the verb as a *nif'al* rather than as a *qal*, e.g. Deut. 16.16 שְׁלֹשׁ פְּעִמִּים | בַּשְׁנָה יְרָאָה כָּל־^{יְהוָה אֱלֹהֵינוּ} ‘Three times a year all your males shall appear before the Lord, your God’. This change is clear where the verb is an infinitive and it lacks the expected initial *he* of the *nif'al* form in the consonantal text, e.g. Exod. 34.24 בְּעַלְתָּךְ לְרֹאֹת אֶת-פְּנֵי^{יְהוָה אֱלֹהֵינוּ} ‘When you go up to appear before the Lord, your God’. This change in the reading tradition is reflected not only in the Targums but also already in the Septuagint (C. McCarthy 1981, 197–202), the Pentateuch section of which is normally dated to the third century B.C.E.

One example that demonstrates the conservative nature of the phonology of the Tiberian reading is the pronunciation of the *pe* in the word אֲפָךְ ‘his palace’ (Dan. 11.45). According to medieval sources, this was pronounced as an emphatic unaspirated stop, whereas the letter *pe* with *dagesh* in all other places in the reading tradition was pronounced as an aspirated

stop, i.e. a stop followed by a short flow of air before the onset of the voicing for the ensuing vowel (§I.1.17.). The hard pronunciation of the *pe* is also mentioned by Jerome, who states that it is the only ‘Latin’ *p* in the entire Bible (*p* in Latin was regularly pronounced as an unaspirated stop).⁵⁶ The hard pronunciation is also reflected by the Greek transcription Απαδάνω by the Church father Theodoretus (fifth century CE). Here the Hebrew letter is with Greek *pi*, which, like Latin *p*, was pronounced as unaspirated [p].⁵⁷ The word is in origin a loan from Old Persian. The unaspirated pronunciation of the *pe*, which is uncharacteristic of Hebrew, evidently preserves a feature that existed in the pronunciation of the source language.⁵⁸ The fact that this feature, which conflicted with normal Hebrew pronunciation, should have been preserved from the original

⁵⁶ Notandum autem quod cum *pe* littera hebraeus sermo non habeat, sed pro ipsa utatur *phe* cuius uim graecum φ sonat—in isto tantum loco apud Hebraeos scribatur quidem *phe* sed legatur *pe*. ‘But it should be noted that while Hebrew speech does not have the letter *pe* (i.e., Latin *p* [p]), but instead of it uses *phe*, the force of which is approximated by the sound of Greek φ (i.e., [ph])—in that particular place (i.e., Dan. 11.45) among the Hebrews *phe* (i.e., φ [ph]) indeed is written but it is read as *pe* (i.e., Latin *p* [p])’. Translation by Ben Kantor. Cf. Sutcliffe (1948, 124–25).

⁵⁷ Some Greek transcriptions represent the Hebrew *pe* with Greek *phi* (i.e. aspirated [p^h]), e.g. εφαδάνω (Theodotion, second century C.E.), εφαδάνω / αφαδάνω (Polychronios, fifth century C.E.). These could be interpreted as reflecting variant reading traditions. The Greek data were supplied by Ben Kantor.

⁵⁸ Steiner (1993).

period of composition right down to the period of the Masoretes, centuries after contact of the transmitters of the tradition with the source language had ceased, demonstrates great conservatism in the Tiberian reading tradition.

Another relevant issue in this context is the pronunciation of the letter *w*, which is read in the Tiberian reading tradition in two ways, distinguished in the vocalization by points, namely either as [ʃ] (*shin*) or as [s] (*sin*), the latter being equivalent to the sound of the letter *v* (*samekh*). It is clear that the reading tradition of *w* differed from the original pronunciation of the letter in the pre-exilic period when Hebrew was first committed to writing, otherwise the letter *v* would regularly appear in the orthography where the reading tradition pronounces the sound [s].⁵⁹ It is noteworthy, however, that roots and words that were

⁵⁹ This orthographic phenomenon can be interpreted in two ways. The pre-exilic *w* may have been pronounced as a single sound, presumably [ʃ], in all contexts. Possible evidence for this is the fact that in the Samaritan reading tradition the letter is always pronounced [ʃ], including where the Tiberian tradition has *sin*. This feature of the Samaritan reading tradition may have its roots in a type of pronunciation that existed side by side with the Tiberian type in the Second Temple Period. Alternatively, the letter *w* in the pre-exilic orthography may have been intended to represent two sounds, which, according to this interpretation, are normally thought to have been [ʃ] and a lateral sibilant resembling the lateral *s* [ɬ] of Modern South Arabian languages. In the Second Temple Period the lateral sibilant would have shifted to [s]. It should be taken into account, furthermore, that both of these alternative types of pronunciation of *w* may have existed in the pre-exilic period. The necessity to use a single letter to

regularly spelt with *sin* in pre-exilic books are occasionally spelt interchangeably with *sin* and *samekh* in later books, e.g.

Ezra 4.5: וְסִכְרִים ‘and they hire’ vs. 2 Chron. 24.12 שִׁכְרִים

The letters *sin* and *samekh* occasionally interchange in proper names in the late books, e.g.

Ezra 4.11: אַרְתָּחֶשֶׁת אֲרַתְּחֶשֶׁת ‘Artaxerxes’ vs. Ezra 7.1 אַרְתָּחֶשֶׁת

Such cases of interchange between the written letters *sin* and *samekh* are sporadic and most likely unintentional deviations from the standard orthography that reflect the interference of contemporary pronunciation.

In Rabbinic literature, the *qere* of *sin* is sometimes referred to as *samekh* and its *ketiv* as *shin*.⁶⁰ In these sources, the reading (*qere*) of the letter *sin* is identified with that of *samekh*. Interchanges of orthography such as וְסִכְרִים and שִׁכְרִים, therefore, constitute another case of the *qere* being datable to the Second Temple Period by orthographic variations internal to the consonantal text.

In some manuscripts with Palestinian and Babylonian vocalization, the letter *sin* is distinguished from *shin* by writing over *sin* a miniature ס (*samekh*) and over *shin* a miniature ש (*shin*) (Revell 1970a, 87; Kahle 1902, 11). In some manuscripts with Palestinian vocalization written in abbreviated form (known as

represent two sounds arose from the fact the alphabet used to write Hebrew was in origin the one that was developed to represent Phoenician, in which the two sibilant sounds in question were not distinguished.

⁶⁰ Steiner (1996).

serugin) a letter *samekh* is written in place of *sin* (Revell 1977, 66).

There is some evidence that the placement of *samekh* over the letter *w* as a diacritical sign for *sin* was an ancient practice with roots in the period in which the *ketiv* was being stabilized, i.e. the Second Temple period. One persuasive case is the variant spellings of the following proper name in the books of Nehemiah and Ezra:

Neh. 7.52. L: נְפִישָׁסִים, *qere* note: נְפִישָׁסִים, i.e. the *qere* is נְפִישָׁסִים.

Ezra 2.50. L: נְפִיסָׁסִים, *qere* note: נְפִיסָׁסִים, i.e. the *qere* is נְפִיסָׁסִים.

If we leave aside the difference between the *ketiv* and the *qere* regarding the medial vowel in this name, the spelling with the added *shin* in Neh. 7.52 could be explained as the result of the fact that the spelling was originally with a superscribed *samekh* over the *w* to indicate that it should be read as *sin*. The *samekh* was subsequently incorporated into the line of the text by scribal error.⁶¹ The reading of the first letter of the sequence *sw* as *shin* is likely to have been a later orthoepic measure to ensure that the two letters were read distinctly (§I.0.11.). The form נְפִיסָׁסִים in Ezra 2.50 with *samekh* is presumably an orthographic variant of the original form נְפִישָׁסִים with *sin*. If this is the correct explanation, then this is further evidence for the equivalence of *samekh* and *sin* at an early period.

It should be pointed out that in *qere* notes in the medieval manuscripts a *sin* of the *ketiv* is spelt *w* and not *s*, e.g.

⁶¹ Cf. Honeyman (1944).

Ezra 4.23. L: אָרְתַּחֲשֵׁשׁ, *qere* note: תְּשֵׁשׁ, i.e. the *qere* is תְּשֵׁשׁ.

Ezra 10.37: L: וַיַּעֲשֵׂה, *qere* note: וַיַּעֲשֵׂי, i.e. the *qere* is וַיַּעֲשֵׂי.

Ezra 10.44. L: נִשְׁאָר, *qere* note: אֲנִשְׁאָר, i.e. the *qere* is אֲנִשְׁאָר.

In such cases, the focus of the *qere* note is not on the *sin* but rather on other letters in the *ketiv*. It may be for this reason that it has not been replaced by *samekh* in the note. Moreover, the purpose of the *qere* notes was to supply an appropriate orthography of the *qere*. Within the norms of the biblical orthography, *ו* was an appropriate orthography of [s] and so there was no need to alter it.

Another indicator that the roots of the Tiberian reading tradition were in the Second Temple period is its close relationship with the Babylonian reading tradition, which is reflected by manuscripts with Babylonian vocalization. This close relationship between two branches of tradition transmitted in different geographical locations is most easily explained through the comparative method of historical linguistics as the result of a common genetic connection in a single location at an earlier period. The most obvious place of origin would be Second Temple Palestine. Just as the written text of both the Babylonian tradition and the Tiberian tradition has its origins in a proto-Masoretic text of the Second Temple Period,⁶² it is likely that there was a proto-Masoretic reading tradition, which likewise split into an eastern and western branch. This proto-Masoretic

⁶² For the phenomenon of the proto-Masoretic text-type in the Second Temple sources see Tov (2012).

reading tradition was clearly distinct from the Samaritan reading tradition, which itself exhibits some features that can be correlated with Second Temple sources, such as the long pronominal forms (*attimma*, *-kimma*).⁶³

As remarked, there is evidence of great conservatism in some elements of the Tiberian reading tradition, such as the *pe* of נִפְרָנֵן (Dan. 11.45), but a comparison of the Tiberian and Babylonian branches of the biblical reading tradition shows that in some features the Babylonian reading appears to be more linguistically conservative. This is shown by the fact the Babylonian tradition sometimes has parallels with earlier sources that are lacking in the Tiberian tradition. For example, the preservation of an /a/ vowel in unstressed closed syllables that is found in the transcriptions of the Septuagint, Origen and Jerome is a feature of Babylonian pronunciation, whereas this vowel is more widely attenuated to /i/ in the Tiberian tradition, e.g. Septuagint Μαβσαρ ‘Mabsar’ (Tiberian: מַבְצָר, 1 Chron. 1.53),⁶⁴ Origen’s Hexapla λαμαλαμα ‘for the battle’ (Tiberian: לְמַלְחָמָה Psa. 18.40),⁶⁵ Jerome: *macne* ‘cattle’ (Tiberian: מַקְנֵה),⁶⁶ Babylonian מַבְצָר [mav's'a:r].⁶⁷ Babylonian corresponds to Origen and Jerome and also to some Qumran texts in preserving the unstressed /o/ vowel

⁶³ Morag (1971), Ben-Hayyim (2000).

⁶⁴ Sperber (1937, 191).

⁶⁵ Brønno (1943, 387).

⁶⁶ Siegfried (1884, 50), Sperber (1937, 192).

⁶⁷ Yeivin (1985, para. 41.46).

in prefix conjugation verbs where it is reduced to *shewa* in Tiberian, e.g. תִּתְבֹּלֵנִי [titbo'le:ni:] (Job 9.31, Tiberian: תַּתְבֹּלֶנִי ‘you will plunge me’);⁶⁸ cf. Origen εφθιλού (= פָּלָה Psa. 18.39),⁶⁹ Jerome *iezbulenī* ‘he will honour me’ (Tiberian: יִזְבְּלֶנִי Gen. 30.20),⁷⁰ and the frequent occurrence of *vav* in the Qumran manuscripts after the second radical of prefix conjugation verbs where Tiberian has *shewa*, e.g. יִקְטוֹלֵהוּ, אַקְטוֹלֵהוּ, יִקְטוֹלֵהוּ.⁷¹

Some features of the Tiberian reading that differ from Babylonian may have developed under the influence of the vernacular Aramaic of the Jews of Palestine. It is not clear whether this applies to the aforementioned features, but we can identify a possible case of influence in the pronunciation of consonantal *vav*. We know from medieval sources that in the Tiberian reading tradition of Biblical Hebrew the default pronunciation of this letter was a labio-dental [v] (§I.1.6.). In Jewish Palestinian Aramaic, *vav* appears to have had the same labio-dental pronunciation. This is shown by the interchange of *vav* and fricative *bet* in Jewish Palestinian Aramaic texts and Rabbinic Hebrew of sources of Palestinian provenance. The fact that fricative *bet* in these texts also sometimes shifts to *pe* due to devoicing shows that it must have

⁶⁸ Yeivin (1985, para. 16.36).

⁶⁹ Janssens (1982, 92).

⁷⁰ Siegfried (1884, 48), Sperber (1937, 158).

⁷¹ Qimron (1986, 50; 2018, 195–196), Reymond (2014, 209–21). For the parallels between these Qumran forms and the medieval Babylonian tradition see Yeivin (1972).

been labio-dental and this implies that *vav* also was labio-dental.⁷² There is also evidence of the pronunciation of *vav* as a labio-dental in Mishnaic Hebrew, in that *vav* in some words corresponds to *bet* in Biblical Hebrew and *vav* and *bet* interchange in the orthography of some manuscripts, e.g.

נִזְלָה ‘he has disfigured her’ (*Sotah* 1.7); cf. Biblical Hebrew נַבְלָל (M. H. Segal 1927, 34–35)

אֲוֹזִים ~ אֲבָזִים ‘geese’ (Bar-Asher 2015, 61–62)

The shift in the pronunciation of *vav* to a labio-dental in Aramaic and Hebrew in late antique Palestine is likely to be due to convergence with a shift of [w] to [v] in Greek at this period (Kantor and Khan forthcoming).⁷³

The Babylonian tradition itself appears to have undergone some change due to the influence of the local vernacular, which resulted in a number of features that differed from Tiberian due to their being innovative rather than conservative. One such feature that is characteristic of the Babylonian pronunciation tradition is the shift of *holem* to *sere*, which is reflected in the vocalized

⁷² A. Ben-David (1960, 255), Kutscher (1976, 16–17), Sokoloff (1968, 30), Epstein (1964, 1223–26). This pronunciation of *vav* can also be reconstructed in the Samaritan tradition of Hebrew (Ben-Hayyim 2000, 33).

⁷³ Possible evidence for the embryonic merging of *vav* and fricative *bet* in Palestine is found already in some Qumran manuscripts, see Qimron (2018, 122) (I am grateful to Noam Mizrahi for drawing my attention to this).

manuscripts by an interchange of these two vowels.⁷⁴ The Karaite scholar al-Qirqisānī writing in the tenth century C.E. attributes this feature to influence from the language of the ‘Nabat’, i.e. the Aramaic speaking population of Iraq.⁷⁵ The fronting of back vowels is still a feature of modern vernacular Iranian dialects in western Iran, including those spoken by Jews (Borjian 2012, 9, §D14).

One aspect of Tiberian vocalization that several scholars have identified as an indicator of the antiquity of the reading tradition is the apparent historical layering of variant types of vocalization of words with the same orthography across different Biblical books. These are differences in vocalization between words in late biblical books and corresponding words in earlier biblical books. In such cases, the vocalization found in the later books often corresponds to a type of vocalization that is characteristic of Rabbinic Hebrew or Aramaic, i.e. languages associated with the language situation in the Second Temple Period rather than the pre-exilic period. In two cases in Chronicles, for example, the *nif'al* of the verb נִלְיָה is vocalized in an unusual way, with *shureq* rather than *holem* and *dagesh* in the middle radical: נוֹלַד ‘they were born’ (1 Chron. 3.5, 20.8). This morphological feature is not found in the vocalization of the earlier books but is found in some traditions of Rabbinic Hebrew.⁷⁶ The vocalization of these forms apparently reflects a dialectal form of morphology

⁷⁴ Yeivin (1985, para. 11.6).

⁷⁵ Cf. al-Qirqisānī (*Kitāb al-‘Anwār w-al-Marāqib*, ed. Nemoy 1939, vol. 2: 140).

⁷⁶ Cf. Yalon (1964, 152–57) and the references cited in Morag (1974, 310).

that was current in the time of the Chronicler. By implication, the vocalization of the earlier books must reflect a different, presumably slightly earlier tradition (Morag 1974). A further example is the difference in vocalization between אָמֵלֶל ‘feeble’ (Psa. 6.3) and הָאָמֵלִים ‘the feeble’ (Neh. 3.34). The vocalization of the noun אָמֵלֶל in the late biblical book reflects the one that is used in Rabbinic sources (Boyarin 1988, 63–64). The dual of the noun קְרֻנִים is vocalized in Hab. 3.4, with the normal pattern of the dual, but קְרֻנִים in Dan. 8 (verses 3, 6, 20), with the pattern of the stem of plural nouns, as is found in early vocalized manuscripts of the Mishnah (Kister 1992, 47, n.9; 1998, 246, n.9). The form עֲרָבִי ‘Arab(ian)’ occurs in pre-exilic sources, whereas the word has the vocalization עֲרָבִי, corresponding to that of Aramaic, in post-exilic sources (Nehemiah and Chronicles) (Steiner 2016, 313). There is a difference in vocalization between הַלְוִידִים (1 Chron. 14.4) and הַלְוִידִים in the parallel passage in 2 Sam 5.14. The word חַבֵּל in the phrase חַבֵּל חַבְלָנוּ ‘we have acted corruptly’ (Neh. 1.7) is vocalized with the vocalic pattern of an infinitive construct in a context where the vocalic pattern of an infinitive absolute may have been expected in earlier books. In Dan. 11.20 the construct of the noun הַדָּר ‘glory’ is vocalized הַדָּר, rather than הַדָּר, which is the vocalic pattern of the construct in earlier books.⁷⁷

Such differences in vocalization across pre-exilic and post-exilic books constitute strong evidence for the argument that

⁷⁷ These last three cases are noted by Jan Joosten, paper delivered at the conference *The exegetical value of the Masora: Pointing and accentuation in historical perspective* (Oxford, 7–8 November, 2016).

there is historical layering in the reading tradition reflected by the medieval vocalization. The variant types of morphophonology in the late books, which often correspond in form to Rabbinic Hebrew or Aramaic, would have become incorporated into the reading tradition of the late books at some point in the Second Temple Period, whereas the variants found in the earlier books must reflect an earlier stage in the development of the biblical reading tradition. Crucially the later types of morphophonology were not extended to the reading tradition of the earlier books.

I would like to explore in greater detail the last point, i.e. the fact that the late morphophonology in the forms in question was not applied uniformly across the reading of all books. We have, in fact, already seen some counterexamples to this phenomenon. Attention was drawn above to the phenomenon whereby innovations in verbal patterns that are characteristic of the Second Temple Period (i.e. shifts of intransitive *qal* to *nif'al* and transitive *qal* to *pi'el*) were extended to the vocalism of the earlier books. There are also cases of exegetical harmonization whereby the vocalism of words in late books is extended to parallel phrases in earlier books that have an orthography reflecting a different meaning. An example of this is the word מִגְרַשָּׁה ‘surrounding pasture-lands’ in 1 Chron. 6. As remarked, the Chronicler is clearly using as his literary source the text of Josh. 21, in which the word is written as a singular form but it is read in the reading tradition as a plural: מִגְרַשֹּׁה. This reflects a later interpretation of an originally singular form as a plural. This ‘later’ interpretation is reflected also by the consonantal text of

Chronicles, where it is written as a plural. The later interpretation has been extended to the reading tradition of the earlier book.

It should be taken into account that there are a number of other variations in Tiberian vocalization within the biblical corpus that cannot easily be correlated with chronological layering.⁷⁸ These include, for example:

- (1) Variations in the use of *dagesh* in the same lexeme such as בָּשֵׂר ‘let it go round’ (1 Sam 5.8) vs. יְסַב ‘it goes round’ (1 Kings 7.15); חֲבֹרֶתִי ‘his wound’ (Isa. 53.5) vs. ‘מִחְבָּרֶתִי ‘my wound’ (Gen. 4.23)
- (2) Variations in *hatef* vowels in the same lexeme, such as יְחַשֵּׁבוּ ‘they consider’ (Isa. 13:17) vs. יְחַשֵּׁבּוּ ‘they conceive’ (Psa. 35:20)
- (3) Variation between *hireq* and *segol* in the same lexeme, as in וְהִגְלַתָּה ‘and he carried into exile’ (2 Kings 24.14) vs. הִגְלַתָּה ‘he carried into exile’ (Jer. 52.28), or at least in the same morpheme, as in וְאַכְבָּדָה ‘and I will be honoured’ (Isa. 49.5) vs. שְׁאַדְרָשָׁה ‘I will be asked’ (Ezek. 36.37).
- (4) Variations between *qibbus* and short *qames* as the reflex of a historical short *u in the same lexeme or in similar contexts, e.g. גָּדוֹלָה (Psa. 150.2) vs. תָּדוֹנָה ‘his greatness’ (Deut. 11.2).
- (5) Occasionally a *hatef qames* occurs in a prefix conjugation verb (imperfect) before a pronominal suffix or a cohortative suffix rather than the normal vocalization with *shewa*

⁷⁸ Several of these were noted by Nöldeke (1912).

in such contexts. This reflects the lack of complete reduction of the vowel that occurs after the second radical in forms without suffixes, e.g. שָׁלַחְתִּי ‘I will plant it (m)’ (Ezek. 17.23), וְאַנְשָׁקָה ‘and I weighed’ (Ezra 8.25), אֶלְקֹנְתָּה ‘let me glean’ (Ruth 2.7).

- (6) Variations between *sere* and *patah* in the stem of *pi'el* verbal forms, e.g. לְמַנְצֵה ‘[who] has brought up?’ (Isa. 49.21) vs. לְמַנְצֵה ‘he made great’ (Josh. 4.14).
- (7) Variations between *hireq* and *sere* before gutturals in *pi'el* verbs, e.g. נָאַר (Lam. 2.7, ‘he has spurned’) vs. נָאַר ‘he has refused’ (Num. 22.13).

The key question is whether the types of variation in Tiberian vocalization discussed above, diachronic and synchronic, have any semantic or exegetical significance.

Some morphophonemic variations are exploited to express distinctions in meaning in various reading traditions of the Hebrew Bible. There are many examples of this in the Samaritan tradition of reading. Typically the pairs of variant patterns of a word in the Samaritan tradition consist of one member that is conservative and another member that is innovative by a process of analogy or assimilation to an Aramaic form, or two members that are originally morphophonemic alternants that have now become distinct in meaning.⁷⁹ Many of these distinctions are between different grammatical categories of lexical items.

⁷⁹ See in particular Florentin (1996) for examples of this phenomenon.

Internal differences in vocalism have developed, for example, between *wayyiqtol* past forms and *yiqtol* non-past forms, e.g.⁸⁰

wtārād ‘and she went down’ (Tiberian וַתֵּרֶד), by analogy with the pattern qāṭāl vs. térad ‘she goes down’ (non-past, Tiberian תֵּרֶד, תָּרֶד)

A morphophonemic distinction is made in the Samaritan tradition between verbal and nominal participles, e.g.

q-w-m ‘to rise’: qā’əm (verbal, based on Aramaic) vs. qam (nominal)

nif‘al form: niqqāṭāl (past verbal, by analogy with imperfect *yiqqāṭəl*) vs. niqtāl (nominal)

There are a number of cases of variants of a single lexeme with and without gemination of one of the consonants to express distinctions in meaning, e.g.

ādāni ‘Lord’ (divine) vs. ādanni ‘master’ (human)⁸¹

ā:sidā ‘the stork’ (animal) (Tiberian הַחֲסִידָה Lev. 11.19) vs. assidāk ‘your pious one’ (human) (Tiberian אַסְיָדָק Deut. 33.8)⁸²

yamən ‘Yamin’ (proper name) (Tiberian יָמִן Gen. 46.10) vs. yammən ‘right hand’ (Tiberian יָמִין).⁸³

⁸⁰ The transcription system of Ben-Hayyim and Florentin is adopted here.

⁸¹ Ben-Hayyim (1957a-77, vol. 4, 8-9, vol. 5, 194; 2000, 260).

⁸² Florentin (1996, 231).

⁸³ Florentin (1996, 234).

wyābād ‘and he perished (past)’ (< *ya’abad, Tiberian יָאַבָּד) vs. yābbād ‘he perishes (non-past)’ (< *ya’bad with assimilation of the /ʔ/ to the /b/, Tiberian יָאַבָּד), i.e. a pair of alternants such as Tiberian יְחִשְׁבֹּן (Isa. 13:17) vs. יְחִשְׁבֹּן (Psa. 35:20) has come to express a difference in meaning.⁸⁴

‘ā:rəm ‘the cities’ (Tiberian הָעָרִים) vs. ‘arrəm ‘cities’ (Tiberian עָרִים)⁸⁵

wāmā ‘and the cubit’ (Tiberian וְאַמֶּה) vs. wāmmā ‘and a cubit’ (Tiberian וְאַמֶּה)⁸⁶

Most of the cases of synchronic variation listed in (1)–(7) above do not appear to have semantic or exegetical significance. Many of these types of variation in the Tiberian vocalization are not found, or only very marginally found, in the Babylonian tradition of vocalization, i.e. the other descendant of what I propose to identify as the proto-Masoretic reading tradition. This is either because the Babylonian tradition is more conservative of the proto-Masoretic reading of the particular feature in question whereas the Tiberian variation is a later development or the Babylonian tradition has levelled variation that has been preserved by the Tiberian tradition. In the list of features (1)–(7)

⁸⁴ Florentin (1996, 218). This particular minimal pair is not attested in the Samaritan Pentateuch, but it can be inferred from the contrasting patterns used for the attested forms of the past and non-past, e.g. wyābādu וְאַבָּד ‘and they perished’ (Num. 16:33) vs. tābbād ‘it becomes lost’ (Deut. 22:3).

⁸⁵ Ben-Hayyim (2000, 92).

⁸⁶ Ben-Hayyim (2000, 92).

above the Babylonian tradition lacks variation in features (3)–(7). In features (3)–(5) it is more conservative and in features (6)–(7) it has levelled earlier variation. These are presented as (3a)–(7a) below:

- (3a) *וְהִגְלָה*, ‘and he carried into exile’ (2 Kings 24.14): *הִגְלָה* [hi^gl^{ah}^h:]⁸⁷

הִגְלָה ‘he carried into exile’ (Jer. 52.28): *הִגְלָה* [hi^gl^{ah}^h:]⁸⁸

וְאַכְבָּד ‘and I will be honoured’ (Isa. 49.5): *וְאַכְבָּד* [w?[?]ikkɔ:^hva:ð]⁸⁹

אָדָרֵשׁ ‘I will be asked’ (Ezek. 36.37): *אָדָרֵשׁ* [?iddɔ:^hra:ʃ]⁹⁰

- (4a) The Babylonian reading tradition normally preserves a historical short **u* where in Tiberian it shifts to short /ɔ/ (*qames*), e.g.

נְדִילָה ‘his greatness’ (Deut. 11.2): *נְדִילָה* [guð^hlo:^h]⁹¹

חֲכֹמָה ‘wisdom’ (Jer. 49.7): *חֲכֹמָה* [huχ^hmɔ:^h]⁹²

⁸⁷ Yeivin (1985, 302). The transcriptions of the examples with Babylonian vocalization are in some cases approximations, since there is uncertainty regarding the precise realization of some of the phonetic segments in the Babylonian pronunciation.

⁸⁸ Yeivin (1985, 144).

⁸⁹ Yeivin (1985, 505).

⁹⁰ Yeivin (1985, 505).

⁹¹ Yeivin (1985, §37.12).

⁹² Yeivin (1985, §37.18).

הָשְׁלַבְתִּי [huʃ'la:χt̚hi:]⁹³ ‘I was cast’ (Psa. 22.11):

- (5a) In the Babylonian reading tradition, it is the norm for the vowel of the prefix conjugation verbal stem to be preserved before suffixes,⁹⁴ e.g.

אֶזְכְּרָנוּ [?izko'ra:nu:] ‘I will remember him’ (Jer. 31.20):

תַּטְבֵּלְנִי [tit̚bo'le:ni:] ‘you will plunge me’ (Job 9.31):

וְנִדְרְשָׁה [wniðro'ʃɔ:] ‘and we will inquire’ (2 Chron. 18.6):

אֶזְכְּרָה [?izko'rɔ:] ‘I will remember’ (Psa. 77.4):

- (6a) In the Babylonian reading tradition it is the norm for the vowel of the final syllable of the 3ms *pi'el* to be *patah*,⁹⁵ e.g.

גַּדֵּל [gid'da:l] Isa. 49.21 ‘he brought up’ OB

בְּקֻשָּׁה [viq'qa:ʃ] Isa. 1.12 ‘he asked’ OB

- (7a) The Babylonian vocalization reflects a tradition in which it is the norm for the vowel to be *sere* before a guttural in the *pi'el*,⁹⁶ e.g.

וְכַחֲשָׁה [wχe:'ha:ʃ] ‘it will deny’ (Job 8.18):

וְכֹהֵן [wχe:'ha:n] ‘and he will serve as a priest’ (Exod. 40.13):

⁹³ Yeivin (1985, §24.1).

⁹⁴ Yeivin (1985, §16.36, §16.45).

⁹⁵ Yeivin (1985, §20.01).

⁹⁶ Yeivin (1985, §20.06).

וַיָּבֹעַ 'and it will graze' (Exod. 22.4): וַיָּבֹעַ [wvə: 'va:r]

נִאֵר 'he has spurned' (Lam. 2.7): נִאֵר [ne: 'va:r]

נִאֵשׁ 'he renounced' (Psa. 10.3): נִאֵשׁ [ne: 'va:s̥]

It is unlikely, therefore, that synchronic variations such as those listed in (3)–(7) had any semantic or exegetical significance in the proto-Masoretic reading tradition, since they are either a later development in the Tiberian tradition without clear semantic significance or were early features but were eliminated in the Babylonian tradition. They were simply cases of internal morphophonemic variation that is common across languages.

The variations in the use of *dagesh* in the same lexeme in the specific examples cited under (1) above do not appear to have any semantic or exegetical significance. It should be noted, however, that several examples of *dagesh* distinguishing the meaning of doublets of the same lexeme or homophonous words can be found in the Tiberian tradition and this has been developed further in the Babylonian tradition. There are, for example, a number of homophonous pairs of words in the Tiberian tradition that are distinguished by *dagesh*. These include cases such as אָבִיר 'powerful' referring to God, used in the construct state in phrases such as אָבִיר יְעַקֹּב 'the Mighty One of Jacob' (Gen. 49.24, Isa. 49.26, Isa. 60.16, Psa. 132.2, 5) vs. אָבִיר 'powerful' used to refer to humans (for further details see §I.3.1.3.).

With regard to pairs of forms from the same lexeme exhibiting a variation between a *hatef* vowel and silent *shewa* (as in יְחִשְׁבֹּן vs. יְחִשְׁבּוֹ), in many such cases there appears to be a metrical motivation for the variation, which will be discussed in

§I.2.5.4. We have seen, however, that in the Samaritan tradition such a variation has been exploited to distinguish meaning in pairs such as *wyābād* ‘and he perished (past)’ (< **ya'abad*) vs. *yābbād* ‘he perishes (non-past)’ (< **ya'bad*). There is, indeed, one isolated example of the exploitation of such variation to express a semantic distinction in the Tiberian tradition, namely the difference in vocalization between the verb **יעקַב** ‘he supplants’ (Jer. 9.3) and the proper name **יעקב**.

Returning now to the list of variant vocalizations from the late books, we should examine whether these had any semantic or exegetical significance. I should like to argue that there are indeed grounds for hypothesizing that many of the examples of such variations were motivated by an attempt to express a semantic distinction. It is relevant to note that these distinctions appear also in biblical manuscripts with Babylonian vocalization,⁹⁷ so they must be attributed to the proto-Masoretic reading tradition. Some examples of semantic distinctions are as follows:

אָמָלֵל vs. **הָאָמָלְלִים** (Neh. 3.34)

All cases of **אָמָלֵל** and its inflections are predicative, most with clear verbal inflection. **הָאָמָלְלִים** is the only nominal form with nominal inflection (functioning as an attributive adjective): **וּפְרִישֵׁי** ‘**מִכְמֻרָת עַל-פְּנֵי-מֵימִים אָמָלְלוֹ**’ ‘and those who spread a net upon the water will languish’ (Isa. 19.8), vs. **אָמָלֵל אָנִי** ‘I am languishing’ (Psa. 6.3), vs. **הַיְהוּדִים הָאָמָלְלִים** ‘the feeble Jews’ (Neh. 3:34). This distinction in vocalism can be compared to the development of a

⁹⁷ Examples of such forms that are attested in the manuscripts can be found in Yeivin (1985, 608, 843, 956, 1050).

distinction in vocalism between verbal and nominal participles in the Samaritan tradition.

נולד/נוֹלָד vs. **נוֹלָדוּ**

Here again, the formal distinction appears to reflect a distinction between verbal and nominal categories. The form **נוֹלָדוּ** is the only inflection of the *nif'al* of **ילך** that has transparent verbal inflection in the biblical corpus: ‘וְאֵלֶּה נֹלָדוּ בִּירוּשָׁלָם’ ‘and these were born to him in Jerusalem’ (1 Chron. 3.5). Other attestations of the *nif'al* of this verb are either in the singular form **נוֹלָד**, which is explicitly adjectival, or **נוֹלָד** with *pataħ* but often used impersonally without agreement with a plural subject, so both may have been interpreted as adjectival, e.g. **הַנָּה-בָּן נֹלָד לְבִתְּחִזְקִיָּהוּ** ‘behold a son is born’ (1 Kings 13.2), **וְאֵלֶּה הַיּוֹם בְּנֵי דָוִיד אֲשֶׁר נֹלָדוּ** ‘These are the sons of David that were born to him in Hebron’ (1 Chron. 3.1).

ילוד vs. **ילֹוד**

There may be a distinction also here between nominal and verbal participles. Targum Jonathan to (2) **וְאֵלֶּה שְׁמוֹת הַיְלִידִים לוֹ בִּירוּשָׁלָם** Sam 5.14) clearly interprets **ילֹוד** as a verbal participle: **וְאֵלֹין שְׁמַת הַיְלֹודִים לְיהִיא בִּירוּשָׁלָם** ‘These are the names of the ones who were born to him in Jerusalem’. The form **ילֹוד** is clearly used as a noun in some contexts, e.g. **הַיְלֹוד הַחַי** ‘the living child’ (noun) (1 Kings 3:26); cf. Targum Jonathan: **רַבְּיָא חַיָּא**. Targum Jonathan to **וְאֵלֶּה שְׁמוֹת הַיְלֹודִים אֲשֶׁר הַיְלֹוד בִּירוּשָׁלָם** (1 Chron. 14.4), the parallel to 2 Sam 5.14, is ‘**וְאֵלֹין שְׁמַת דָּתֵי לִידֵוֹ דָהוֹן מִתְּרֵבֵין בִּירוּשָׁלָם**’ ‘and these are the names of the ones who were born who were being

raised/were adolescents in Jerusalem'. This Targumic rendering of 1 Chron. 14.4 seems to reflect a nominal interpretation of the participle, presumably motivated by the added relative modifier phrase **אֲשֶׁר הִיא**, which would typically take a nominal antecedent.

הַדָּר vs. **הַדָּרָה**

The two forms of these apparently synonymous construct forms in the biblical corpus express a distinction between 'divine glory' (**הַדָּרָה**) and 'human glory' (**הַדָּר**), e.g. 'the glory of His kingdom' (God's glory) (Psa. 145.12) vs. 'glory of the kingdom (human glory)' (Dan. 11.20). As we have seen above, the practice of using gemination to express semantic distinction is often applied to separate the usage of the same lexeme in divine and human contexts, e.g. **אֱבֵיר** (divine) vs. **אֲבֵיר** (human) and examples cited above from the Samaritan and Babylonian traditions.

עֲרָבִי vs. **עֲרָבִי**

There is a distinction in meaning here between 'desert nomad' (**לְאַיִל שָׂט**) and 'a gentilic term of an ethnic group' (**עֲרָבִי**): 'and no desert nomad/Arab will pitch his tent there' (Isa. 13.20) vs. 'גֵּשֶׁם הָעֲרָבִי' 'Geshem the Arab' (Neh. 2.19). One may compare this to the formal distinction in Arabic between *'arābī* 'nomad of the desert' vs. *arābī* 'Arab, Arabian' (ethnic term').

קָרְנִים vs. **קָרְנִים**

The dual form **קָרְנִים** in Daniel chapter 8, which has a characteristically Rabbinic type of vocalization, has the meaning 'horns'.

The form קָרְנִים in Hab. 3.4, which has the normal dual vocalic pattern, has the meaning ‘rays (of light)’. This is the only other place where the word occurs in the biblical corpus as a common noun without a suffix or not in construct. The difference in vocalization, therefore, is likely to express a distinction in meaning between the two forms.⁹⁸

חַבֵּל vs. חַבֵּל

The infinitive absolute form חַבֵּל immediately preceding the cognate verb occurs in Exod. 22.25 as an internal object with the meaning of ‘taking in pledge’: ‘אִם־חַבֵּל תִּחַבֵּל שְׁלֹמֶת רַעַם’ ‘If ever you take your neighbour’s garment in pledge’ (Exod. 22.25). Here the infinitive absolute is an inner object of the verb. It is connected to the verb by a conjunctive accent, which is typical for infinitive absolute internal objects; cf. שׁוֹב אֲשֶׁר literally: ‘I shall return a returning’ (Gen. 18.10). The construction חַבֵּל חַבֵּל נִזְקֵן (Neh. 1.7) differs prosodically from חַבֵּל תִּחַבֵּל (Exod. 22.25) in that the initial form חַבֵּל is separated from what follows by a disjunctive accent. The word חַבֵּל differs from חַבֵּל semantically, in that it is from a different, albeit homophonous, lexical root. Finally it differs from it syntactically according to the interpretation reflected by the early versions, which treat it as an adverbial noun rather than an inner object: LXX διαλύσει διελύσαμεν ‘we have broken with a breaking [covenant]’, Vulgate: *vanitate seducti sumus* ‘we have been seduced by vanity’, rather than nominative active participles, which are the common translation technique of Greek and

⁹⁸ See the remarks of Yeivin (1985, 844, n.74).

Latin for inner objects, e.g. **הַקְרָאֵת נִנְקַרְתִּי** : LXX *κτώμενος κτήσομαι* ‘buying I shall buy’ (2 Sam 24.24).

We may summarize the hypothesis developed above regarding the formation of the reading tradition as follows. The variations in vocalization in the late biblical books are very likely to have had their origin in the language situation of the Second Temple Period. The proto-Masoretic reading tradition of the late books was fixed in the Second Temple Period and the distinctive late forms of vocalization discussed above are likely to reflect features of contemporary vernacular speech. At the time when the proto-Masoretic reading was fixed for the late books, a reading tradition was already in existence for the earlier books. During the Second Temple period, some of the innovative features of the reading of the late books were extended to the earlier books (e.g. the reading of intransitive *qal* verbs as *nif'al* and the transitive *qal* as *pi'el*). Some of the innovative features of the later period, however, were not retroverted into the reading of the same lexemes in the earlier books, but rather the corresponding earlier forms were retained. One factor, perhaps the key factor, that motivated this retention of some of these distinct forms in the reading of the biblical corpus was the desire to distinguish different aspects of meaning or the distinction between homophonous lexemes. There were other cases of variation across the proto-Masoretic reading tradition as a whole, some most likely the result of synchronic language variation. Some of these variations were exploited to distinguish meaning (in particular, gemination). A large proportion of the synchronic

variation, however, did not have any semantic or exegetical significance. Some of this type of variation that survived in the Tiberian tradition was eliminated by levelling in the Babylonian tradition. Moreover, some new variation with no semantic significance developed in the Tiberian and Babylonian reading traditions after the two branches split from the proto-Masoretic tradition. The use of gemination to distinguish meaning within lexemes and between homophonous lexemes was extended further after the Tiberian and Babylonian branches had divided, especially in the Babylonian branch (§I.3.1.3.).

The exploitation of diachronic or synchronic morphophonemic variation to express distinctions in meaning was a form of inner-biblical exegesis. It should be pointed out, however, that similar processes occur in living spoken languages.⁹⁹ One phenomenon that is directly analogous to the issue of diachronic variants discussed here is the phenomenon of doublets, which are found in many languages by a process of retaining older forms alongside new forms of the same lexeme with different meanings. An example from Neo-Aramaic is as follows. In the North-Eastern Neo-Aramaic dialects, a historical **g* develops into /*v*/ or zero /Ø/. So in the Barwar dialect¹⁰⁰ *šagəš ‘to trouble; to dandle (a child)’ developed into šaØəš, which is pronounced šayəš with a glide. The new form šayəš means specifically ‘to dandle, to rock (a child)’. The old form šagəš, however, is retained in the dialect with the meaning of ‘to trouble’. This is a strategy for reducing

⁹⁹ I have described some cases from Neo-Aramaic dialects in Khan (2018a).

¹⁰⁰ Khan (2008, 51–52, 207).

ambiguity in the meaning of a lexeme. Such a development is directly analogous to the hypothesized process described above whereby older forms were retained alongside new forms in the biblical reading tradition during the Second Temple as a strategy to reduce ambiguity and elucidate meaning in the biblical corpus.

I.0.9. THE PRESTIGE OF THE TIBERIAN TRADITION

Despite the fact that there are indications that the Tiberian pronunciation tradition had undergone linguistic change in the course of its transmission since splitting from the proto-Masoretic reading, in the Middle Ages the Tiberian reading tradition was regarded as the most prestigious and authoritative. The medieval sources justify this by the claim that the transmitters of the Tiberian tradition were able to preserve the original reading more accurately since they never left Palestine, unlike the diaspora communities.¹⁰¹ In reality, as we have seen, the Tiberian reading did undergo change and was, in many cases, less conservative than the Babylonian tradition. It is likely that the authoritative-ness of the Tiberian tradition had its roots primarily in its association with the Palestinian *Yeshiva ‘Academy’*, the central body of Jewish communal authority in Palestine, which was based in Tiberias from late antiquity until the Middle Ages.

After the Bar-Kochba revolt in the second century C.E., rabbinic leadership moved to the Galilee. Rabbi Johanan (d. 279 C.E.) established an academy in Tiberias. Subsequently, the

¹⁰¹ Cf. the passages from al-Qirqisānī discussed in Khan (1990c) and the introduction of the long version of the Masoretic treatise *Hidāyat al-Qāri‘* (§II.L.0.3. in the edition in this volume).

Jewish patriarch (*nasi*) relocated from Sepphoris to Tiberias, which transformed Tiberias into the Jewish capital of Palestine. A large number of Jewish sages who were active in Palestine in the Talmudic period studied in Tiberias. The Palestinian Talmud and most of the Aggadic Midrashim were redacted in the city (Rozenfeld 2010, 120–26). After the Islamic conquest of the city in 636, it became the capital of the administrative district known as Jund al-Urdunn. The city flourished between the eighth and tenth centuries, as is witnessed by archaeological records of its urban expansion, incorporating the neighbouring town of Hammamat (Avni 2014, 72–78). During the ninth and tenth centuries, Tiberias was a thriving centre also of Muslim scholarship (Gil 1992, 329–30).

The association of the Masoretes with the Palestinian *Yeshiva* is reflected by the fact some of the Masoretes had direct connections to this academy. One of the known Masoretes was indeed the ‘head of the Academy’, namely Pinhas Rosh ha-Yeshiva (‘head of the Academy’), who lived in the ninth century. We also know of a certain ’Ahiyyahu ha-Kohen he-Haver, whose epithet *haver* indicates that he was a ‘member of the Academy’.¹⁰²

¹⁰² See the *Treatise on the Shewa* edited by Levy (1936, 9), the document published by Mann (1969, 2:43–44) and Gil (1992, 179). The passage in the *Treatise on the Shewa* refers to the Tiberian pronunciation as a tradition that was received from ‘the men of the Great Assembly’ (‘שְׁנָא כְּנָסֶת הַגָּדוֹלָה’), which was the supreme legislative body in Palestine during the Second Temple Period.

The medieval sources describe how teachers from Tiberias would travel to various communities of the diaspora to give instruction in the Tiberian reading and how people from the diaspora communities would travel to Tiberias. We read, for example, in the introduction of the long version of the Masoretic treatise *Hidāyat al-Qāri'*:¹⁰³

‘The people in the communities of the exile would press any teacher who travelled (from Tiberias) to these distant lands to teach their children the reading of the Land of Israel and eagerly imbibed that from him, making him sit down so that they could assiduously learn it from him. Whoever came from the exile to the Land of Israel had a desire for the teaching of the reading of the Land of Israel that was equally ardent as that of those absent [i.e. those just mentioned who received teachers in diaspora lands] and for abstaining from his own (tradition of reading)’.

Similarly, we read in a medieval Karaite commentary on Genesis in a passage concerning Gen. 49.21:

The fact that he compared Naftali to ‘a hind let loose’ (**אִילָה חַלְשָׁה**, Gen. 49.21) is on account of what he foresaw by the help of prophecy, namely that he would be beautiful of voice, excellent in reading, excellent in speaking Hebrew. This is because from the inheritance of Naftali teachers and masters will go forth, such as Ben Asher and Ben Naftali. The Jews of the world follow the reading of these two teachers. This is the reading of Palestine, which has been disseminated throughout the corners of the world. The teachers of it have gone forth to the land of Iraq and other

¹⁰³ Edition in vol. 2 of this book, §II.L.0.4.

places. They have taught people and written many copies (of manuscripts). He compared it (the inheritance of Naftali) here to a ‘hind let loose’, which is beloved and brought up in dwellings that bring ease to the heart, just as is the case with the teachers who were sent from the inheritance of Naftali to the lands of the exile to teach people the reading of Palestine. For that reason, he said ‘a hind let loose’. ... The superbly beautiful reading has its origin in the inheritance of Naftali, namely the town of Tiberias, which is uniquely renowned for this. For this reason, he said ‘which gives words of beauty’ (הנתן אמרין שפָר, Gen. 49.21), since the reading (of Tiberias) is the original one.¹⁰⁴

The prestige and authoritative nature of the Tiberian reading are reflected in various ways.

Many manuscripts with Babylonian vocalization exhibit convergence with the Tiberian tradition of reading, eliminating thereby distinctly Babylonian features. In some manuscripts with Babylonian signs, there is almost total convergence with the

¹⁰⁴ II Firk. Evr. Arab. II 4633, fol. 241r-241v: והמתילה לנפתלי באילה שלו הוא למה נטרה בעון אלנבואה ונה יכון חסן אלקול גיד אלקראה גיד אללגה פי כלאם אלעבראנִי דליך אן מנהלת נפתלי יכרג אלמעלמין ואלאסתהאדין מטלן אשר ובן נפתלי אלדי אהל אלעלם מן אלהו יתבעון קראן הדין אלמעלמין והי קראה אלשאם אלתי אנטסטה פי {אֶד} אפאק אלעלם ואן אלמעלמין מנהא כרגע אליו בלבדן אלעראק וגירהא ועלמו אלנאס וכתבו אלנסך אלכתר ומותלהא פי הדא באילה שלוחה אלמחובבה אלמרבאה פי אלביות אלתי להא אנס פי אלקלב כמו כאן למלעלמין אלדי בעתו מון נחלה נפתלי אליו כל בלבדן אלגלוות ליעלמו אלנאס קראה אלשאם לדליך קאל בעתו ... ואלקראן אלפאכְר אלחסן אצלה מון נחלה נפתלי והוא מדינת טבריה . אלמערופה בהדא دون סואה לדליך קאל הנתן אמרין ש אד אלקראן הו אלאצל This extract was published by Mann (1935, 2:104–5) with some mistakes in reading. The text above is the correct reading of the manuscript.

Tiberian pronunciation tradition and additional signs were even created to ensure a maximally close correspondence.¹⁰⁵

The same applied to Biblical manuscripts with Palestinian vocalization. Many of these represent a reading tradition that is very close to the Tiberian one. This is almost certainly due to convergence, which involved the creation of signs to express vowel quality distinctions that did not occur in the Palestinian pronunciation.¹⁰⁶ It should be noted that the background and status of the Palestinian tradition of pronouncing the Hebrew Bible were different from the Tiberian and Babylonian. When the author of *Hidāyat al-Qāri'* refers to the reading of 'the Land of Israel', he is clearly referring to the Tiberian tradition, not the tradition of reading with Palestinian pronunciation. The term 'the reading of Palestine' (*al-Shām*) in the passage from the Karaite commentary on Genesis is likewise referring to the Tiberian tradition. The Karaite scholar al-Qirqisānī (tenth century Iraq) discusses in his *Kitāb al-’Anwār* the relative merits of the reading of Babylonia (*Irāq*) and the reading of Palestine (*al-Shām*).¹⁰⁷ Here also what is intended is the Tiberian tradition. For al-Qirqisānī the Palestinian tradition of reading was not relevant in his discussion of authority. This appears to reflect the fact that the Palestinian pronunciation was a popular tradition of reading, which had no authoritative roots. Al-Qirqisānī's focus on the Babylonian and Tiberian traditions reflects the fact that only these two traditions had claims to authority. It is likely that this

¹⁰⁵ Yeivin (1985, 77–87).

¹⁰⁶ Revell (1977), Chiesa (1978).

¹⁰⁷ See the passages from al-Qirqisānī discussed in Khan (1990c).

was due to the fact they were both descendants of the original proto-Masoretic reading. Al-Qirqisānī maintains that of these two, the Tiberian is the most authoritative.

The distinctive features of Palestinian pronunciation, which are particularly discernible in the non-biblical manuscripts with Palestinian pronunciation, have close parallels with what is known about the vowel system of Jewish Palestinian Aramaic.¹⁰⁸ Unlike Tiberian and Babylonian, the Palestinian biblical reading is unlikely to be a direct descendant of the proto-Masoretic reading, but rather it has its roots in other traditions of reading that were current in Palestine in antiquity. The Greek transcription in Origen's Hexapla (the middle of the third century C.E.) reflects a reading that has even more evidence of influence from the Aramaic vernacular, especially in the pronominal suffixes, such as the 2ms suffix *-akh*, e.g. σεμαχ 'your name' (Tiberian יְמָח Psa. 31.4).¹⁰⁹ This is also a feature of the Samaritan tradition, e.g. yēdāk 'your hand' (Tiberian: יְדָק).¹¹⁰ Some of these features, such as the Aramaic type of pronominal suffixes, appear in medieval non-biblical texts with Palestinian vocalization. In the second half of the first millennium, however, it appears that the popular biblical reading converged to a greater extent with the prestigious Tiberian tradition. As a result, the Aramaic type of suffixes were eliminated in the biblical reading.¹¹¹

¹⁰⁸ Fassberg (1991, 28–57).

¹⁰⁹ Brønno (1943, 110, 196–200).

¹¹⁰ Ben-Hayyim (2000, 228).

¹¹¹ Yahalom (1997, Introduction).

Various features deviating from the Tiberian reading tradition that are found in the earlier biblical traditions are rarely attested in the medieval biblical traditions but are found in non-biblical Hebrew texts. This applies, for example, to the forms of the 2ms suffixes without a final vowel in Origen and Jerome, and indeed in the consonantal text that is found already in the proto-Masoretic biblical manuscripts from Qumran (ג-, ת-), which is a feature that surfaces in some traditions of post-biblical Hebrew (Ben-Hayyim 1954, 27–32, 63; Kutscher 1979, 442–43; Fassberg 1989), including biblical quotations within non-biblical Hebrew texts (Yahalom 1997, 24). The gutturals are clearly weakened in some biblical texts from Qumran and are omitted or interchanged in the orthography (Fassberg 2013, 665), but in the medieval biblical texts one does not find evidence of such systematic breakdown of distinctions. In non-biblical texts, on the other hand, there is evidence of such a weakening. In *piyyutim*, for example, ֙ often rhymes with ֘, and likewise ֚ rhymes with ֛, reflecting a weakening of the pharyngeals to laryngeals (Yahalom 1985, 173). In *piyyut* manuscripts with Palestinian vocalization segolate nouns ending in a guttural often have an ‘e’ vowel in the last syllable without a furtive *patah* (e.g. מֶלֶח meleħ ‘salt’, Tiberian: מְלָח) (Yahalom 1997, 25), again reflecting the weakening of the guttural.

Another indicator of the prestigious nature of the Tiberian reading tradition is the fact that the early traditions of Hebrew grammar that emerged in the tenth century, i.e. those of Saadya Gaon and the Karaite grammarians, were based on the Tiberian

reading.¹¹² The grammarian Ibn Janāḥ (eleventh century Spain) states that the Tiberians were ‘the most eloquent of the Hebrews in language and the most lucid’.¹¹³

Finally, there is evidence in some sources of hypercorrections in the production of the Tiberian reading. These reflect situations in which a reader’s pronunciation of Hebrew differs from the standard Tiberian pronunciation, due to it belonging to a different tradition¹¹⁴ or being influenced by a vernacular language, but the reader nevertheless attempts to pronounce words with the Tiberian pronunciation due to its prestige. In some cases, this results in producing distinctive features of Tiberian pronunciation that are used in the incorrect context (see chapter 4 for details).

I.0.10. THE INTERNAL DIVERSITY OF THE TIBERIAN TRADITION

There was not complete uniformity in any of the traditions of reading reflected by the vocalization systems. This applied also to the Tiberian school. We have seen (§I.0.8.) that there are inconsistencies in the Tiberian vocalization across different parts of

¹¹² Dotan (1997), Khan (2000b; 2000a). Some features of Babylonian pronunciation sporadically appear in the works of the eastern grammarians such as Saadya (Dotan 1997, 39) and the Karaites (Vidro 2011, 131–36).

¹¹³ *Kitāb al-Luma‘* (ed. Derenbourg 1886, 29): *הָם אֲפִצָּח אַלעֲבָרָא נִין לְסָאָנָא וְאַכְתָּרָהָם בֵּיאָנָא.*

¹¹⁴ For examples of such hypercorrections in manuscripts reflecting a Tiberianized Babylonian tradition see Yeivin (1985, 185).

the Hebrew Bible. There were also various streams of tradition in the Tiberian Masoretic school that differed from one another in the reading and vocalization of particular words. The monumental Hebrew Bible manuscript codices with Standard Tiberian vocalization that have survived from the Middle Ages exhibit minor differences in vocalization of this nature. This applies even to manuscripts that were written by the same scribe.¹¹⁵ Minor differences between vocalization practices of Masoretes and differences in the vocalization of codices are referred to also in Masoretic notes and Masoretic treatises. The tradition of vocalization reflected in the Standard Tiberian manuscripts was, however, far more uniform than other non-Tiberian traditions. This was the result of greater efforts of standardization of the Tiberian tradition due to its greater authoritative status. The standardization process is reflected in particular by Masoretic treatises collating differences between Masoretes, the best known being the ‘Book of Differences’ (*Kitāb al-Khilaf*) of Misha’el ben ‘Uzzi’el, who was active in Jerusalem at the end of the tenth or early eleventh century.¹¹⁶ This work concerned differences between the two

¹¹⁵ Examples of this are manuscripts written by the scribe of L, Samuel ben Jacob, who has been identified as the scribe of several other early Bible manuscripts. These manuscripts exhibit minor differences in vocalization among themselves. See Phillips (2016; 2017; 2020).

¹¹⁶ Lipschütz (1964; 1965). A manuscript preserved in the Karaite synagogue in Cairo (known as C3) contains the inscription אָנָי מִשְׁאֵל בֶּן עַזְّיאֵל Misha’el ben ‘Uzz’iel ben Yoseph ben Hillel checked this holy Torah in the enclosure of ben Bakhtavah, may God have mercy on him’ (Gottheil 1905

foremost Masoretic authorities at the end of the Masoretic period in the first half of the tenth century, Aharon ben Asher and Moshe ben Naftali. This lists disagreements between Ben Asher and Ben Naftali in 867 specific places and agreements of Ben Asher and Ben Naftali against another, usually unnamed, authority in 406 places. Most of these relate to differences in very small details. The majority of the disagreements concern the minor *ga'ya* (i.e. *ga'ya* on a short vowel in a closed syllable) and *shewa ga'ya* (i.e. *ga'ya* written on *shewa*) (§I.2.8.2.2., §I.2.9.). A few relate to spellings, divisions of words, and vocalization. Several of these are listed by Misha'el in the introduction as general differences rather than relating to specific passages. Ben Asher, for example, vocalized a preposition ל or ב with *shewa* when it was followed by *yod* with *hireq* (e.g. לִישְׁרָאֵל 'for Israel'), Ben Naftali, on the other hand, vocalized the first letter with *hireq* with no vowel on the *yod* (לִישְׁכָּר). Whereas Ben Asher vocalized יִשְׁשָׁכָּר 'Issachar', Ben Naftali vocalized this name יִשְׁשָׁכָר. Another Masorete, Moshe Mohe, vocalized it יִשְׁשָׁכָר. Ben Asher vocalized the *kaf* in all forms of the verb אָכַל 'to eat' before *segol* with *hatef patah*, e.g., תְּאַכְּלָנָה 'you will eat it' (Ezek. 4.12), reflecting the reading of the *shewa* as mobile, whereas Ben Naftali read the *shewa* in all such cases as silent (§I.2.5.7.5.). The purpose of the collation of differences

no. 18; Penkower 1989). This is likely to be the Misha'el who was the author of *Kitāb al-Khilaf*. The scholarly institution known as the enclosure of ben Bakhtavaiah was founded by Yūsuf ibn Bakhtavaiah (also known as Yūsuf ibn Nūḥ) in Jerusalem at the end of the tenth century and was the hub of Karaite scholarship there in the first half of the eleventh century.

was to impose a degree of standardization on the Tiberian Masoretic tradition, which had developed into a number of heterogeneous sub-schools by the tenth century, of which those of Ben Asher and Ben Naftali were regarded as the most authoritative. The readings of Ben Asher in *Kitāb al-Khilaf* conform very closely to the readings of the manuscript A, which was produced by Ben Asher, and also to L, which contains many erasures and corrections that made the correspondence closer than was originally the case. The Ben Naftali readings conform closely to C.¹¹⁷

At the close of the Masoretic period in the tenth century and the early eleventh century, the traditions of Ben Asher and Ben Naftali were considered to be equally authoritative. Misha'el ben 'Uzzi'el does not give priority to Ben Asher or Ben Naftali in *Kitāb al-Khilaf*. In his Masoretic treatise *Hidāyat al-Qāri'*, 'Abū al-Faraj Hārūn, likewise, does not give priority to either one of these two authorities. It is significant, however, that according to one passage in this treatise a reader should not mix the traditions according to personal assessment of correctness of the reading of individual words in each tradition. One should adopt either the tradition of Ben Asher in its entirety or that of Ben Naftali in its entirety:

‘The reader, therefore, has two options. Either to read with the reading of Ben Naftali, in which case he must read all good and difficult forms that he (Ben Naftali) reads, or to

¹¹⁷ For differences between other Tiberian Masoretes see *Diqduqe ha-Te'amim* (ed. Dotan 1967, 139–40), Levy (1936, ל-א-ל), Mann (1969, 2:43–44), Lipschütz (1965, 5), Yeivin (1981).

read with the reading of Ben Asher, which also is authoritative. If somebody reads what he deems to be the best reading of this one and of that one, he would (read) without any rule, because he deviates from the rationale of each of them.¹¹⁸

The lack of ranking of these Masoretic authorities was the practice among Masoretic scholars until the time of Maimonides, who declared Ben Asher to be the most reliable authority. David Qimḥi (d. 1235), it seems, was the first who decided in favour of Ben Asher in the context of reported differences between Ben Asher and Ben Naftali (Lipschütz 1965, 4).

The fact that the *Kitāb al-Khilaf* rarely mentions vowels and accents implies that their reading was virtually entirely fixed in a tradition over which there was consensus among Masoretic authorities. A passage in an anonymous Masoretic treatise discussing the cantillation of the Tiberian accents indicates that the way the accents are read has been transmitted ‘from the hearts of the two masters (*'al-'ustādhayin*)’, i.e. Ben Asher and Ben Naftali, and they cannot be explained, i.e. their form is fixed by tradition and readers cannot exercise any personal initiative with regard to them:

‘As for all the other accents, every one of them has a single melody that does not change for any reason, either lengthening or shortening, as is the case with pronouncing a vowel and shortening it. It is not possible to explain how

¹¹⁸ Long version of *Hidāyat al-Qāri'*, edition in vol. 2 of this book, §II.L.1.7.11.

they are read, because they are melodies transmitted from the hearts of the two masters.¹¹⁹

This passage makes it clear that the ultimate bases of authority of the reading were Ben Asher and Ben Naftali. This can be compared to the way reading traditions of the Qur'ān (*qirā'āt*) were anchored to the authority of particular scholars.

Although readers had to adhere to the traditions of Ben Asher and Ben Naftali in most details of their reading without personal initiative, the masters themselves did, it seems, take some degree of personal initiative in fixing their traditions. This applies in particular to Ben Naftali, whose reading tradition exhibits more consistency in various features than the more conservative tradition of Ben Asher. In some places, for example, Ben Naftali has introduced pausal forms where they are not found in the Ben Asher tradition, with the result that their distribution in his reading is more consistent than they are in that of Ben Asher (A. Ben-David 1957b). Ben Naftali, moreover, introduced various orthoepic measures into his tradition to ensure a greater accuracy of reading (§I.0.11.).

The focus on minor *ga'ya* and *shewa ga'ya* in the lists of *Kitāb al-Khilaf* indicates that these details also formed part of the fixed sub-traditions of Ben Asher and Ben Naftali. The fixing of the vowels, accents, minor *ga'ya* and *shewa ga'ya* is reflected by the fact that there is only minimal variation in these features across the model Masoretic Tiberian Bible manuscripts. By the

¹¹⁹ ואما באקי אלטעמים נמיעה כל ואחד מנהא לה לחן: CUL T-S NS 301.21: ואלה לא יתגיר מן סבב שי אמא תטול או תקציר וכדך פי אלהחריך ופי אלכטף ולא يمكن שרווחהא כיף תקרה لأنהא אלחאן תנקל מן צדור אלאסתהדיין.

end of the Masoretic period, however, not every detail had been completely fixed and there was some permitted variation in the sign system and also some variation in the oral reading. This applied in particular to the writing of *hatef* signs on non-guttural consonants and the pronunciation of major *ga'ya* (i.e. *ga'ya* on long vowels) in the oral reading, as expressed by the following passages from *Hidāyat al-Qāri'*:

The people responsible for this matter have agreed on the rule of combining *shewa* and a vowel (i.e. writing *hatef* signs) only under the four (guttural) letters. It is said, however, that some scribes wanted to remove uncertainty from places that may lead to error and have combined a vowel with *shewa* (under a non-guttural letter) ... because they thought that people would err in the reading ... This is an exception to their customary practice. What supports the claim that this is the view of only some of them with regard to letters not belonging to the group of the four (guttural letters) is that in most codices one does not find what has been presented as counterevidence (i.e. the combination *shewa* with a vowel under non-guttural letters), but all codices are uniform in the combination of *shewa* with a vowel under the four (guttural letters) letters.¹²⁰

¹²⁰ Long version of *Hidāyat al-Qāri'*, edition in vol. 2 of this book, §II.L.2.12.6. Differences between scribes regarding the writing of *hatef* signs under non-guttural consonants is referred to also in the earlier Masoretic treatise *Diqduqe ha-Te'amim*, which is attributed to Aharon ben Asher (ed. Dotan 1967, sec. 19).

The *ga'ya* does not have a definite status in the reading of Scripture. One reader may omit it and another reader may sustain it.¹²¹

This is also reflected by the model Tiberian Masoretic Bible codices, which exhibit a greater degree of variation in the writing of *hatef* signs on non-guttural consonants (§I.2.5.5.) and the marking of major *ga'ya* than in features that had been fixed, such as vowels, accents, minor *ga'ya* and *shewa ga'ya*.

I.0.11. ORTHOEPY

The variation in the marking of *hatef* signs on non-guttural consonants reflects the continual efforts that were made to refine the vocalization system to ensure accurate reading towards the end of the Masoretic period. By combining a vowel sign with a *shewa* sign, the *shewa* was unambiguously marked as vocalic, which removed potential ambiguity of the sign in the vocalization system and so reduced the risk of inaccurate reading (§I.2.5.5.). Another measure to ensure correct reading of vowel length that is occasionally found in standard Tiberian manuscripts is the use of *hatef* signs in unstressed closed syllables to mark explicitly that the vowel is short. A few examples of this are found in L, e.g. בְּחֶרְמָתָךְ ‘on the magicians’ (Exod. 9.11), הַעֲרָבִים ‘the evening’ (Exod. 30.8), יְזָקֵנוּ ‘they are strong’ (2 Sam. 10.11), יְעַבְּרֶךָ ‘he brings trouble on you’ (Josh. 7.25) (§I.2.5.1.).¹²²

¹²¹ Long version of *Hidāyat al-Qāri'*, edition in this vol. 2 of this book, §II.L.3.1.

¹²² The phenomenon in L is described by Dotan (1985).

It is important to distinguish these differences in notation with regard to the clarity of representation of the reading from the existence of genuine differences in the reading between Masoretes that are reflected in works such as Misha'el ben 'Uzzi'el's *Kitāb al-Khilaf*.

I would like to focus here in particular on another development that took place within the Tiberian tradition, namely an increasing effort to pronounce the reading with maximal clarity, a phenomenon that I shall call orthoepy. Such orthoepic measures are sometimes not discernible from the vocalized text and can only be reconstructed from external sources, in particular transcriptions and Masoretic treatises.

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. These elements include letters, vowels, syllables and words.¹²³

One orthoepic measure was to minimize the number of separate orthographic words that had no accent and so were at risk of being slurred over. The Tiberian tradition, in general, is more orthoepic in this respect than the Babylonian tradition through the Tiberian practice of placing conjunctive accents on orthographic words between disjunctive accents. In the Babylonian tradition, there are only disjunctive accents and the words between these are left without any accent (Shoshany 2003; 2013). The vocalization of some words that have acquired conjunctive accents in the Tiberian tradition reflects their

¹²³ This phenomenon corresponds closely to the careful recitation of the Arabic Qur'ān known as *tajwīd* (Nelson 2001).

originally unstressed status. This applies to stressed construct forms such as ‘**דְּבָר הַשִּׁמְעָה**’ ‘the matter of the release’ (Deut. 15.2), and cases such as ‘**אֶת גָּאוֹן יַעֲקֹב**’ ‘the pride of Jacob’ (Psa. 47.5), ‘**כָּל אֶחָיו-**
‘**רֶשֶׁת**’ ‘all the brothers of a poor man’ (Prov. 19.7), where the object marker and the quantifier have the vocalization characteristic of their unstressed form (‐אָ and כָּל‐) rather than of their stressed form (אָת and כָּל).¹²⁴

There are still, however, a sizeable number of orthographic words in the Tiberian tradition that have no accent and are connected to the following word by the *maqqef* sign. The lists of differences in *Kitāb al-Khilaf*, however, show that Ben Naftali in a number cases read a word with a conjunctive accent where Ben Asher read it with *maqqef* (A. Ben-David 1957b, 391–92), e.g.

Lev. 24.16

Ben Asher: בְּנַקְבּוֹ שֵׁם, Ben Naftali: בְּנַקְבּוֹ‐שֵׁם ‘when he blasphemes the Name’

Gen. 39.6

Ben Asher: יְפֵה תָּאֵר, Ben Naftali: יְפֵה‐תָּאֵר ‘beautiful in form’

Job 12.3

Ben Asher: וְאַת‐מֵי‐אָנָן, Ben Naftali: וְאַת‐מֵי‐אָנָן ‘with whom is not?’

This and other features of Ben Naftali’s tradition, some of which are discussed below, indicates that he introduced more

¹²⁴ Cf. the long version of *Hidāyat al-Qāri’i*, edition in vol. 2 of this book, §II.L.3.2.

orthoepic innovations in the reading than Ben Asher, who was, in general, more conservative.

The orthoepic measures taken to separate prosodically words connected by *maqqef* sometimes resulted in reading a word as prosodically separated even when the *maqqef* sign continued to be written. One clear example of this is the reading of the word מַה־ vocalized with *patah* and connected by *maqqef* to the following word, the first letter of which has *dagesh*, e.g. וְמַה־דִּבֶּר ‘and what did he say’ (Jer. 23.35). It is clear that the *patah* in this particle originally developed due to its prosodic and syllabic bonding with the following word, and this is reflected by the *maqqef*. It continued, however, to be written as an orthographically separate word. In order to ensure that the orthographic distinctness was expressed clearly in pronunciation one of two orthoepic strategies were followed, both of which are reflected by transcriptions of the Tiberian reading into Arabic script. The most common strategy was to lengthen the *patah*, e.g. מַה־תְּצַחַק [ma-tt^his^ːtsaq] ‘Why do you cry?’ (Exod. 14.15). Another strategy was to glottalize the *patah* vowel by pronouncing an [h] after the vowel, which separated syllabically from what followed, e.g. מַה־שָׁמֵן [mah-ʃ̚a'mo:] ‘What is his name?’ (Exod. 3.13) (for further details see §I.2.8.1.2., §I.2.11.).

Various orthoepic measures were taken to ensure that adjacent letters in contact were enunciated clearly and not slurred together. Here again, these measures were more developed in the tradition of Ben Naftali than in that of Ben Asher. According to *Kitāb al-Khilaf*, Ben Naftali placed a *dagesh* in the first *nun* of the name נָנָא in the combination בְּנָנָא (ed.

Lipschütz 1965, כד). This was a measure to prevent the coalescence of two identical letters across a word-boundary, by strengthening the second letter, which stood at the onset of a syllable. Another strategy to keep the articulation of adjacent identical letters separate is seen in Ben Naftali's reading of the name Issachar יִשְׁשָׁכָר. In Ben Asher's tradition the second and third letter of the name are pronounced as a geminate *sin*: יִשְׁשָׁכָר [jissəχər]. The form יִשְׁשָׁכָר [jissəχər] of Ben Naftali looks, *prima facie*, to be a more archaic form, corresponding more closely to the *ketiv* and perhaps to proposed etymologies of the name such as as 'there is hire' or אִישׁ שָׁכָר 'man of hire'.¹²⁵ It is possible, however, that the pronunciation of the second letter of the name as *shin* was an intentional dissimilation as an orthoepic strategy to keep it distinct from the *sin*. A similar process seems to have taken place in the name נַפּוֹשִׁים in Neh. 7.52. Here the first letter in the sequence נַפּוֹשִׁים is likely to have been a *sin* and this was dissimilated to *shin* by an orthoepic process to keep it distinct from the following identical sounding *samekh* (cf. the discussion of the form of this name in §I.0.8.).

Ben Naftali marked a *dagesh* in the *qof* of the verb יַעֲקֹב 'he supplants' (Jer. 9.3) (ed. Lipschütz 1965, לג) as a orthoepic strategy to ensure that the *shewa* on the preceding guttural was read as silent, and therefore not confused with the more common proper name יעקב 'Jacob'. A related orthoepic measure that developed in the Tiberian tradition, which is not attributable to any specific subtradition, is what I call the extended *dagesh forte*

¹²⁵ See for example Skinner (1994, ad loc.).

reading. This involved pronouncing the *dagesh lene* of בגדכפת letters at the beginning of syllables as *dagesh forte* (§I.3.1.11.3.). The extended *dagesh forte* reading arose by giving the *dagesh* 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 בגדכפת letters. Another effect of strengthening the pronunciation of the *dagesh* was to mark a clear separation between syllables.

The orthoepic features of the Tiberian reading have a variety of different historical depths. The orthoepic practices that we have examined so far appear to be developments that took place in the later stages of the transmission of the Tiberian reading, probably around the end of the Masoretic period in the tenth century. It is possible to identify some orthoepic measures, however, that have a greater time depth. One such case is the lengthening of the vowel of prefixes of the verbs חיה and חייה (§I.2.10.), e.g. תחיה [t^hi·hje:] ‘it will be’ (Jer. 7:34), יחייה [ji·hje:] ‘let him live’ (Neh 2:3). The lengthening of the vowel of the prefixes in the verbs חיה and חייה is likely to have been an orthoepic measure taken to ensure that the initial guttural consonants were not weakened. If these consonants were weakened, the two verbs would not be formally distinguished. There is evidence that this particular orthoepic feature has deep historical roots that can be traced to the proto-Masoretic reading in Second Temple Palestine before the split of the Tiberian and Babylonian branches (see §I.2.10. for details). It arose as a measure to ensure that the gutturals were not weakened in these verbs at a period when gutturals were vulnerable to weakening under the influence of

Greek. It would appear, therefore, that orthoepy was already a feature of the ancient reading and that care over the oral reading of the text went hand in hand with care over the copying of the written text at an ancient period, presumably within Temple circles during the Second Temple period.

I.0.12. THE CLOSE OF THE TIBERIAN MASORETIC PERIOD

The activities of the Tiberian Masoretes came to an end in the tenth century after the generation of Aharon ben Asher and Moshe ben Naftali. The archaeological record shows that Tiberias was almost deserted in the second half of the eleventh century. This seems to have been due to the combined effect of devastating earthquakes in 1033 and 1068 and the political instability caused by the Seljuk raids into Palestine in the middle of the eleventh century. When the Crusaders invaded Palestine in 1099, Tiberias was a half-ruined city (Avni 2014, 87–88; Gil 1992, 397–418). The cessation of the activities of the Masoretes, however, occurred before this decline of the city in the tenth century, when, it seems, the city was still thriving. The key factor that brought about the end of the Masoretic school is likely to have been the removal of the Palestinian *Yeshiva* to Jerusalem, which can be dated to the middle of the tenth century.¹²⁶

The knowledge of the Tiberian reading tradition, which was the most prestigious form of pronunciation, rapidly fell into oblivion after this period. During the period in which the Tiberian Masoretes were active, the oral tradition of Tiberian reading was transmitted alongside the vocalization sign system.

¹²⁶ Gil (1992, 499–500), Wechsler (2013).

As we have seen, the sign system, indeed, was constantly being refined to represent the reading with maximal accuracy. This is clear, for example, in the many added *hatef* signs under non-guttural consonants in A, which was vocalized by Aharon ben Asher in the Masoretic period. The oral reading tradition was primary and the sign system was a mechanism of graphic notation.

Bible codices, of course, also had the consonantal text (*ketiv*). In the Talmudic period, a practice developed of interpreting Scripture on two levels, one according to the consonantal text (*ketiv*) and one according to the way it was read (*qere*). It is reflected by the Talmudic dictum יesh am lemkara vish am lemsoora ‘The reading has authority and the traditional text has authority.’¹²⁷ Traces of this type of exegesis are found in medieval sources. It was a practice that was condemned by many medieval Karaites, who recognized the authority of only the reading tradition.¹²⁸ This is reflected not only in their rejection of exegesis on the basis of the *ketiv*. They used vocalized codices rather than scrolls for liturgical reading.¹²⁹ Moreover, in many cases they dispensed with the Hebrew *ketiv* altogether and wrote biblical

¹²⁷ Naeh (1992; 1993), who argues that this exegetical technique was not practiced in the Rabbinic tradition before the Amoraic period.

¹²⁸ A vocal exponent of this was the Karaite al-Qirqisānī, see Khan (1990c) and §I.0.13.3. Some medieval Karaite scholars did, however, accept the possibility of interpreting according to the *ketiv* where it conflicted with the *qere*, see al-Fāsi, *Kitāb Jāmi‘ al-’Alfāz* (ed. Skoss 1936, vol. 1, 12-13), Hadassi (Bacher 1895a, 113) and Habib (2020).

¹²⁹ Allony (1979).

manuscripts that consisted of Arabic transcriptions of the reading tradition.¹³⁰

The Karaite grammarian *'Abū al-Faraj Hārūn*, who wrote his works in Jerusalem in the first half of the eleventh century, states in the introduction to his Masoretic treatise *Hidāyat al-Qāri'* that his sources were earlier Masoretic treatises and the pupils of the writers of these earlier treatises.¹³¹ This indicates that he had access to an oral tradition of instruction in the Tiberian reading that was still alive in his time in Jerusalem. Karaite scholars in Jerusalem in the eleventh century were, in many respects, the heirs of the Masoretic school. It was in Jerusalem in the early eleventh century that Misha'el ben 'Uzzi'el, who was also a Karaite, composed his work *Kitāb al-Khilaf*, which recorded differences between the Masoretes Aharon ben Asher and Moshe ben Naftali (Penkower 1989).

Already at this period, however, Hebrew grammarians outside of Palestine were not able to gain direct access to the oral tradition of Tiberian reading. Ibn Janāḥ writing in the first half of the eleventh century in Spain, for example, laments the fact that he was not able to verify the length of particular occurrences of *qames* vowels in the Tiberian tradition:

‘In such places [i.e. in the reading of the biblical text] and others like them, a person needs readers and teachers [of

¹³⁰ Khan (1992b).

¹³¹ Edition in vol. 2 of this book, §II.L.0.9.

the Tiberian tradition], which we lack in this country of ours.¹³²

After the close of the Masoretic period and the death of the primary Masoretic authorities Ben Asher and Ben Naftali, the anchoring of the written vocalization signs to authoritative oral traditions was broken. The primary base of authority began to shift to the vocalization sign system, which was the textualization of these oral traditions. Only the oral reading of Masoretic authorities such as Ben Asher and Ben Naftali was independent of the vocalization vowel system. This is the import of the following passage in *Hidāyat al-Qāri'*:

Indeed there is no doubt that when somebody takes a simple codex without accents or pointing, he stumbles in the reading ... apart from a few exceptional people that are found in some generations, such as Ben Asher and Ben Naftali in their time and those like them.¹³³

As the orally transmitted Tiberian reading was lost and the primacy of its authority was transferred to the written sign system, the signs were read with reading traditions that differed from the Tiberian tradition. The incipient signs of this are found

¹³² פפי הודה אללמואצע ווגירהא מותלהא ייטר אלאנסאן אליל אדרואו אוצחאב אלתלקיין, *אלדין עדמנאיהם נחן פי קאציתנא הודה*, *Kitāb al-Luma'*, ed. Derenbourg (1886, 322–23). Ibn Ezra states that ‘scholars of Egypt and [North] Africa’ (חכמי מצרים ואפריקייא) knew how to pronounce the Tiberian *qameṣ* correctly; cf. *Sefer Ṣahot* (ed. Lippmann 1827, 3b). This was presumably referring to his own time, i.e. the twelfth century.

¹³³ Long version of *Hidāyat al-Qāri'*, edition in vol. 2 of this book, §II.L.3.0.

in a variety of medieval manuscripts in which standard Tiberian vocalization is written under words with another vocalization system.¹³⁴ These can be interpreted as reflecting the tolerance of two traditions of written vocalization alongside each other in a way that can be compared to the apparent tolerance of different written textual traditions alongside each other in some Qumran manuscripts, which has been alluded to above (§I.0.2.).¹³⁵ It is clear from the medieval sources that one of the traditions in such manuscripts, viz. the Tiberian, was more prestigious.

One of the consequences of the shift of authority to the written vocalization and accent sign systems after the loss of the Masoretic authorities who were guarantors of the oral tradition was the increasing production and reliance on Bible codices that recorded the authoritative sign systems.¹³⁶

In most communities other than Yemen the oral traditions that came to be used to read the standard Tiberian vocalization were derived ultimately from the Palestinian pronunciation of Hebrew, with a five vowel system (without distinctions between *qames* and *pataḥ*, on the one hand, and *sere* and *segol*, on the other) that was based on that of Jewish Palestinian Aramaic. As we have seen, the Palestinian pronunciation tradition had no

¹³⁴ In the Genizah Bible manuscript T-S A38.10, for example, the scribe has vocalized the text with both Babylonian and Tiberian signs.

¹³⁵ A similar situation is found in some early Qur'ān manuscripts in which the vocalization records different reading traditions, distinguishing them with different colours of ink (Dutton 1999; 2000).

¹³⁶ See Outhwaite (2018) for discussion of the commissioning and production of codices.

authoritative roots, but this was not relevant after the transition of the authority of the Tiberian tradition from the oral reading to the written sign system. It was the written sign system that now preserved the authoritative standard. This meant that the process whereby the Palestinian pronunciation was adapted to converge with the standard Tiberian pronunciation, which is reflected in manuscripts with Palestinian vocalization signs, now no longer took place.

It is unlikely that the removal of the Palestinian *Yeshiva* from Tiberias was the only factor that brought about the loss of the oral Tiberian reading tradition. Another factor is likely to have been that it was transmitted by a very small number of elite practitioners. A related issue was that the conservative Tiberian tradition and its highly careful orthoepic features deviated in various ways from the spoken vernacular languages of the Jewish communities. The Palestinian pronunciation of Hebrew, by contrast, was very widely used and was closer to the vernacular. As remarked, the vowel system of the Palestinian pronunciation had its roots in that of Jewish Palestinian Aramaic, which was the vernacular of the Jews in the early Islamic period. When the Jews of the region adopted Arabic as their vernacular, this rapidly had an impact on the Palestinian pronunciation tradition. In regions where the Arabic dialects did not have interdental fricatives (θ and δ), for example, there is evidence that already in the Middle Ages the Hebrew consonants *tav* and *dalet* came to be pronounced as stops (*t* and *d*) in all contexts (§I.4.2.) (Khan 1997).

Developments in the transmission of the Qur'ān in the tenth century may also have had an impact on the fate of the Tiberian reading tradition. At this period an official policy, endorsed by the ruling 'Abbāsid régime, was instigated by the scholar Ibn Mujāhid (d. 324 A.H./936 C.E.) to reduce the number of reading traditions of the Qur'ān.¹³⁷ Before the time of Ibn Mujāhid, a very large number of reading traditions of the Qur'ān existed. Many of these were transmitted by only a small number of readers. As a result of the activity of Ibn Mujāhid, the traditions with restricted numbers of transmitters were eliminated in favour of seven canonical traditions that had wide levels of transmission. Some of the smaller traditions that were lost exhibited unusual features that deviated from normal Arabic usage. One example of such non-canonical readings (*šawādhdh*) that is of particular interest in light of the discussion above concerning the orthoepic extension of *dagesh forte* to all contexts in Tiberian Hebrew (§I.0.11.) is the practice of some Qur'ān readers to geminate a consonant after a preceding vowelless consonant, e.g. يَخْطُفُ *yakħṭifū* 'it takes away' (Q 2.20).¹³⁸ This process of obsolescence of traditions with small numbers of transmitters and with features that deviated from normal Arabic usage, which took place in the Islamic world in the tenth century, could have influenced the transmission of the Hebrew Bible at that period,

¹³⁷ Ibn Mujāhid, *Kitāb al-Sab'a fī al-Qirā'āt* (ed. Cairo, 1972), Nöldeke et al. (1938, 155–56).

¹³⁸ This is recorded in the collection of *shawādhdh* by Ibn Khālawayh (d. 370/980), *Mukhtaṣar fī Shawādhdh al-Qur'ān min Kitāb al-Bādī'* (ed. Bergsträsser, 1934, 3).

whereby the continuation of the Tiberian oral reading was disfavoured due to the small number of readers.

After the loss of the orally transmitted Tiberian pronunciation and its textualization as a historical relic in the written signs, readers and teachers of the Hebrew Bible were obliged to interpret the sign system as it was received. Many features of the Tiberian pronunciation that are not discernible in the sign system fell into complete oblivion. These include the orthoepic features I have described above, such as the extended *dagesh forte* reading. In the later Middle Ages, the standard Tiberian sign system was a graphic fossil that reflected an extinct tradition that was different from the pronunciation traditions of the various communities. In some cases, however, the reading was adapted to the sign system. A conspicuous example of this is the development of Biblical reading in late medieval Ashkenaz.

The distribution of vowel signs in manuscripts from medieval Ashkenaz dating to the twelfth and thirteenth centuries reflects a five-vowel system, in which no distinction is made between *qames* and *pataḥ*, nor between *sere* and *segol*.¹³⁹ This indicates that at that period the pronunciation of the Ashkenazi communities still had the original Palestinian five vowel system. By the middle of the fourteenth century, a new vowel system evolved in the Ashkenazi tradition of Hebrew, in which there was a distinction in pronunciation between *qames* and *pataḥ* and between *sere* and *segol*. One of the main causes of this change in the vowel system was the occurrence of vowel shifts in the dialects of German that were spoken by the Jews. In the twelfth

¹³⁹ Eldar (1978).

century, a number of German dialects, including Yiddish, developed a labio-velar pronunciation (in some [o] and in others [u]) of Middle High German [a:] as well as of [a] in an open syllable. This shift found its way into the Hebrew component of Yiddish. Since, however, words of Hebrew origin were assimilated into Yiddish at an earlier period, in which there were no quantitative distinctions (between long and short *a*), this shift only affected cases of [a] in an open syllable. In Hebrew words that met the criteria for the shift to [o] or [u], a lengthened [a] in open syllables mostly corresponded to historical *qameš*, e.g., [poter] (= פּוֹרֶר) ‘released’, [boro] (= בָּרַא) ‘he created’, [dvorim] (= דְּבָרִים) ‘words’, and in a few cases also to historical *pataħ*, as in [noxem] (= נָחוֹם) ‘Nahum’, [kadoxes] (= קָדוֹשָׁת) ‘fever’. In the thirteenth and fourteenth centuries, Yiddish began to develop a diphthongized articulation of long [e:] in an open syllable. The shift [e:] > [ei] or [ai] entered the Hebrew component of Yiddish as a reflection of *sere* (in an open syllable), as in [eyme] (= אֵימָה) ‘terror’, [breyśis] (= בְּרִאשִׁית) ‘in the beginning’ and also as a reflection of *segol* (in an open syllable) in a small group of words that were pronounced in Yiddish as if they were vocalized with *sere*, e.g., [meylex] (= מֶלֶךְ) ‘king’, [keyver] (= קְבָּרָה) ‘grave’, etc. The variations between [o] and [u], on the one hand, and [ei] and [ai], on the other, in Ashkenazi Hebrew were reflections of the local dialects of Yiddish. At approximately the same period as these vowel shifts took place in the vernacular dialects, the scribes in Ashkenaz began to make an association between the newly developed vowel distinctions and the Tiberian vowel signs.

What is of particular interest is that in the biblical reading tradition mismatches between the sign system and the pronunciation were adjusted, e.g. *patah* was always read with the [a] quality, even where it was pronounced as [o] or [u] due to the sound shift of [a] in stressed open syllables in the Hebrew component of Yiddish, e.g. [kadoxes] (= קָדוֹשָׁה). The written sign system, therefore, had an impact on the biblical reading tradition, in that there was an attempt to assign a particular phonetic value to each sign.¹⁴⁰

This development of the Ashkenazi reading in the late Middle Ages reflects the primacy of the authority of the written sign system over the oral reading tradition. Such a phenomenon should be contrasted with the situation in the Masoretic period, when the oral Tiberian reading tradition of particular Masoretes had primary authority and the sign system underwent a constant adaptation to reflect it.

We may identify a typological parallel here between the developments after the destruction of the Second Temple and those that occurred after the demise of the Tiberian Masoretic school. Before the destruction of the Temple, there was a stabilized proto-Masoretic text within a pluriformity of other textual traditions. After the destruction of the Temple the prestigious proto-Masoretic text gained general acceptance. The diversity reflected by the pluriform biblical manuscripts from Qumran was replaced by a uniform prestigious text that was read with a pluriformity of oral reading traditions, of which one, the Tiberian tradition, was regarded as the most prestigious. After the dispersal of the Tiberian school, the pluriform written

¹⁴⁰ Weinreich (1965), Eldar (2013).

vocalization sign systems reflecting the different oral reading traditions were gradually replaced by a uniform prestigious vocalization system that was read with a pluriformity of oral reading traditions. In both cases, there was a punctuation in Jewish society involving the loss of a central prestigious body that was responsible for the stabilization of the transmission of the Hebrew Bible. In the first century C.E., this was the destruction of Temple. In the tenth century C.E., it was the loss of the Tiberian Masoretic school. In both cases, after the ongoing activity of stabilization ceased, the tradition reached completion and became fossilized. In both cases, the written tradition, of the text or of the vocalization system respectively, gained general acceptance.

I.0.13. SOURCES FOR THE TIBERIAN PRONUNCIATION TRADITION

The early model Tiberian Bible codices are an important starting point for the reconstruction of the Tiberian pronunciation tradition. Various additional sources, however, are crucial for establishing many aspects of pronunciation that are not discernible in these codices. In this section, we shall review these additional sources.

I.0.13.1. Masoretic Treatises

A number of important details relating to pronunciation can be found in a variety of treatises written by Tiberian Masoretes or by scholars close to their circle who had direct access to the Tiberian Masoretic tradition.

A number of early Masoretic treatises that are written in rhymed Hebrew and preserved mainly at the end of the medieval Tiberian Bible codices contain material relating to pronunciation. Many of these were published by Baer and Strack (1879). They relate to selected issues concerning vocalization and accents, particularly the *shewa* and *ga'ya*. In some cases, they go beyond description and offer explanatory rules for differences based on their context of occurrence. Some of the Hebrew texts gathered by Baer and Strack, furthermore, concern topics relating to grammatical theory, such as the classification of consonants according to their points of articulation, or according to whether they are 'radical' or 'servile' letters, the distinction between construct and absolute forms, the distinction between contextual and pausal forms, and verbal tenses.

Baer and Strack attributed the majority of the texts in their corpus to a Masoretic treatise known as *Diqduqe ha-Te'amim* (see below for meaning) by the Masorete Aharon ben Asher (tenth century), although they did not clearly delineate the scope of the treatise. Dotan (1967) made a thorough study of such texts and concluded that the original treatise of Ben Asher contained twenty-six sections, which are reproduced in a fixed order in some manuscripts. Other sections, of unknown authorship, were subsequently added to these in various manuscripts. The work was not intended as a systematic collection of rules relating to the accents, but only as a treatment of selected details that were regarded as potentially problematic. This is reflected by the name of the work *Diqduqe ha-Te'amim*, which can be rendered 'The Fine Details of the Accents'. The work also includes discussions of

some aspects of vocalization, in particular of the *shewa*. Dotan argues that Aharon ben Asher incorporated some of the material of *Diqduqe ha-Te‘amim* from earlier Masoretic collections. This probably explains why the work is in Hebrew, since in the tenth century Masoretic treatises were generally written in Arabic. The source material for the work is likely to have been composed in the ninth century.

A number of Arabic Masoretic treatises are extant that are datable to the tenth century. Most of these concern the biblical reading tradition and its phonological principles. In some cases, a number of the technical terms and even sections of the text itself are in Hebrew. These Hebrew elements may be regarded as vestiges from the earlier Hebrew tradition of Masoretic treatises. Some of the texts datable to the tenth century include treatises on vowels and the *shewa*, such as those identified by Allony as *Kitāb al-Muṣawwitat* ‘The Book of Vowels’ (Allony 1963) and *Seder ha-Simanim* ‘The Order of Signs’ (Allony 1965). These two treatises offer explanations for the distinction between vowels based on factors such context and placement of stress, and develop many of the topics that are found in the *Diqduqe ha-Te‘amim*. In some cases, the explanations for distinctions in vowels is correlated with semantic distinctions, which is a level of functional explanation not found in earlier texts. The functional concern of the work is also clear in the title of one of the extant sections of the text *‘ilal al-muṣawwitat* ‘the reasons for the vowels’ (Morag 2003, 251–52). An Arabic treatise devoted to the *shewa* that is datable to the tenth century was published by Levy (1936). This develops an analysis of the *shewa* based on a

theory of syllable structure. The treatise warns that mistakes in reading *shewa* can lead to the corruption of the form of words and, in general, has a pedagogical tone. This reflects the fact that the correct transmission of the Tiberian reading still depended on a tradition of teaching even after the details of the Tiberian Massora had been committed to writing (Eldar 1994, 3–8; Khan 2012, 3–4).

Allony (1973) published a fragment of an Arabic treatise on consonants, which he attributed to ‘Eli ben Yehudah ha-Nazir. This also appears to be datable to the tenth century. The extant text is concerned mainly with the pronunciation of the letter *resh*. A remarkable feature of this text is the reference by the author to the fact that he undertook fieldwork in the streets of Tiberias to verify his analysis of the *resh* in Tiberian reading, on the grounds that *resh* had the same pronunciation in the local speech of the (Jewish) inhabitants of Tiberias: “I spent a long time sitting in the squares of Tiberias and its streets listening to the speech of the common people, investigating the language and its principles, seeing whether anything that I had established was overturned or any of my opinions proved to be false, in what was uttered with regard to Hebrew and Aramaic etc., that is the language of the Targum, for it resembles Hebrew ... and it turned out to be correct and accurate”. The interpretation of this is not completely clear. The Aramaic mentioned by the author could have been vernacular Aramaic that was still spoken in Tiberias at the time. The Hebrew must have been the recitation of Hebrew liturgy or the occurrence of a ‘Hebrew component’ (Hebrew words and

phrases) within vernacular speech. Drory (1988, 33–35) suggested that this report of fieldwork may have been an imitation of the *topos* in the medieval Arabic grammatical literature of verifying grammatical phenomena by carrying out fieldwork among the Bedouin Arabs, who were deemed to be speakers of ‘pure Arabic’, the inhabitants of Tiberias being the corresponding tradents of pure Hebrew. A Hebrew treatise concerning the *resh* is found also in the corpus published by Baer and Strack (1879, §7), in which it is likewise stated that this pronunciation existed in the conversational speech of the common people (וְהוּא קָשׁוֹר) בְּלִשׁוֹנֵם אֲמַم יִקְרָאוּ בְמִקְרָא וְאֲמַם יִשְׁחַחּוּ בְשִׁיחָתָם וְהוּא בְפִי הָאֲנָשִׁים וְהָנָשִׁים וּבְפִי הַطָּף ‘it is on their tongues, whether they read the Bible or converse in their conversation, in the mouths of men, women, and children’).

The authorship of these works on Tiberian pronunciation cannot be established with certainty, although Allony, who published many of them, attributed them to various medieval scholars who are known from other sources. In most cases, there is no decisive evidence for these attributions and they should be treated with caution (Eldar 1986). It has been argued by Eldar (1988) that the treatise on the *shewa* published by Levy (1936) and *Kitāb al-Muṣawwītāt* ‘The Book of Vowels’ published by Allony (1963) are parts of the same work.

An important work composed in the eleventh century was the *Hidāyat al-Qāri'* ‘The Guide for the Reader’. This work was studied in detail by Eldar, who published sections of it (see, in particular, Eldar 1994 and the references cited there). It can be classified as a Masoretic treatise, although, unlike the treatises

discussed above, the *Hidāyat al-Qāri'* was composed several decades after the time in which the final Tiberian Masoretic authorities, Ben Asher and Ben Naftali, were active. Its author was the Karaite grammarian 'Abū al-Faraj Hārūn, who was based in Jerusalem in the first half of the eleventh century (Khan 2003). Although he did not have direct contact with the Masoretes of the tenth century, he did have access to teachers of the Tiberian reading tradition, who could still be found in Palestine in the eleventh century, in addition to the Masoretic treatises of earlier generations. 'Abū al-Faraj produced the work in a long and a short version. The long version, which was composed first, contains more expansive theoretical discussions. The short version became more popular, as is reflected by the greater number of extant manuscripts. The work presents a systematic description of the consonants, vowels (including *shewa*), and accents. It was divided into three parts, part one being devoted to the consonants, part two to the vowels, and part three to the accents. The *Hidāyat al-Qāri'* was conveyed beyond the confines of Palestine to Yemen and to Europe. The long version was transmitted to Yemen, probably in the thirteenth century. Two abridgements were made of this in Yemen, one in Arabic (ed. Neubauer 1891) and one in Hebrew (ed. Derenbourg 1871). Each of these was known as *Mahberet ha-Tijān* 'The Composition of the Crowns', since they were copied at the beginning of Bible codices known as 'crowns' (Arabic *tijān*) (Eldar 1994, 15–16).¹⁴¹ The short version of *Hidāyat al-Qāri'* found its way to central Europe

¹⁴¹ Another derivative Arabic version was published in Ginzburg's (1885, 43-51) corpus of Masoretic material.

and two full Hebrew translations were made of it. One was made in Mainz and was given the title *Horayat ha-Qore* ‘Guide for the Reader’ in the manuscripts, the earliest being datable to the thirteenth century. The other translation was given the title *Tokhen Ezra* ‘The Ruling of Ezra’ in a manuscript dated 1145 and the title *Ta‘ame ha-Miqra* ‘The Accents of the Bible’ in a manuscript dated 1285–1287. Both copies were made in Italy. In the version entitled *Ta‘ame ha-Miqra* the work is erroneously attributed to the Spanish grammarian Yehudah ibn Bal‘am (Busi 1984; Eldar 1994, 16–18).

The sections on the consonants and vowels in *Hidāyat al-Qāri'* are of great importance for the reconstruction of the Tiberian pronunciation tradition. This applies in particular to the original Arabic long and short versions. So far, no full edition of these is available. I have, therefore, included a critical edition of the sections on consonants and vowels of the Arabic versions of *Hidāyat al-Qāri'* together with a facing English translation as a supplementary volume to this book. Eldar (2018) has recently published the section on the accents from the Arabic versions.

I.0.13.2. Masoretic Notes

The Masoretic notes in the margins of Bible codices occasionally contain information about the pronunciation of the reading tradition that supplements what is encoded in the vocalization sign system. This applies in particular to notes that relate to vowel length. The Masoretic note ֤ ‘short’, for example, occurs in places where there may be some doubt as to whether a vowel is long or short, as in:

- L: זְכָרָה ‘remember!’ (2 Chron. 6.42). Masoretic note: נחן ל ‘the only form in the book in which the vowel is short’, i.e. it is an imperative with a short *qames* and not a 3fs. past verbal form, which would have had a long *qames*.
- A: רַבָּבוֹת ‘ten thousands of’ (Deut. 33.17). Masoretic note: נחן ‘short’, i.e. the *hireq* is short here, in contrast to cases with *ga'ya*, such as רַבָּבוֹת (Num. 10.36), in which the *hireq* is long.

I.0.13.3. Karaite Transcriptions of the Hebrew Bible into Arabic Script

In the tenth and eleventh centuries C.E., many Karaite scribes in the Middle East used Arabic script not only to write the Arabic language but also to transcribe Hebrew. Such Hebrew texts in Arabic transcription were predominantly Hebrew Bible texts. These were sometimes written as separate manuscripts containing continuous Bible texts. Some manuscripts in Arabic script contain collections of Biblical verses for liturgical purposes. Arabic transcriptions of verses from the Hebrew Bible or individual Biblical Hebrew words were, in many cases, embedded within Karaite Arabic works, mainly of an exegetical nature, but also in works of other intellectual genres. Several Karaite Arabic works also contain Arabic transcriptions of extracts from Rabbinic Hebrew texts (Tirosh-Becker 2011). The Karaites transcribed into Arabic script only texts with an oral reading tradition, as was the case with the Hebrew Bible and Rabbinic texts in the Middle Ages. The transcriptions reflect, in principle, these oral traditions. It is for this reason that the transcription of the Hebrew Bible

represents the *qere* (the orally transmitted reading tradition of the text) rather than the *ketiv* (the written tradition) (Khan 1992b).

Most of the known manuscripts containing Karaite transcriptions of Hebrew into Arabic script are found in the British Library (Khan 1993), the Firkovitch collections of the National Library of Russia in St. Petersburg (Harviainen 1993a), and in the Cairo Genizah collections (Khan 1990a). These manuscripts emanate from Palestinian circles of Karaites or Karaites in Egypt who had migrated to Egypt from Palestine after the capture of Jerusalem by the Crusaders in 1099. The majority of them were written in the tenth and eleventh centuries. Most of the transcriptions of Biblical Hebrew reflect the Tiberian reading tradition. The transcriptions, therefore, are an important source for the reconstruction of this reading tradition. The Karaites represented a movement within Judaism and were closely associated with the Tiberian Masoretes (§I.0.4.). The tradition of Biblical Hebrew reflected by their texts is not a separate communal tradition comparable, for example, to that of the Samaritans.

The Karaite Hebrew grammarians of the tenth and eleventh centuries were, in general, concerned with the reading tradition (*qere*) reflected by the Tiberian vocalization signs and showed little concern for the orthography of the written text (*ketiv*) (Khan 2000b; 2003; 2013b). The Karaite al-Qirqisānī, in his discussions of the bases of authority for the Hebrew Bible, contended that the ultimate authoritative source was the reading tradition of the people of Palestine (by which he meant Tiberias), rather than the written form of the text with orthographic inconsistencies. One

of his justifications was that the reading tradition had been transmitted by the whole community (*'umma*) since the time of the prophets whereas the written orthography had been transmitted on the authority of small circles of scribes, which is, therefore, more liable to corruption or wilful change (Khan 1990c). The Arabic transcription texts can be understood most easily as a reflection of the priority that the Karaites gave to the reading tradition.

I.0.13.4. Grammatical and Lexicographical Texts

Some of the early works on Hebrew grammar were written by scholars who had knowledge of the pronunciation of Hebrew in the Tiberian reading tradition. All these were written in the Middle East in the tenth and eleventh centuries at the end of the Masoretic period. As has been remarked, the grammarians of Spain did not have direct access to the Tiberian reading tradition, despite their extensive discussion of vocalization and phonology in a number of their works.

The grammatical works written by grammarians with a knowledge of the Tiberian reading tradition can be classified into the works of Saadya Gaon and the works of Karaites.

The grammatical writings of Saadya contain elements taken from the Masoretic tradition (Dotan 1997). After leaving Egypt, Saadya spent a few years in Tiberias studying with the Masoretes. According to Dotan, he composed his main grammar book (*Kitāb Fasīḥ Lughat al-‘Ibrāniyyīn* ‘The Book of the Eloquence of the Language of the Hebrews, also known as *Kutub al-Lugha*

‘Books of the Language’) while he was in Tiberias during the second decade of the tenth century. The surviving sections of the work include not only treatments of grammatical inflection and word structure, but also several chapters relating to the Tiberian reading tradition. The material for some of these has clearly been incorporated from the Masoretic tradition and direct parallels can be found in the extant Masoretic treatises, such as *Diqduqe ha-Te‘amim* (Dotan 1997, 34–36). Dotan, indeed, suggests that one of the missing chapters may have been concerned specifically with accents. We may say that Saadya’s grammar book is not a product of collaboration with the Masoretes or a complementary expansion of the scope of Masoretic teaching, but rather was intended to stand apart from the Masoretic tradition.

The grammatical texts written by the Karaites, on the other hand, reflect a closer association with Masoretic activities, in that they were intended to complement the Masoretic treatises rather than incorporate elements from them. Several grammatical works have come down to us that were written by Karaite scholars who had direct access to the Tiberian reading tradition. These can be divided into works reflecting the early Karaite grammatical tradition and those written by the grammarian ’Abū al-Faraj Hārūn together with texts dependent on ’Abū al-Faraj’s works. The main source for the early Karaite grammatical tradition is the grammatical commentary on the Bible of ’Abū Ya‘qūb Yūsuf ibn Nūḥ, known as the *Diqduq*, which was composed in Jerusalem the second half of the tenth century. ’Abū al-Faraj’s works are datable to the first half the eleventh century and were, likewise, written in Jerusalem (Khan 2003). The *Diqduq* of Ibn Nūḥ

contains some discussion of pronunciation and accents, but this is usually related to some issue regarding linguistic form. The *Diqduq* was intended, it seems, to complement such treatises as *Diqduqe ha-Te'amim*, the exclusive concern of which was pronunciation and accents.

³Abū al-Faraj Hārūn ibn Faraj wrote several works on the Hebrew language. The largest of these is a comprehensive work on Hebrew morphology and syntax consisting of eight parts entitled *al-Kitāb al-Mushtamil ‘alā al-’Uṣūl wa-l-Fuṣūl fī al-Lugha al-’Ibrāniyya* ‘The Comprehensive Book of General Principles and Particular Rules of the Hebrew Language’ (Bacher 1895b; Khan 2003). ³Abū al-Faraj subsequently wrote a short version of this entitled *al-Kitāb al-Kāfi fī al-Lugha al-’Ibrāniyya* ‘The Sufficient Book concerning the Hebrew Language’, the entire text of which has been edited with an English translation (Khan, Gallego, and Olszowy-Schlanger 2003). The works of ³Abū al-Faraj were radically different from the *Diqduq* of Ibn Nūḥ in their approach. There was, nevertheless, a certain degree of continuity of grammatical thought from the teachings of the earlier Karaite grammarians in the works of ³Abū al-Faraj, which can be found especially in some of his theories of morphological structure. This continuity can be identified also in the scope of his grammatical works and their complementarity to the Masoretic treatises. The subject matter of *al-Kitāb al-Mushtamil* and his other grammatical works includes mainly the description of morphology and syntax. There is no systematic description of pronunciation or the accents. As we have seen, ³Abū al-Faraj devoted a separate work to this topic, viz. the *Hidāyat al-Qāri’* ‘The Guide for the Reader’.

This was intended by him to complement his work on grammar. It was conceived as a continuity of earlier Masoretic treatises on pronunciation and accents, which were among his sources, as 'Abū al-Faraj states in his introduction to the work. Thus the composition of *Hidāyat al-Qāri* by 'Abū al-Faraj separately from his grammatical works may be explained as a continuation of the complementarity between grammatical and Masoretic treatises that existed among the Karaite grammarians of the previous generation (Khan 2014).

A number of valuable observations about the Tiberian pronunciation tradition are found in the extensive lexicographical work written in Palestine in the tenth century by the Karaite scholar David ben Abraham al-Fāṣī known as *Kitāb Jāmi‘ al-’Alfāz* ‘Book of the collection of words’ (ed. Skoss 1936).

I.0.13.5. Commentaries on *Sefer Yešira*

Sefer Yešira is a mystical work of cosmology and cosmogony that came to form part of the literature of the Qabbalah. It describes God's creation of the world by means of the ten cosmic numbers (*sefirot*) and the twenty-two letters of the Hebrew alphabet (Gruenwald 1971). Scholars differ widely regarding the date of its composition. Gershon Scholem (1965, 158–204) believed it was written in Palestine in the Tannaitic period (second to third centuries C.E.) with some post-Talmudic additions, whereas Bravmann (1934, 29) and Allony (1972; 1982b; 1982a) argued that it was composed in the eighth or ninth century, due to the fact that it contains features that he identified as the result of influence from Arabic grammatical thought in the Islamic period.

The fact that *Sefer Yesira* is already referred to in the *Baraita d-Shmuel* and the poems of Eleazar ha-Kallir (c. sixth century) (Scholem 2007, 330) suggests that such passages are later additions to the original work. Weinstock (1972) argues that a variety of historical layers can be identified in the text, ranging from the Tannaitic period until the tenth century C.E. Hayman (2004, 5) also identifies layers in the text, but is reluctant to accept the early dating of Weinstock.

The work is extant in two main versions, one short and one long, without major divergences in ideas between them. On account of its focus on letters of the Hebrew alphabet, the work is of some importance for the history of the Hebrew language. It contains, for example, a classification of the letters according to their places of articulation in the mouth. It is not accurate, however, to identify the work as the first composition on Hebrew grammar and orthography, as was proposed by Mordell (1914). The inclusion of the letter *resh* together with בגדכפת in a list of the letters that have hard and soft realizations has been interpreted as reflecting a Babylonian rather than Tiberian tradition of pronunciation (Morag 1960). Numerous commentaries were written on work from the tenth century onwards, which made expositions of its laconic and enigmatic text. It is in some of these commentaries that one can find information about the Tiberian reading tradition. The two extant commentaries that are relevant in this respect are those of Saadya Gaon and Dunash ibn Tamim, both written in the tenth century in Arabic. Saadya wrote a philosophical commentary on the long version of *Sefer Yesira* in 931

when he was Gaon in Iraq (ed. Lambert 1891). As has been remarked, Saadya was familiar with the Tiberian reading tradition and makes reference to it in several places in this commentary. ’Abū Sahl Dunash ibn Tamīm made a commentary on the short version in 955/6 in Kairouan. Fragments of the Arabic original have been discovered in the Genizah (Vajda 1954; 1963). Several later revisions were made, mainly in Hebrew (e.g. ed. Grossberg 1902). The commentary is apparently based on the lectures of Dunash’s teacher, Isaac Israeli, who is said to have known the Tiberian reading tradition.

I.0.13.6. Non-Standard Tiberian Systems of Vocalization

There are a variety of extant medieval manuscripts of the Hebrew Bible that are vocalized with Tiberian signs but do not follow the standard Tiberian system of vocalization. These manuscripts exhibit numerous differences among themselves, though certain tendencies are observable. Some of the differences from the standard Tiberian vocalization can be interpreted as reflecting stages of development different from the one exhibited by the standard system, some more primitive and some more advanced, in particular in the use of the *dagesh*, *rafe*, *shewa* and *hatef* signs.¹⁴² Other differences from standard Tiberian reflect a different pronunciation tradition, the most conspicuous feature being the interchange of *segol* and *sere*, on the one hand, and *patah* and *qameṣ*, on the other. Manuscripts exhibiting such interchanges have been interpreted as reflecting the Palestinian

¹⁴² See Khan (1991, 856; 2017b).

pronunciation tradition, since similar interchanges are found in manuscripts with Palestinian vocalization. The interchanges are, however, inconsistent across the extant manuscripts and they appear to reflect a variety of types of pronunciation with minor differences.

The Non-Standard Tiberian type of vocalization has been found in biblical manuscripts written in medieval Europe, in both Ashkenaz and Italy.¹⁴³ The best known European biblical manuscript of this type is Codex Reuchlinianus, written in Karlsruhe in 1105 CE.¹⁴⁴ A range of manuscripts with Non-Standard Tiberian vocalization that were written in the Middle East were discovered in the Cairo Genizah by Kahle (1930, vol. 2), who published descriptions of some of them. Descriptions of other Genizah fragments were subsequently made by other scholars, in particular Díez Macho (1956; 1963; 1971), Murtonen (1961) and Revell (1969). Further work has been carried out by Blapp (2017; 2018) and Arrant (2020) on the Bible fragments with Non-Standard Tiberian vocalization from the Genizah at the University of Cambridge.

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

¹⁴³ See Sperber (1956-1959). Additional manuscripts of this type from Italy are described by Pilocane (2004).

¹⁴⁴ Cod. Reuchlin 3 of the Badische Landesbibliothek in Karlsruhe; cf. Sperber (1956-1959), Morag (1959). This type of vocalization is also found in liturgical manuscripts from medieval Ashkenaz (Eldar 1978) and some manuscripts of the Mishnah (Heijmans 2013b).

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 לִישָׁאַל where standard Tiberian generally has *shewa* followed by *yod* with *hireq* (לִישָׁאַל). As we have seen, this is recorded in Masoretic treatises as a distinctive practice of Ben Naftali. For this reason, Kahle held that this vocalization type was associated with the tradition of Ben Naftali.¹⁴⁵ 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 *rafe* and the interchange of *qames* and *patah*, on the one hand, and *segol* and *sere*, on the other. The attribution of the system to the Ben Naftali school was subsequently followed by Prijs (1957). Díez Macho (1956; 1963) 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 (1959) argues against the attribution of the system to the Ben Naftali school and terms it ‘Fuller Palestinian’. Dotan (2007, 645) believed that the vocalization was a continuation of the Palestinian vocalization. Allony (1964) termed the vocalization ‘Palestino-Tiberian’ on account of the fact that in many cases, as remarked, they reflect a Palestinian type of pronunciation. It is known that this type of pronunciation existed in medieval Ashkenaz before the fourteenth century. The term Palestino-Tiberian has been widely accepted (Eldar 1978;

¹⁴⁵ 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 Baer and Delitzsch (1890, ix) and Ginsburg (1897, 640).

Heijmans 2013b). Yeivin (1980; 1983), however, preferred the term ‘Extended Tiberian,’ on account of the fact that the vocalization system in many of the manuscripts extends some of the principles found in the standard Tiberian vocalization, such as the use of the *dagesh*, *rafe* and *hatef* signs. It is this development of principles of standard Tiberian vocalization as well as the reflection of these principles in a less advanced stage of development in the corpus of Non-Standard Tiberian manuscripts that will be of particular interest to us in this book. I shall refer to the various vocalization systems of this type by the generic term Non-Standard Tiberian, following Blapp (2017, 2018) and Arrant (2020).

Despite the wide attestation of the Non-Standard Tiberian system of vocalization in manuscripts written in the Middle East that are preserved in the Genizah and in manuscripts written Europe in the High Middle Ages, in both Ashkenaz and Italy,¹⁴⁶ it never had the same status as the standard Tiberian system and it eventually fell into disuse. The existence of large numbers of manuscripts with Non-Standard Tiberian vocalization indicates that during the Masoretic period and for a period of time immediately following it, a pluriformity of Tiberian vocalization existed. Within this pluriformity the standard Tiberian system was regarded as the most prestigious, due to its association with the oral traditions of the Masoretic authorities, but there was no systematic attempt to replace the Non-Standard Tiberian sign systems. Indeed many of the manuscripts with Non-Standard

¹⁴⁶ See Sperber (1956-1959). Additional manuscripts of this type from Italy are described by Pilocane (2004).

Tiberian vocalization have a monumental codicological form (Arrant 2020). It was only after the primary base of authority passed from the oral traditions of the Masoretes to the written vocalization that textualized these traditions that the standard Tiberian vocalization gradually began to replace the Non-Standard Tiberian sign systems, and indeed also other non-Tiberian sign systems.

I.0.13.7. The Tiberian Reading Tradition in Babylonian Vocalization

As remarked (§I.0.9.), due to the prestige of the Tiberian reading tradition, there was a tendency for other reading traditions to converge with it. As a result, non-Tiberian systems of vocalization were sometimes used in manuscripts to represent the Tiberian tradition. The vocalization in such manuscripts cast light on several aspects of Tiberian pronunciation. Of particular importance are manuscripts that represent the Tiberian tradition with a system of Babylonian signs known as ‘compound Babylonian vocalization’. The ‘compound system’ of Babylonian vocalization distinguished between long and short vowels, in that it marked short vowels in open and closed syllables by the use of different signs from those used to indicate long vowels. This system, therefore, is helpful for the reconstruction of vowel length. The longest and best known extant manuscript that represents the Tiberian reading with this compound system of Babylonian signs is the manuscript I Firkovitch Evr. I B 3 of the National Library of Russia, which is generally known as Codex Babylonicus Petropolitanus. This was published in facsimile by Strack

(1876) and is a major source for the reconstruction of Tiberian pronunciation (see, for example, A. Ben-David 1957a).

I.0.13.8. Tiberian Signs Used to Represent Other Languages

In the Middle Ages, Tiberian vocalization signs were used in manuscripts written in a variety of Jewish languages other than the canonical biblical languages of Hebrew and Aramaic. Those emanating from the medieval Middle East include manuscripts in Judaeo-Arabic (Blau and Hopkins 1985; Khan 1992a; 2010; 2017a), Judaeo-Persian (Shaked 1985, 35–37) and Judaeo-Greek (de Lange 1996). Of particular importance in this context are the medieval vocalized Judaeo-Arabic manuscripts, since many of these reflect the use of the vocalization signs with the phonetic and syllabic value that they had in the Tiberian reading tradition. This indicates that they were written when the Tiberian pronunciation was still a living tradition. Many of these vocalized Judaeo-Arabic manuscripts have been preserved in the Cairo Genizah. The vowel signs in vocalized Judaeo-Arabic manuscripts from the later Middle Ages, by contrast, do not reflect the Tiberian pronunciation, since by that period it had fallen into oblivion.

I.1. CONSONANTS

I.1.1. 'ALEF אָלֶף (א)

Glottal plosive [?]

Consonantal 'alef occurs in the following contexts:

In the onset of a syllable at the beginning of a word, e.g. מִתְּאַרְךָ [?ɔ:t'ma:aR] ‘he said’ (Gen. 3.16), אֱלֹהִים אֱלֹהִים [?elo:him] ‘God’ (Gen. 1.1).

In the onset of a syllable in the middle of a word after a silent *shewa*, e.g. וַיַּבְאֵשׁ [vajjiv'wa:a:s] ‘and it became foul’ (Exod. 7.21).

In the onset of a syllable in the middle of a word after a vowel, a *hatef* vowel or vocalic *shewa*, e.g. יְבִיאוּ [jɔ:via:u] ‘they bring’ (Exod. 16.5), אֲזַבְתָּךְ [a:azzer'tak:] ‘I gird you’ (Isa. 45.5) מָאֹד [mo'a:od] ‘very’ (Gen. 1.31).

In the coda of a syllable in the middle of a word, e.g. וַיַּסְרֵ [vajje:sor] ‘and he tied’ (Gen. 46.29).

In the Standard Tiberian tradition consonantal 'alef in the middle of a word between vowels is marked with *dagesh* in four places:

- (i) וַיִּבְרְאֵוּ לְךָ ‘and they brought to him’ (Gen. 43.26)
- (ii) וַיִּבְרְאֵוּ לְנוּ ‘and they brought to us’ (Ezra 8.18)
- (iii) תְּבִיאוּ לְחַם ‘you shall bring bread’ (Lev. 23.17)

(iv) **לֹא רָאוּ** ‘they were not seen’ (Job 33.21)

These four cases are specified in Masoretic treatises and Masoretic notes. They are referred to, for example, in the Masoretic treatise *Hidāyat al-Qāri*:¹

It has been said that *dagesh* is placed in *'alef* in some specific places in Scripture, namely in the following four cases: וַיִּרְאּו לֵוֶת הַמְנֻחָה ‘and they brought him the present’ (Gen. 43.26), וַיִּבְרְאּו לֵנוֹ כִּידָאָלְתָנוֹ ‘and they brought to us by the hand of our God’ (Ezra 8.18), מִמּוֹשְׁבְתֵיכֶם תְּבִיאוּ | ‘from you dwellings you shall bring’ (Lev. 23.17), וְשָׁפַע עַצְמֹתָיו לֹא ‘and his bones, which were not seen, are laid bare’ (Job 33.21).

Some examples of references to the four places in Masoretic notes include the following:

ג' אלפין דגשין בלישנא וסימנהון ממושבתייכם תבטאו לחם תנופה, יביאו
לו את המנחה אשר בידם, ויביאו לנו, חד בלשו' אחר ושפו עצמותיו לא
רָאוּ

There are three occurrences of *'alef* with *dagesh* in a particular lexical item (viz. derivatives of the root בָּא ‘to come’), these being in the verses מִמּוֹשְׁבְתֵיכֶם תְּבִיאוּ לְחַם תְּנוּלָה שְׁתִים ‘You shall bring from your dwellings two loaves of bread to be waved’ (Lev. 23.17), וַיִּבְרְאּו לֵוֶת הַמְנֻחָה אֲשֶׁר ‘they brought to him the present which they had in their hand’ (Gen. 43.26), וַיִּבְרְאּו לֵנוֹ ‘they brought to us’ (Ezra 8.18), and one (case of *'alef* with *dagesh*) in another word,

¹ Long version, edition in vol. 2 of this book, §II.L.1.3.2.

(in the verse) וְשֶׁפַע עֲצָמוֹתָיו לֹא רָא, ‘and his bones which were not seen stick out’ (Job 33.21).²

חד מז ד' אלףן דגשין בקרוי

One of four *'alefs* with *dagesh* in Scripture.³

These show that the occurrence of *dagesh* in *'alef* in these specific places was fixed in the Tiberian tradition. In some of the early Standard Tiberian codices, however, *dagesh* is marked in *'alef* also elsewhere in addition to these canonical four places. This applies even to L, where it occurs in the following two additional places:⁴

L: Ruth 2.10: (אַנְכִּי I) (אַנְכִּי: ‘and I’)

L: Ruth 2.11: (וְתַעֲזִבֵּי אָבִיךָ) (וְתַעֲזִבֵּי אָבִיךָ: ‘and you left your father’ (A: אָבִיךָ))

These two additional occurrences of *dagesh* in *'alef* in L are not referred to in the Masoretic notes, which indicates that they were not canonical in the Tiberian tradition. In the manuscript C there are numerous additional cases of *'alef* marked with *dagesh*, none of which are referred to in the Masoretic notes (Yeivin 1980, 285), e.g.

C: Hag. 1.1: שְׁאַלְתִּיאֵל “Shealtiel” (L [BHS]: שְׁאַלְתִּיאֵל)

² Ginsburg (1880, §5), source: *Masora magna* in British Library, Harley 1528 (fourteenth century, Spain).

³ Ginsburg (1905, 2), source: *Masora magna* in the Second Rabbinic Bible (Venice 1516–17, Bomberg) to Lev. 23.17, Job 33.21 and Ezra 8.18.

⁴ I am grateful to Ben Kantor for drawing these to my attention.

- C: Jer. 38.12: בָּלְוָאִי ‘rags’ (L [BHS]: בָּלְוָאִי)
- C: Isa. 51.19: קְרָאַתִּיךְ ‘the things that befall you’ (L [BHS]: קְרָאַתִּיךְ)

Ginsburg (1905, 2) draws attention to the existence of some Masoretic notes in European manuscripts that refer to a greater number of instances of *dagesh* in ’alef than the canonical four. These must reflect the awareness of a greater extent of marking the *dagesh* in some manuscripts.

In manuscripts with Non-Standard Tiberian vocalization, the marking of *dagesh* in consonantal ’alef is very frequent. In the Codex Reuchlinianus this is the general rule with only a minority of exceptions. In the single verse Isa. 37.33, for instance, we find: מֹרָג אָ ‘he said’ (L [BHS]: מֹרָג), לְאָ ‘to’ (L [BHS]: לְאָ), אֲשֶׁר ‘Assyria’ (L [BHS]: אֲשֶׁר) (Morag 1959, 218). There is frequent marking of *dagesh* in ’alef also in manuscripts with Non-Standard Tiberian manuscripts written in the Middle East. In some of the Genizah fragments described by Blapp (2017), for example, the marking is as regular as in Codex Reuchlinianus. The following are a few selected examples from T-S A12.1 (Blapp 2017, 83):

- מוֹמָא (T-S A12.1 | L [BHS]: מוֹמָא Prov. 29.15 ‘his mother’)
- שְׁרָהָוּ (T-S A12.1 | L [BHS]: שְׁרָהָוּ Prov. 29.18 ‘happy is he’)
- חָאָזָן (T-S A12.1 | L [BHS]: חָאָזָן Prov. 29.20 ‘he who is hasty’)
- בְּאַמְתָּה (T-S A12.1 | L [BHS]: בְּאַמְתָּה Prov. 29.14 ‘truthfully’)
- כְּסָדָה (T-S A12.1 | L [BHS]: כְּסָדָה Prov. 29.14 ‘his throne’)
- יְרָאָנָה (T-S A12.1 | L [BHS]: יְרָאָנָה Prov. 29.16 ‘they will see’)

(T-S A12.1 | L [BHS]: בָּאֵין Prov. 29.18 ‘where there is not’)

The motivation to mark the *dagesh* in the four canonical places in the Standard Tiberian tradition was, it seems, to ensure that the consonantal *'alef* was pronounced correctly and was not slurred over (Yeivin 1978, 1980, 285). The forms וַיְבִיאוּ לֹא (Gen. 43.26), וַיְבִיאוּ לְנָהָם (Ezra 8.18) and וַיְבִיאוּ לְחַמֶּן (Lev. 23.17) are distinguished from other instances of similar forms of this verb in the biblical corpus by having a conjunctive accent followed by a word with an accent on the initial syllable. This is the context in which *dehq* occurs when the final vowel of the first word is *qames* or *segol*, in which there is a fast reading and compression of the syllable between the two accents (§I.I.2.8.1.2.). They also exhibit the sequence of two adjacent high vowels [i:—u:] separated by *'alef*. It is likely, therefore, that the consonantal *'alef* was considered to be particularly in danger of being slurred over in such a context. Another common feature of these three cases is the occurrence of the sonorant consonant *lamed* at the beginning of the second word. The *'alef* in וְאַתָּה (Job 33.21) was evidently considered to be in danger of losing its pronunciation and being read as a glide between the two high [u:] vowels.

The greater number of occurrences of *dagesh* in *'alef* in some of the model Tiberian codices, especially C, reflects the extension of this principle to other cases of consonantal *'alef* that were considered to be at risk of being misread. Still further extension of this practice is found in some manuscripts with Non-Standard Tiberian vocalization, in which the marking of *dagesh* has become virtually regular.

The question arises as to whether this *dagesh* in 'alef marked gemination or not. Some modern scholars have interpreted it as a sign to distinguish the consonantal realization of the 'alef from cases where it does not have consonantal realization (e.g. Morag 1959, 218–19, 1960, 208 n.6, 1963, 5–6). It would, therefore, be equivalent to a *mappiq* on the letter *he*, which distinguishes final consonantal *he* from final *he* that is a vowel letter, rather than a marker of gemination. A statement in *Hidāyat al-Qāri'* appears to support this interpretation:

If it were said: Surely the *dagesh* in some of the four letters of this place (i.e. the letters עַחֲנָא), namely in the 'alef in the four passages that you have just mentioned, disproves your statement that *dagesh* is not put on the letters of this place of articulation, the response would be: If one examines carefully the so-called *dagesh* in the 'alef in these four passages, one sees that it is not *dagesh*, since the speaker strives to introduce heaviness into it, but it is not made heavy.⁵

There is, however, evidence for the gemination of the 'alef in some early Karaite sources. Yūsuf ibn Nūḥ, a Karaite scholar active in the second half of the tenth century, in his grammatical commentary known as the *Diqduq* compares the *dagesh* in the forms וַיְבִיאוּ לֵנוֹ (Gen. 43.26) and וַיְבִיאוּ לֵזֶה (Ezra 8.18) to the *dagesh* that occurs in other forms due to the preceding stress:

בָּוּ (Job 13.9): ... The *dagesh* that occurs in the *lamed* has arisen due to the fact that the stress lengthens (the syllable beginning with) the *tav*, resulting in בָּוּ ‘you

⁵ Long version, edition in vol. 2 of this book, §II.L.1.3.5.

deceive him'. This conforms to what we have stated before, with regard to the occurrence of *dagesh* in some places when the stress lengthens what precedes, for example אלהָןְאַמְרָה ‘Moses saying’ (Exod. 6.10), and they said “No” (Gen. 19.2), וַיֹּאמְרוּ לֵאמֹר (Ezra 8.18) and וַיֹּאמְרוּ לְנָא (Gen. 43.26). The word יִבְחַרְתְּךָ is like, in that the stress and the *dagesh* occur within the same word.⁶

This passage implies that the *dagesh* in the *'alef* indicates gemination in the same way as the *dagesh* in תְּרַתֵּלִי. Ibn Nūḥ makes the following statement about the form רָאֹ (Job 33.21):

The imperative of this is רָאָה, like פְּסַח and שְׁפָה.⁷

In Ibn Nūḥ's system of grammar, the imperative form is the morphological base of derivations. This statement indicates that נִזְבַּח has the morphological base נִזְבָּח and that this has the same pattern as בָּסָה and שָׁפָה, which are the bases of the forms בָּסָה ‘it is covered’ (Ecc. 6.4), וָשָׁפָא ‘and they stick out’ (Job 33.21) with medial gemination.

In a Karaite transcription of לֹא רָא (Job 33.21) into Arabic script, an Arabic *shadda* sign is written over the 'alif that transcribes the 'alef with the *dagesh*:

⁶ תחתלו בו: ... ואלדשaldi וקע פי אללאם הוא מון גהה אנה מד אלטעם פי תו כל פההלו בו: והו כמא קלגא אנה יעמיל פי בעץ אלמוואפצע דגש ענד מא ימד אלטעם פי מא תחתלו מותל ניביאו צאר ויאמרו לא: ניביאו לנו: ניביאו לו קבלה נגיד אל משה לאמר:

⁷ אמרה ראה מטל בפה שפה, *Diqduq* (ed. Khan 2000b, 399).



لواذ بِهِ (BL Or 2552 fol. 51r, 1 | L [BHS]: לָאוּ בְּ הַזֶּה Job. 33.21 ‘they were [not] seen’)

This manuscript, which is datable to the tenth or eleventh century, elsewhere uses the *shadda* sign only to mark *dagesh forte*. This is clear evidence, therefore, that the *'alef* was being read as geminate.

The interpretation of the *dagesh* in *'alef* as a marker of gemination rather than a *mappiq* is reflected also by a statement in a Hebrew Masoretic treatise:

Moreover, three of the four (i.e. the four letters עַחַת) have a single fixed type (of pronunciation), which is less than all the (other) letters, (namely) הַעַת are deprived of taking *dagesh*.⁸

The implication of the passage is that *'alef*, unlike the other guttural letters, does indeed take *dagesh*.

Returning to the passage from *Hidāyat al-Qāri'* cited above, a close reading of this reveals that the author is not saying that the point in the *'alef* is simply a *mappiq* indicating consonantal realization. Rather the reader ‘strives to introduce heaviness into

⁸ ועוד שלשה מן הארבעה, דרך אחד להם קבועה, מכל האותיות גרוועה, הע"ח מן הדגש פירושים (Baer and Strack 1879, 5).

it, but it is not made heavy', i.e. the reader intends to read it as a *dagesh forte*, but the muscular tension normally associated with *dagesh forte* is not achieved due to its articulation in the larynx. The articulation of the 'alef could, nevertheless, have been held for a longer duration.

In some manuscripts with Babylonian vocalization, the *dagesh* sign is marked on consonantal 'alef in a wide variety of words (Yeivin 1985, 265–66). It is significant that *mappiq* on final *he* is represented by a different sign (Yeivin 1985, 335–36), suggesting that the *dagesh* in the 'alef did not have the function simply of *mappiq* but rather indicated gemination.

In some of the reading traditions that have continued down to modern times in Jewish communities in the Middle East, the 'alef with *dagesh* in the four canonical places is indeed still read as a geminate 'alef, e.g. Aleppo (Katz 1981, 16), Baghdad (Morag 1977, 14), Yemen (Morag 1963, 5–6). Transcriptions of the Aleppo tradition, following Katz (1981, 16) are as follows:

Gen. 43.26: [,_vajja'βi?̄?u]

Ezra 8.18: [v^aja'βi:?[?]u]

Lev. 23.17: [ta'βi?[?]u]

Job 33.21: ['ru?[?]u]

These traditions of reading the 'alefs need not be interpreted as late interpretations of the point in the 'alef, as Morag (1977, 14) argues, but rather continuities of medieval traditions.

In sum, the weight of evidence suggests that the *dagesh* point in 'alef in the four canonical places in the Standard Tiberian

tradition indicated gemination of the 'alef, and so should be transcribed [vaj^gɔ: 'vi:i??u:], [t^hɔ: 'vi:i??u:], [r^u? 'u:]. The gemination was an orthoepic strategy that involved pronouncing the 'alef with additional effort to ensure that it was not slurred over.

Within the Tiberian Masoretic tradition there are a number of pairs of identical lexical words, many of them in parallel passages, one of which has preserved the consonantal 'alef whilst the other has lost it both in the *ketiv* and in the *qere*,⁹ e.g.

תֹּם תְּאַזְמִים (Gen. 25.24) — תְּאַזְמָם (Gen. 38.27) ‘twins’

וְפֹה וְפֹהָ (Gen. 46.13) — וְפֹהָה (1 Chron. 7.1) ‘and Puah’¹⁰

וְתִזְרֵנִי וְתִזְרֵנִי (2 Sam. 22.40) — (Psa. 18.40) ‘you did gird me’

הַבְּרוֹתִי הַבְּרוֹתִי (1 Chron. 11.39) — (2 Sam. 23.37) ‘of Beereth’

לְהַשְׁׂוֹת לְהַשְׁׂוֹת (2 Kg. 19.25) — לְהַשְׁׂוֹת לְהַשְׁׂוֹת (Isa. 37.26) ‘to cause to crash into ruins’

וַיְרִפְאֵוּ וַיְרִפְאֵוּ (Jer. 6.14) ‘and they have healed’

In some biblical scrolls from Qumran, an 'alef that is pronounced consonantal in the Tiberian Masoretic tradition is omitted in the orthography, indicating that it had lost its consonantal

⁹ These are listed in the Masora, e.g. Ginsburg (1880, §16a).

¹⁰ In the Non-Standard Tiberian manuscript BL Add MS 21161, fol. 250v this word is vocalized הַאֲזִירָה, which appears to be a hybrid form of פֹהָה and פֹהָה.

pronunciation. This is particularly common in the scroll 1QIsa^a, but is found also occasionally elsewhere, e.g.¹¹

מַשְׁרִיךְ (1QIsa^a 3.17 | L [BHS]: מַשְׁרִיךְ Isa. 3.12 ‘your guides’)

נִסְפִּים (1QIsa^a 11.14 | L [BHS]: נִסְפִּים Isa. 13.4 ‘gathered [mpl]’)

וּמָלֹא (1QIsa^a 12.23 | L [BHS]: וּמָלֹא Isa. 14.21 ‘and [the surface of the world] will be filled’)

וַיִּשְׁמוּ (1QIsa^a 19.3 | L [BHS]: וַיִּשְׁמוּ Isa. 24.6 ‘[and its inhabitants] pay the penalty’)

טְלִימִים (1QIsa^a 33.11 | L [BHS]: טְלִימִים Isa. 40.11 ‘lambs’)

תְּנַתּוֹ (1QIsa^a 29.25 | L [BHS]: תְּנַתּוֹ Isa. 36.16 ‘his fig tree’)

הַבְּיאוּ (1QIsa^a 13.19 | L [BHS]: *ketiv qere* הַבְּיאוּ Isa. 16.3 ‘give [fs advice]!’)

בָּו (4Q141 f1i.12 | L [BHS]: בָּאָו Deut. 32.17 ‘they came’)

אֶלְיָאָב (4Q138 f1.13 | L [BHS]: אֶלְיָאָב Deut. 11.6 ‘Eliab’)

נוּות (4Q78 f10–12.7 | L [BHS]: נָוּות Joel 1.19 ‘pastures of’)

הָרָץ (4Q79 f1–2.9 | L [BHS]: הָרָץ Hos. 2.2 ‘the earth’)

In living reading traditions that have survived down to modern times in Jewish communities in the Middle East a consonantal ’alef is generally pronounced, but is sometimes elided, especially between vowels, e.g.

¹¹ Data supplied by Aaron Hornkohl.

Aleppo

ha'ele (Katz 1981, 15 | L [BHS]: הָאֵל Gen. 48.1 ‘these’)

Baghdad

wearba'fim (Morag 1977, 13 | L [BHS]: וְאַרְבָּעִים Gen. 47.28
‘and forty’)

Yemen

bə'hi:w (Morag 1963, 3 | L [BHS]: בְּחִי Isa. 19.2 ‘against
his brother’)

Morocco

isra'il (Akun 2010, 65 | L [BHS]: יִשְׂרָאֵל Exod. 14.30 ‘Israel’)

The variants within the Masoretic tradition and the loss of *'alef* in the Qumran scrolls and modern living traditions reflect the vulnerability of consonantal *'alef* to weakening in reading traditions, which would have motivated orthoepic measures being taken to ensure their correct reading.

In the model Standard Tiberian manuscripts *'alef* that does not have a consonantal realization is sometimes marked with a *rafe* sign, e.g.

L: רָאשִׁי ‘my head’ (Psa. 40.13)

L: לֹא יָרַא ‘we do not fear’ (Hos. 10.3)

It is regularly marked in L on *'alef* between two vowels that is not read as consonantal, e.g.

L: יְמִינָתִ פָּ (Psa. 116.6) ‘the simple’

L: יְמִינָתְּ עַ (Psa. 104.12) ‘branches’

L: מִנְמָרְצָה (1 Chron. 12.9) ‘and like gazelles’

These words are listed in the Masora as cases where ‘alef is written but not read’.¹²

In some manuscripts with Non-Standard Tiberian vocalization the marking of *rafe* on non-consonantal ’alef is very frequent, e.g.

Codex Reuchlinianus:

מְשַׁלֵּח (Morag 1959, 218 | L [BHS]: מְשַׁלֵּח Isa. 23.1 ‘oracle’)

אֲבֹת (Morag 1959, 221 | L [BHS]: אֲבֹת Isa. 37.33 ‘(does not come’)

Genizah manuscripts

חִיאָבָה (T-S A11.1 | L [BHS]: חִיאָבָה Job 39.9 ‘will it be willing’) (Blapp 2017, 59)

שֹׁנְאָן (T-S A12.1 | L [BHS]: שֹׁנְאָן Prov. 29.24 ‘he who hates’) (Blapp 2017, 99)

אֲלֹל (T-S A12.1 | L [BHS]: אֲלֹל Prov. 29.24 ‘and not’) (Blapp 2017, 99)

In Non-Standard Tiberian manuscripts, ’alefs that are non-consonantal in the Standard Tiberian tradition are occasionally marked with *dagesh*. In some cases where the ’alef occurs word-internally, it is possible that these reflect consonantal readings of the ’alef, e.g.

מְאַטְּעָנָה (BL Add MS 21161, fol. 160v | L [BHS]: מְאַטְּעָנָה Psa. 104.12 ‘branches’)

¹² Ginsburg (1880, §13).

אֶשְׁמָעֵל (Codex Reuchlianus | L [BHS]: לֶשְׁמָעֵל Jer. 40.14
 ‘Ishmael’)

It is sporadically, however, marked on a word-final *'alef*, which must have been read as non-consonantal, e.g.

אַתָּה (T-S NS 248.2, Arrant 2020 | L [BHS]: אַתָּה Gen. 13.9
 ‘please’)

וַיִּשְׁאַל (T-S NS 248.2, Arrant 2020 | L [BHS]: וַיִּשְׁאַל Gen. 13.10
 ‘and he lifted’)

תִּירְאָה (T-S NS 248.2, Arrant 2020 | L [BHS]: תִּירְאָה Gen. 15.1
 ‘[do not] be afraid’)

In a few model Tiberian codices a *rafe* is marked on an *'alef* in the word יִשְׂרָאֵל where it would be expected to be consonantal, e.g.

C: בִּישְׂרָאֵל, L [BHS]: בִּישְׂרָאֵל, ‘in Israel’ (1 Sam. 3.11)

Yeivin (1978, 226) suggests that this phenomenon in the model manuscripts may indicate that in this proper name the *'alef* was not pronounced as consonantal, i.e. [jɪsr̩ɔ:’el].¹³

The marking of *rafe* on consonantal *'alef* is attested sporadically also in manuscripts with Non-Standard Tiberian vocalization, e.g.

אֲנָכִי (T-S A12.1, Blapp 2017, 99 | L [BHS]: אֲנָכִי Prov. 30.2
 ‘I’)

¹³ A possible parallel to this elision of the *'alef* can be identified in the proper name דָנִיאֵל [dənijə:el] ‘Daniel’ < *dāni-ʔēl. Yeivin notes that in both names the *'alef* is followed by the letter *lamed*.

בְּקַרְאָה (T-S A13.20, Blapp 2017, 174 | L [BHS]: בְּקַרְאָה Psa. 69.4 ‘with my crying’)

In Non-Standard Tiberian manuscripts that otherwise use *dagesh* extensively in consonantal ’alef, the ’alef in the word שָׁרָאֵל is often marked with *rafe* (Pilocane 2004, 28).

In Biblical manuscripts with Palestinian vocalization, both the *dagesh* sign (ׂ) and the *rafe* sign (ׄ) are found marked on consonantal ’alef, e.g.

Dagesh:

[וְ]אֲשֶׁר (Bod. Heb. e 30 ff. 48-49 | L [BHS]: אֲשֶׁר Isa. 6.11 ‘they lie waste’) (Kahle 1901, 278; Revell 1970a, 77)

Rafe:

[וְ]אֲשֶׁר וְ (Bod. Heb. e 30 ff. 48-49 | L [BHS]: אֲשֶׁר וְ Isa. 45.20 ‘and come’) (Kahle 1901, 287; Revell 1970a, 77–78)

It is unlikely that in these cases the marking of the *rafe* reflects the loss of consonantal value of the ’alef. The sign is likely to be intended to signal that the ’alef is consonantal but ungeminated.

In L one encounters vocalizations such as the following:

Num. 26.7: הַרְאֹוֹבִנִי (BHS: הַרְאֹוֹבִנִי; B: הַרְאֹוֹבִנִי; S: הַרְאֹוֹבִנִי)

Josh. 12.6: לְרֹאֹוֹבִנִי (BHS: לְרֹאֹוֹבִנִי; A: לְרֹאֹוֹבִנִי)

2 Kings 10.33: וְהַרְאֹוֹבִנִי (BHS: וְהַרְאֹוֹבִנִי; A: וְהַרְאֹוֹבִנִי)

Job 31.7: מְאֹם (BHS: מְאֹום) ‘blemish’ (A: מְאֹם)

Dan. 1.4: מְאֹם (BHS: מְאֹום) ‘blemish’ (*qere* note: מְאוּם)

The way these words appear in BHS, which does not mark *rafe*, would lead one to believe that the ’alef in L is a consonantal ’alef between two vowels. In the manuscripts the ’alef is marked with *rafe* and in manuscripts other than L there is only one vocalization sign, either *qibbus* before the ’alef or a *shureq* dot on the *vav*, indicating that the ’alef did not have a consonantal realization. The vocalization in L adds a *qibbus* sign on the letter preceding the ’alef. This is, therefore, a double marking of the *u* vowel that follows the consonant. The words should be read [hɔ:rū:ve:'ni:], [mu:um],¹⁴ as shown by other model manuscripts, and also by the *qere* note in Dan. 1.4. The double marking and *qere* note were strategies to ensure that the *u* vowel was pronounced immediately after the consonant.

I.1.2. *BET* (בֵּית)

Bet with *dagesh* (בּ): voiced bilabial stop [b]

Bet without *dagesh* (בִּ): voiced labio-dental fricative [v]

A *bet* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

According to *Hidāyat al-Qāri'*, the Tiberians called this letter by the name בִּי.¹⁵ This form of the name is also found in

¹⁴ The second [u] is an epenthetic, which is inserted after the long vowel in CVVC syllables (§I.2.4.).

¹⁵ Long version, edition in vol. 2 of this book, §II.L.1.1.2.

other Masoretic treatises, sometimes vocalized בֵּי,¹⁶ and the later recensions of *Hidāyat al-Qāri'*.¹⁷ It is referred to in Masoretic treatises also as בָּא.¹⁸ Both of these spellings represent the Arabic name of the letter, viz. *bā'*, which is pronounced *bē* due to *'imāla* in Arabic dialects (Nöldeke 1910, 131). This form of the name is found in some versions of *Sefer Yesira*.¹⁹

It is stated in *Hidāyat al-Qāri'* that the *bet* with *dagesh* is pronounced by closing the lips firmly.²⁰ In the Karaite transcriptions it is represented by Arabic *bā'* (Khan 1990a, 4, 2013).

According to *Hidāyat al-Qāri'*, *bet* with *rafe* is pronounced by closing the lips lightly. Taken by itself, this could be a description of a bilabial articulation of *bet rafe*. This is not confirmed, however, by other sources. The light closure of the lips would have accompanied a labio-dental articulation, and no doubt it is this secondary feature that the author refers to.²¹ Elsewhere in the *Hidāyat al-Qāri'* it is stated that *bet rafe* and consonantal *vav* have the same pronunciation:

¹⁶ Allony and Yeivin eds. (1985, 96), Baer and Strack (1879, 7, §6)

¹⁷ Arabic version of *Mahberet ha-Tijān* (ed. Neubauer 1891, 10), Hebrew version of *Mahberet ha-Tijān* (ed. J. Derenbourg 1871, 36).

¹⁸ E.g. *Hidāyat al-Qāri'* Long version, edition in vol. 2 of this book, §II.L.1.1., §II.L.1.1.2.; the treatise on the *shewa* edited by Levy (1936, ۱۷).

¹⁹ Eg. ed. Hayman (2004, 51).

²⁰ Long version, edition in vol. 2 of this book, §II.L.1.3.9. Eldar (1980, fols. 10b-11a, lines 84-88).

²¹ Cf. Eldar's (1980) commentary to this passage, n.75.

‘Every [consonantal] *vav* at the end of a word is pronounced, according to the Palestinians, with [the pronunciation of] *bet rafe*.’²²

This feature is alluded to also in a Masoretic treatise on the *shewa*:

‘Know that every *vav* which is prefixed to the beginning of a word and has *shewa* is read with (the pronunciation of) *bet*. ... I mean, it is pronounced as if it were the letter *bet*, as in ... וְאָמַר “and he shall say.”’²³

In some Karaite transcriptions into Arabic script, a fricative *bet* is occasionally transcribed by Arabic *wāw* and, vice versa, a Hebrew consonantal *vav* is sometimes transcribed by Arabic *bā’*. This is a reflection of the fact that the two sounds were the same, e.g. in the manuscript BL Or 2548:

عنوابيم (BL Or 2548 fol. 3r, 10 | L [BHS]: Isa. 5.4
‘grapes’)

وقويسي (BL Or 2548 fol. 42r, 3 | L [BHS]: Isa. 40.31 ‘those
who are hoping for’)

We know from David ben Abraham al-Fāṣī that in Palestine consonantal *vav* in these circumstances was pronounced as a

²² Long version, edition in vol. 2 of this book, §II.L.1.7.7. Eldar (1984b, Hebrew section, 10).

²³ אעלם אן כל ואו מזאָד פֵי אוֹל לְלִפְתָּה וְתַחַתָּה שֶׁואַיְקָרָא בְּבָא ... אַעֲנִי יְבָרֶג כִּאֵנָה (כו, נטול חֲרֵף בֵּית כְּקוֹלֶךְ ... וְאָמַר (ed. Levy 1936).

labio-dental (see the description of *vav* §I.1.6. for details). It follows, therefore, that *bet rafe* was a voiced labio-dental.

In a few sporadic cases *bet rafe* is represented by Arabic *fā'* in the Karaite transcriptions, e.g.

וְאַيּוֹב (Genizah MS 12, Khan 1990a, 151 | L [BHS]: ﴿ءَيْوَب﴾)

Num. 19.6 ‘and hyssop’

The transcription with *fā'* reflects the perception that this Arabic sound was close acoustically to the voiced labio-dental [v]. It is common in transcriptions of Hebrew in medieval Muslim sources, e.g.

عِرَافٌ (al-Bīrūnī, *Chronology of Nations*, ed. Sachau 1878,

277 | عِرْبَةٌ ‘desert’)

لَفَانَهُ (al-Bīrūnī, *Chronology of Nations*, ed. Sachau 1878,

187–192 | لَبَنَةٌ ‘moon’)

دَافُورَا (Ibn Khaldūn, Schreiner 1886, 253 | دَبَرَةٌ ‘Deborah’)

There are a few isolated occurrences of *pe* in place of fricative *bet* in biblical manuscripts from Qumran, which could be taken as evidence that the labio-dental pronunciation existed already in the Second Temple period, e.g.²⁴

בְּפָנוֹת (4Q6 f1a.3 | L [BHS]: בְּבָנֹת Gen. 34.1 ‘[to visit the] daughters [of the land]’)

²⁴ Data supplied by Aaron Hornkohl.

עַפְשׁוֹ (4Q78 f10–12.7 | L [BHS]: יְהוָה עֲבָשׂוֹ Joel 1.17 ‘[seeds of grain] have shrivelled’)

Similar interchanges of fricative *bet* with *pe* are attested in Jewish Palestinian Aramaic, alongside interchanges with *vav*, e.g. נְבָתֵּיִה ‘the Nabatean’, נְפָתֵיִה ‘the Nabatean’, נְיוֹתָאִי ‘the Nabateans’ (Dalman 1894, 74).

Hidāyat al-Qāri' describes the stop [b] as one of the primary letters (*‘usūl*) and the [v] as an additional secondary letter (*farṣ*).²⁵

I.1.3. *GIMEL גִּימֶל* (ג)

Gimel with *dagesh* (ג): voiced velar stop [g]

Gimel without *dagesh* (ג): voiced uvular fricative [ʁ]

A *gimel* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

In *Hidāyat al-Qāri'* the name of this letter is spelt גָמָל, which appears to reflect a different pronunciation from that of the normal Hebrew form of the name גִּימֶל, with stress on the final syllable.²⁶ In the Hebrew *Mahberet ha-Tijān*, a later recension of *Hidāyat al-Qāri'*, the name has the form גָמָל.²⁷

²⁵ Long version, edition in vol. 2 of this book, §II.L.1.2.

²⁶ The spelling גָמָל is used by ʼAbū al-Faraj Hārūn also in his grammatical text *al-Kitāb al-Kāfi* (ed. Khan, Gallego and Olszowy-Schlanger 2003, e.g. §I.25.35., §I.25.40., §I.28.2., §I.28.11., §I.28.12.) and by the anonymous Karaite author of the grammatical text *Kitāb al-Uqūd* (ed. Vidro 2013, 27, 317).

²⁷ Ed. Derenbourg (1871, 36).

Gimel with *dagesh* was a stop, which, according to *Hidāyat al-Qāri'*, was articulated with the middle of the tongue.²⁸ The Karaite transcriptions represent it by Arabic *jīm* or, occasionally, by *kāf*,²⁹ e.g.

הַגָּמֵל (BL Or 2539 MS A, fol. 63r, 3 | L [BHS]: Gen.

21.8 ‘to be weaned’)

كَبُور (BL Or 2554 fol. 11r, 7 | L [BHS]: Ruth 2.1

‘mighty’)

These Arabic letters were pronounced respectively as a voiced palatal plosive [j] and an unvoiced velar plosive [k^h]. This is the pronunciation described by the early Arabic grammarians Sibawayhi and al-Khalil (eighth century C.E.). Ibn Sīnā in the eleventh century describes *jīm* as pronounced slightly further forward.³⁰ The Karaite transcriptions usually render *gimel* with *dagesh* by Arabic *jīm* due to the latter being a voiced consonantal plosive close to the place of articulation of [g]. It was preferred to *kāf*, which differed from *jīm* in being not only voiceless but also aspirated. It was a general principle of the transcriptions that voiced sounds were transcribed by one that was voiced but of a slightly different place of articulation rather than by an unvoiced letter of the same place of articulation.

²⁸ וְאֶלְעָלָן טָבִי, Long version, edition in vol. 2 of this book, §II.L.1.3.7.; Eldar (1980, fols. 10a-10b, lines 61-73).

²⁹ Khan (1990, 4, 2013).

³⁰ Roman (1983, 101–6, 218)

Gimel without *dagesh*, on the other hand, was a fricative articulated further back, on ‘the posterior third of the tongue, which is adjacent to the pharynx, opposite the (soft) palate.’³¹ In the Karaite transcriptions, fricative *gimel* is transcribed by Arabic *ghayn*, which was pronounced as a uvular fricative in the Middle Ages according to the descriptions of the Arabic grammarians.³²

Hidāyat al-Qāri' describes the stop [g] as primary (*'asl*) and the fricative [ʁ] as secondary (*far'*).³³

I.1.4. DALET דָּלֶת (ד)

Dalet with *dagesh* (daleth) (ד): voiced post-dental stop [d]

Dalet without *dagesh* (daleth) (ד): voiced post-dental fricative [ð]

A *dalet* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

According to *Hidāyat al-Qāri'*, the Tiberians called this letter *dāl*, which is the name of the corresponding Arabic letter.³⁴

³¹ תלה אללسان ממא לי אלחלקים קודאם אלהנן, Long version of *Hidāyat al-Qāri'*, edition in vol. 2 of this book, §II.L.1.3.6.; ed. Eldar (1980, fol. 10a, lines 58-59).

³² Roman (1983, 218).

³³ Long version, edition in vol. 2 of this book, §II.L.1.3.6.; Eldar (1980, fols. 8b, 10a, 254, n.58). Watson (2007, 43–44) considers the uvular fricative [ʁ] in Modern Arabic dialects to be the emphatic counterpart of the dorsal [g], involving a primary dorsal and non-primary ‘guttural’ feature.

³⁴ Long version, edition in vol. 2 of this book, §II.L.1.1.2.

This term is found also in some versions of *Sefer Yesira* (סְפֵר יֶשִׁירָה),³⁵ and in the later recensions of *Hidāyat al-Qāri'*, e.g. Arabic *Mahberet ha-Tijān* (مَحْبِرَةُ التِّجَانِ),³⁶ Hebrew *Mahberet ha-Tijān* (מַחְבֵּרָת הַתִּגְאָן).³⁷

Hidāyat al-Qāri' states that the letter was articulated with ‘the extremity of the tongue in combination with the flesh of the teeth’, i.e. the gums.³⁸ Likewise, Saadya describes the place of articulation of *dalet* as being adjacent to the inside of the upper teeth.³⁹ When the letter had *dagesh*, the tongue was pressed firmly against the gums. When it was without *dagesh*, the tongue was pressed lightly against the gums. Both forms of the letter were articulated in the same place. The term ‘end of the tongue’ could include both the tip and the blade. Most versions of *Sefer Yesira* state that *dalet* was articulated with ‘the beginning of the tongue’,⁴⁰ but this is equally vague. The Spanish grammarian Ibn Janāḥ (eleventh century) specifies that it was articulated with the

³⁵ E.g. ed. Gruenwald (1971, 156), ed. Hayman (2004, 54).

³⁶ Ed. Neubauer (1891, 12).

³⁷ Ed. Derenbourg (1871, 36).

³⁸ טְרֵף אַלְלָסָן מִעַל חַם אַלְאַסְנָן, Long version, edition in vol. 2 of this book, §II.L.1.3.7.; ed. Eldar (1980, fol. 10b, ed. Eldar, 1980-81, lines 67-69).

³⁹ אֲנֹהָא תְּגַאַר אַלְאַסְנָן מִן ذַּלְקָן אַלְעַלְאָהָא; וַיְפִי דְּטָלָנָת ... Saadya, *Commentary on Sefer Yesira* (ed. Lambert 1891, 75).

⁴⁰ בְּרַאשׁ הַלְשׂוֹן (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98). According to Morag (1960), however, the phonetic descriptions in *Sefer Yesira* reflect the pronunciation of Hebrew in Babylonia, so it must be used with caution when reconstructing the Tiberian pronunciation tradition.

blade of the tongue and not the tip.⁴¹ This corresponds to the description in one version of *Sefer Yešira*, where it is stated that the letters דטלות were articulated with the ‘middle’ of the tongue.⁴² It is easier, however, to interpret *Hidāyat al-Qāri'* as referring to the contact between the tongue tip and the gums. An articulation with the blade of the tongue with the gums would have involved contact with the teeth.

Hidāyat al-Qāri' describes the stop [d] as primary (*'aṣl*) and the fricative [ð] as secondary (*far'*).⁴³

The medieval scholar Isaac Israeli (ninth–tenth centuries C.E.), who had an expert knowledge of the Tiberian reading tradition, is said to have pronounced fricative *dalet* with a secondary ‘emphatic’ articulation (i.e. pharyngealized with retraction of the tongue root and increased muscular pressure) in two words, viz. אֲפָלָנוּ ‘his palace’ (Dan. 11.45) and וַיִּזְרְכּוּ ‘and they have bent’ (Jer. 9.2). This was apparently due to the fact that the *pe* and the *resh* in these words were pronounced emphatic (see §I.I.1.17., §I.1.20.) and the emphasis spread to the *dalet*. The evidence for this is found in a commentary to *Sefer Yešira* by Dunash ibn Tamim, who was a physician in court of the Fātimids in Kairouan, North Africa, in the tenth century C.E. He was the pupil of Isaac Israeli, who also worked as a physician in Kairouan:

⁴¹ פָאֵן דָלֶךְ אַלְטְרָף לִיס הָוֹ אַסְלָה אַלְלָסָאָן בְּלִי מָא הָוֹ אַרְפָעָן מִן שְׁלָאַסְלָה קְלָלָא ‘This end (of the tongue) is not the tip of the tongue but what is slightly posterior to the tip’; *Kitāb al-Luma'* (ed. Derenbourg 1886, 28).

⁴² דטלות על חזי הלשון משתמשות, *Sefer Yešira* (ed. Hayman 2004, 93).

⁴³ Long version, edition in vol. 2 of this book, §II.L.1.2., Eldar (1980, fol. 8b, 254, n.58).

The Arabs have sounds that the Hebrews do not have, namely the *dād* of קָצֵב (*qaḍib*) and the *dā'* of עֲדִים (*'adīm*). The meaning of *qaḍib* is ‘rod’ or ‘sceptre’. It is written with *ṣade* with a dot above it. It is a distinct sound, which resembles *dalet rafe*. The meaning of *'adīm* is ‘huge’. It is written with *tet* with a dot above it. It is a distinct sound, which resembles *dalet rafe*. ... Our master Yiṣhaq, the son of our master Shlomo, of blessed memory, (i.e. Isaac Israeli) used to say that in the language of the Hebrews among the Tiberians there were (the sounds of) *dā'* and *dād* and he used to read יַטְעַ אֶהָלִי אֲפָלָנוּ (Dan. 11.45, L: יַטְעַ אֶהָלִי אֲפָלָנוּ), in which he used to pronounce *dā'* although *dalet* was written. He used to read וַיַּדְרְכּוּ אֹתָהּ (Jer. 9.2, L [BHS]: וַיַּדְרְכּוּ אֹתָהּ) and he pronounced לְשׁוֹנָם ‘they bent their tongue’), in which he pronounced *dād*, although *dalet* was written. The reason for all this was that he was an expert in the reading of the Tiberians.⁴⁴

Early in the history of Arabic, the distinction between the pronunciation of *dād* and *dā'* (ض) (ظ) broke down. In modern

⁴⁴ BHS erroneously reads L as أَهَلِي.

⁴⁵ ויש אצל הערבאים הברות שאינן נמצאות אצל העברים, והם הצדי מן קציב והטא מן עטיו. פ' קציב שבט או שרביט ונכתב בצד ונקודה מלמעלה והוא הברה בפני עצמה וגם היא דומה להברה דלת ברפי. ופ' עטום עצום ונכתב בטיטה ונקודה מלמעלה והוא הברה בפני עצמה וגם היא דומה להברה דלת ברפי ... והוא רבענא יצחיק בן רבענא שלמה ז"ל אומר כי יש בלשון העברים אצל הטא והצדוי והיה קורא ויטע אהלי אפטנו והיה מיסד הטא בלשונו והוא בכתב דלת. והוא קורא ויצרכו את לשונם והוא מייסד הצלד בלבשונו והוא בכתב דلت. וכל זה למה מפני שהיה בקי בקריאת בני טבריה cited by Mann (1931, 670, n.106). Cf. Schreiner (1886, 221), Dukes (1845, 9, 93), Grossberg (1902, 24).

vernacular dialects, the two have merged either to an emphatic stop *d* (mainly in urban dialects) or to an emphatic interdental *d̪* (mainly in Bedouin dialects) (Versteegh 2011). In medieval Judaeo-Arabic, a *sade* with an upper dot (ׁ) was used to represent Classical Arabic *dād* (دّ) and a *tet* was used to represent Classical Arabic *dā'* (ذ). As a result of their merger in the spoken language already in the Middle Ages, however, there was frequent confusion in the orthography of Judaeo-Arabic texts, in which a historical *dād* and a historical *dā'* were both represented by eitherׁ orׂ interchangeably.⁴⁶ The representation of a Hebrew *dalet* in the passage by bothׁ andׂ and the statement attributed to Isaac Israeli that ‘in the language of the Hebrews among the Tiberians there were (the sounds of) *dā'* and *dād*’ should be interpreted in this light. A single emphatic sound was no doubt intended, presumably the emphatic interdental *d̪* [ð̪], given the fact that the author in the passage states that these two emphatic Arabic letters resemble *dalet rafe*.

⁴⁶ Abū al-Faraj Hārūn in his *al-Kitāb al-Kāfi* refers to the pharyngealization of *dalet* in the words אַפְדָנָן (Dan. 11.45) and פְדָנָה ‘topaz’ (Exod. 28.17):

‘Indeed, in Arabic there are letters that are pronounced with sounds that are not found in Hebrew, such as *jim*, *dād* and others. Some teachers, however, when reading אַפְדָנָן ‘the tents of his palace’ (Dan. 11.45) and פְדָנָה ‘sardius, topaz’ (Exod. 28.17) pronounce the *dalet* in them like Arabic *dād* or *zā'* and these words sound like אַפְזָנָן and

⁴⁶ See the discussion by Wagner (2010, 28–32).

בְּפִתְּחָה. This, however, does not increase the number of letters, since the *dalet* has the same form, although the reading of it differs.⁴⁷

In some modern reading traditions, *dalet* is pharyngealized when in contact with an emphatic consonant. In the Moroccan reading tradition, for example, this is documented by Akun (2010) as occurring after emphatic [r^g], e.g.

jar^gd^gu (Akun 2010, 72 | L [BHS]: יָרַדְיו Exod. 15.5 ‘they went down’)

I.1.5. *HE* ה (הָ)

Glottal fricative [h]

The name of the letter is normally spelt הָ or הֵי, vocalized with *sere*, in the Masoretic treatises.

A dot in a final *he* indicates that the letter was to be pronounced as a consonant and was not merely a vowel letter (*mater lectionis*) for a final vowel, e.g. לה [ca:h] ‘to her’, but מלכה [malk^h:] ‘queen’. This dot is known as *mappiq* (מַפִּיק), meaning literally ‘bringing out, pronouncing’. In medieval sources, such as the Masoretic treatises, the term sometimes is vocalized as *mappeq* (מַפֶּק, מַפִּיק),⁴⁸ which is an Aramaic *haf’el* participle from

⁴⁷ Ed. Khan, Gallego and Olszowy-Schlanger (2003, §I.24.2): בְּלֹ פִּי: אלעֲרֵבִי מִן אַלְאָחָרֶף אַלְמַנְטוֹק בְּהָא פִּי כָּלָמָהָם מֵאַתְּ לְאַלְעֲרֵבָנִי נְחוּ אַלְגִּים וְאַלְצָאֵד וְגִירָהָם אַוְן כְּאֵן בְּעֵץ אַלְמַעַלְמִין אֲדָא קְרָא אֲהָלִי אַפְּדָנוּ וְאַדְם פְּטָה אַכְרָג אַלְדָּאֵל פְּיהָמָא כְּבָרוֹג אַלְצָאֵד אוּ אַלְטָא פִּי אַלְעֲרֵבִי פִּיסְמָע מְנָה בְּמִסְמָע אַפְּגָנָנוּ פְּטָשָׁה פְּלִיס דְּלֵךְ בְּזָאֵיד פִּי עַדְךָ אַלְאָרֶף אֲדָאֵל צְוָרְתָהָא אַחֲדָה אַוְן אַכְתָּלְפָת אַלְקָרָאָה.

⁴⁸ E.g. CUL T-S D1.2.

the root *n-p-q* ‘to come out’. This is the earlier form of the term, *mappiq* being a later Hebraization. Some manuscripts of Masoretic treatises vocalize the term *mappaq* (מְפָקֵחַ).⁴⁹ In *Hidāyat al-Qāri'* the consonantal pronunciation of *he* was referred to as ‘appearance’ (*duhūr*).⁵⁰

The *mappiq* is in principle marked in consonantal *he* only at the end of a word since in vocalized texts it is only in this context that there would be ambiguity of reading, e.g. יָלִדֶה [jal'də:ch] ‘her child’ as opposed to يָלִדָה [jal'də:] ‘girl’. At the beginning or in the middle of a word, a consonantal pronunciation in the onset of a syllable is indicated by a vowel sign on the letter or a following vowel letter, e.g. הָאֹורֶתֶן ‘the light’ (Gen. 1.3), הָלֹךְ ‘it will go’ (Psa. 85.14), הָוִילְעָדָה ‘his giving birth to’ (Gen. 5.4) or by a *shewa* sign in a syllable coda, e.g. פְּדָהָצָרָאֵל [p^haðə:ʃə'el] ‘Pedahel’ (Num. 34.28). A word-medial *he* that does not have a vocalization sign or is not followed by a vowel letter must be read as a vowel letter, e.g. פְּדָהָצָרָעָרָאֵל [p^haðə:ʃə's^hur^h] ‘Pedahzur’ (Num. 1.10; despite the normal English spelling of the latter, the *he* is not pronounced according to the Tiberian reading tradition).⁵¹ In some manuscripts, however, consonantal *he* is marked with *mappiq* within a word. This is found in particular in words of unusual form in which consonantal *he* is pointed with *shewa*, e.g. L and S בְּהַשְׁמָה [bəhʃam'mə:] ‘when it lies desolate’ (Lev. 26.43), S פְּדָהָאָלָה [p^haðə'a:ləh]

⁴⁹ E.g. MS S27, fols. 1r-1v, *Hidāyat al-Qāri'*, short version, edition in vol. 2 of this book, §II.S.2.0.

⁵⁰ Long version, edition in vol. 2 of this book, §II.L.1.3.4.; Eldar (1980, fol. 9b, line 31).

⁵¹ Ofer (2013).

[p^haðah'ʔe:el] ‘Pedahel’ (Num. 34.28).⁵² In such contexts, the consonantal *he* was evidently felt to be at particular risk of being read incorrectly.

In the manuscript A the dot of the *mappiq* in word-final *he* is often placed low in the letter, as in Prov. 5.19 shown below, and is occasionally written under the letter:⁵³



BHS: בְּאַהֲבָתֶךָ ‘with her love’

Mappiq is frequently written under final consonantal *he* in manuscripts with Non-Standard Tiberian (Non-Standard Tiberian) vocalization, e.g.

Genizah manuscripts

הִגְיָעָה (T-S A11.1, Blapp 2017, 51 | L [BHS]: הִגְיָעָה Job 39.16 ‘her labour’)

לְהָ (T-S A11.1, Blapp 2017, 51 | L [BHS]: לְהָ Job 39.17 ‘to her’)

אֱלֹהָ (T-S A11.1, Blapp 2017, 51 | L [BHS]: אֱלֹהָ Job 40.2 ‘god’)

In Non-Standard Tiberian manuscripts from the Genizah, the *mappiq* is occasionally written in the lower half of the letter (Blapp 2017, 112, 128).

⁵² Yeivin (1980, 285).

⁵³ Yeivin (1968, 49–50).

European manuscripts

בְּקֶרֶבֶת (Codex Reuchlinianus | L [BHS]: Isa. 19.14 ‘within her’)

הַתִּמְעָן (Codex Reuchlinianus | L [BHS]: Isa. 19.17 ‘her [obj.]’)

הַגְּבוּנָה (Codex Reuchlinianus | L [BHS]: Isa. 19.19 ‘its boundary’)

כְּגֹבֶה (BL Add 21161 | L [BHS]: Amos 2.9 ‘like the height’)

Mappiq in the form of a dot under a final consonantal *he* is also found in some manuscripts with Palestinian vocalization, e.g.

פְּרִיָּה וְטוּבָה (T-S 12.197, Kahle 1927, II, 80; Revell 1970a, 95 | L [BHS]: Jer. 2.7 ‘its fruits and its good things’)

In Non-Standard Tiberian manuscripts, a *mappiq* is occasionally written on a word-internal or even a word-initial consonantal *he* with a vocalization sign. In such cases, it is written within the letter, e.g.

Genizah manuscripts

נְהֻרוֹת (T-S A13.35, Blapp 2017, 191 | L [BHS]: Psa. 74.15 ‘streams’)

וְהַתְּعַלְמָת (T-S A5.12, Arrant 2020 | L [BHS]: Deut. 22.4 ‘and you ignore’)

יְהִי (CUL Or 1080.A4.18, Arrant 2020 | L [BHS]: Num. 28.19 ‘they shall be’)

הַזֶּה (T-S NS 284.85, Arrant 2020 | L [BHS]: הַזֶּה Exod. 3.21
‘this’)

European manuscripts

וְהִי (Codex Reuchlinianus, Morag 1959, 219 | L [BHS]:
וְהִי 1 Kings 2.2 ‘and you will be’)

Mappiq in Non-Standard Tiberian manuscripts is sporadically marked even where the *he* has the function of a *mater lectionis*.

מְשֻׁבָּה (T-S NS 68.22, Arrant 2020 | L [BHS]: מְשֻׁבָּה Deut.
28.12 ‘work of’)

וּמְפֵה (T-S AS 8.123, Arrant 2020 | L [BHS]: וּמְפֵה Lev. 24.21
‘and he who strikes’)

It is significant that in A and in Non-Standard Tiberian manuscripts that mark *mappiq* under the *he*, when a dot is marked within consonantal *'alef*, it is, by contrast, always written within the letter. Moreover, whereas the Masora refers to the dot in *'alef* in the four canonical places (§I.I.1.1.) as *dagesh*, the term *dagesh* is never used to refer to the *mappiq*. The Masoretic notes and treatises generally refer to cases of *mappiq* in statements containing the participle *mappeq* ‘to pronounce’ such as

מלין מן חד וחדר מפקין ה'

‘Unique words in which one pronounces *he*’ (Ginsburg 1880, §36)

This demonstrates that the *mappiq* does not represent gemination. Moreover, *he* is not geminated in any other context.

On some occasions in Non-Standard Tiberian manuscripts, a final consonantal *he* is marked with a *shewa* sign, e.g.

Genizah manuscripts

אֱלֹהָה (T-S A11.1, Blapp 2017, 47 | L [BHS]: אֱלֹהָה Job 39.17
'God')

יְגַבֵּיה (T-S A11.1, Blapp 2017, 48 | L [BHS]: יְגַבֵּיה Job 39.27
'it mounts')

European manuscripts

תִּנְגַּנְתָּה (Codex Reuchlinianus | L [BHS]: תִּנְגַּנְתָּה Isa. 13.10 '[does not] give light')

When word-final *he* acts as a vowel letter, it is sometimes, though not regularly, marked with *rafe* in the model Tiberian manuscripts, e.g.

L: תֵּהַ לֹּא־יָכַל 'she was not able' (Exod. 2.3)

L: תֵּהַ חִזְקָה 'he saw' (Isa. 1.1)

L: תֵּהַ סְרָה 'apostasy' (Isa. 1.5)

Rafe is written more regularly in some Non-Standard Tiberian manuscripts, e.g.

Genizah manuscripts:

תֵּשֶׁבֶת אֲ (T-S A11.1, Blapp 2017, 56 | L [BHS]: תֵּשֶׁבֶת אֲ Job 39.23 'quiver')

מִלְחָמָה אֲ (T-S A11.1, Blapp 2017, 59 | L [BHS]: מִלְחָמָה אֲ Job 39.25 'battle')

הַשְׁמָרָה (T-S A11.1, Blapp 2017, 59 | L [BHS]: הַשְׁמָרָה Job 40.20
‘the field’)

European manuscripts

הַמִּחְמָה (Codex Reuchlinianus | L [BHS]: 1 Sam. 23.8 ‘to war’)

קְעִילָה (Codex Reuchlinianus | L [BHS]: 1 Sam. 23.8
‘Keilah’)

הַנֶּשֶׁשׁ (BL Add 21161 | L [BHS]: הַנֶּשֶׁשׁ Amos 2.10 ‘year’)

Some Non-Standard Tiberian manuscripts mark a *rafe* sign on *he* in contexts where it is consonantal in the Standard Tiberian tradition, e.g.

אֲהֵה (T-S A13.20, Blapp 2017, 174 | L [BHS]: אֲהֵה Psa. 68.36
‘he’)

הַזְּעִינָנִי (T-S A13.20, Blapp 2017, 174 | L [BHS]: הַזְּעִינָנִי Psa.
69.2 ‘save me!’)

בְּמֹקְהָלוֹת (T-S A13.20, Blapp 2017, 175 | L [BHS]: בְּמֹקְהָלוֹת
Psa. 68.27 ‘in the congregation’)

יְהֹוָה יְהֹהָה (T-S A13.20, Blapp 2017, 175 | L [BHS]: יְהֹהָה Psa.
68.28 ‘Judah’)

Here the *rafe* should, it seems, be interpreted as signalling that the letter is consonantal but not geminated.

The Masora identifies a number of cases where a word-final *he* that would be expected to be consonantal is not pronounced:

חד מן יי' ח לא מפק' ה' בסוף תיבותה

‘One of eighteen cases in which *he* is not pronounced at the end of the word’ (Ginsburg 1880, §37)

This list includes cases where the *he* has the meaning of a 3fs suffix. In some cases, a *rafe* is marked over the *he* in L, e.g.

- L: וַתְּמַרֵּה ‘and she daubed it (fs)’ (Exod. 2.3)
- L: הַוְסָדָה ‘its being founded’ (Exod. 9.18)
- L: עַזְנָה ‘its (fs) iniquity’ (Num. 15.31)
- L: אֶצְדָּה ‘its (fs) side’ (1 Sam. 20.20)

Another Masoretic note lists pairs of words ending in *he*, in one member of which it is pronounced consonantal and in the other it is not:

חד מן יי' א זוגין חד מפק' ה' וחד לא מפק' ה' בסוף תיבותה

‘One of eleven pairs, in one of which *he* is pronounced and the other *he* is not pronounced at the end of the word’ (Ginsburg 1880, §38)

Some words in this list exhibit what are clearly variant realizations of the 3fs suffix. In some cases where the *he* is a vowel letter a *rafe* is marked over the *he* in L, e.g.

- L: וְשִׁיעָרָה ‘and its (fs) hair’ (Lev. 13.20)
- L: וְשִׁיעָרָה ‘and its (fs) hair’ (Lev. 13.4)
- L: וְאַתָּנָגָה ‘and her hire’ (Isa. 23.18)
- L: לֹאֲתָנָגָה ‘to her hire’ (Isa. 23.17)

Examples of such 3fs suffixes without consonantal realization could be interpreted as the phonetic weakening of a final consonantal *he* that has become fixed in the reading tradition.

Alternatively, it may be morphological variation, reflecting different dialectal forms at an earlier period, which has become fixed.

There is ample evidence from the Dead Sea scrolls of the vulnerability of consonantal *he* to weakening in the Second Temple period. The cases of weakening that are discernible in the orthography are between vowels, e.g.⁵⁴

אֶתְחָרִים (4Q6 f1.10 | L [BHS]: אֶתְחָרִים Gen 48.6 ‘after them’)

אֱלֹהִים (8Q4 f1.35 | L [BHS]: אֱלֹהִים Deut. 11.16 ‘gods’)

לְעַלּוֹת (4Q51 9e–i.9 | L [BHS]: לְעַלּוֹת 1 Sam 10.8 ‘to offer [sacrifices]’)

וּמְטוּחוֹ (1QIsa^a 10.11 | L [BHS]: וּמְטוּחוֹ Isa. 10.24 ‘his staff’)

מֵשְׁתְּרֵעַ (1QIsa^a 22.26 | L [BHS]: מֵשְׁתְּרֵעַ Isa. 28.20 ‘[is too short] to stretch out’)

מַתְּלוֹת (1QIsa^a 24.18 | L [BHS]: מַתְּלוֹת Isa. 30.10 ‘illusions’)

לְשֻׁמְיעַ (1QIsa^a 47.26 | L [BHS]: לְשֻׁמְיעַ Isa. 58.4 ‘to make heard’)

בְּתַהְמוֹת (1QIsa^a 51.9 | L [BHS]: בְּתַהְמוֹת Isa. 63.13 ‘through the depths’)

Weakening of consonantal *he* occurs also in modern reading traditions. This includes the weakening of final *he* written with *mappiq* in the vocalized text, e.g.

⁵⁴ Data supplied by Aaron Hornkohl.

Aleppo

lebad'da (Katz 1981, 13 | L [BHS]: לְבָדָה Exod. 22.26 ‘by itself [fs.]’)

missob'fa (Katz 1981, 13 | L [BHS]: מִשּׁוּבָה Ruth 2.18 ‘from her satisfaction’)

Morocco

sara'ta (Akun 2010, 67 | L [BHS]: שָׁרַתָּה 1 Sam. 1.6, ‘her rival wife’)

salu'ta (Akun 2010, 67 | L [BHS]: שָׁלַעֲתָה 1 Sam. 1.7 ‘her going up’)

Kerala

hasa'ba: (Forsström 2013, 461 | L [BHS]: חָשַׁבָּה Gen. 50.20 ‘he meant it [fs.]’)

In the Babylonian reading tradition, a *mappiq* occurs in a 3fs verbal object suffix attached to a 3fs suffix conjugation form and after an energetic *nun* (Yeivin 1985, 336). In both these contexts the suffix is regularly non-consonantal in the Tiberian tradition. The Babylonian *mappiq* is a small superscribed *he*:⁵⁵

וְשִׁלְלֵתָה [wʃikkʰal'la:ttʰɔ:h] (וְשִׁלְלֵתָה) Ezek. 14.15 ‘and you will make it (f) childless’

וְכֻלְלֵתָה [wχe:ʃas'sa:ttʰɔ:h] (וְכֻלְלֵתָה) 1 Sam 1.6 ‘and she provoked her’

⁵⁵ Data supplied by Shai Heijmans.

יבְלַעַנָּה [jivla:nna:h] Isa. 28.4 ‘he will swallow it (f.)’

This is most easily interpreted as reflecting the fact that the Babylonian and Tiberian traditions here have different morphological forms of the 3fs suffix. The occasional occurrence of a non-consonantal variant of the 3fs suffix in the Tiberian tradition in other contexts, therefore, could also be the result of morphological variation.

I.1.6. VAV וָ (וֻ)

Labio-dental [v] and labio-velar semi-vowel [w]

In *Hidāyat al-Qāri'* the name of this letter is spelt וָ, which represents, it seems, the corresponding Arabic name (*wāw*).⁵⁶

According to *Hidāyat al-Qāri'*, the place of articulation was the lips.⁵⁷ This could be referring to a bilabial [w] or labio-dental [v] pronunciation. It is, however, explicitly stated by David ben Abraham al-Fāsī (tenth century C.E.), the Palestinian Karaite lexicographer, that in Palestine consonantal *vav* both with and without *dagesh* was pronounced as a labio-dental. He makes this observation in the entry in his dictionary, *Kitāb Jāmi' al-'Alfāz* ('The book of the collection of words') on the name פָּנָה:

תֹּלְעֵוָה וִפְרָה (Gen. 46.13): name of a man. The accent is on the *vav* and it is read *rafe*. The pronunciation of the *vav* in it is like the way the Palestinians (pronounce the letter in words) such as הָאָה ‘be!’ (Gen. 27.29), הָאָה ‘ill’ [fs.] (Lev.

⁵⁶ E.g. short version, edition in vol. 2 of this book, §II.S.2.2.

⁵⁷ Long version, edition in vol. 2 of this book, §II.L.1.3.9.

20.18, etc.), ‘it watered’ (Isa. 55.10). Some of the teachers have made a mistake by reading it (like the *vav* in) רִיחַ ‘spirit’ and נִיחֹוחַ ‘soothing’. This is because whenever the accent is on the letter before a *vav*, its pronunciation is light, between the lips, as in רָוחַ ‘spirit’ and נִיחֹוחַ ‘soothing’, יְהוּשָׁעַ ‘Joshua’, לְנַעַט ‘to sway’ (Jud. 9.9, etc.), יָדַעַ ‘to hear’, יֵדַעַ ‘to know’, נֶחָם ‘Noah’, מֶחָם ‘brain’. Its pronunciation (i.e. the *vav* of פִּיהַ), like every (consonantal) *vav* in our (reading tradition), both light (i.e with *rafe*) and with *dagesh*, is between the upper teeth and the lower lip. Examples with *dagesh* are: יִצְאָה קָום ‘their speech went out’ (Psa. 19.5), צָום ‘he commanded them’ (Gen. 50.12, etc.), צָוָה ‘as he commanded’ (Gen. 7.9, etc.), ‘that he commands’ (Gen. 18.19, etc.). Examples with light (*vav*) are: הַזָּהָה עַל־תָּהָהָה ‘disaster upon disaster’ (Ezek. 7.26), וְרִיחַ לְשָׁאוֹל ‘(you) be for them a king’ (Neh. 6.6), לְהַטֵּל מֶלֶךְ ‘and Saul was refreshed’ (1 Sam. 16.23), ‘those who wait for me will not be put to shame’ (Isa. 49.23). Now, תֹּולֶעֶת וְפֻהָה (Gen. 46.13) is like this.⁵⁸

Al-Fāsī makes the point here that consonantal *vav* in all contexts is pronounced as a labio-dental [v]. The only exception is constituted by words that contain a *vav* followed by a guttural

⁵⁸ Kitāb Jāmi‘ al-‘Alfāz, ed. Skoss (1936, vol. 2, 451-452): תולע וְפֻהָה אָסָם בְּרֹאָה פִּי אַלְיוֹן וְקָרְאָתָה רַפִּי וּבְרוֹגָה פִּיהַ אַלְיוֹן כְּרָאִי אַלְשָׁמָמִין מִתְּלָהָה דָה הַרְוָה וְקָד גָּלַט בְּעַלְלָמָעַלְמִין אַלְדִּי יִקְרֹוּה מִתְּלָהָרָוָה נִיחֹוחַ וּלְאַנְכָּן כָּל וּוּיְכוֹן אַלְלָחָן פִּי אַלְחָרָף אַלְדִּי קְבָלָה יְכוֹן בְּרוֹגָה מִכְפָּפָה בֵּין אַלְשָׁפְתִין מִתְּלָהָרָוָה נִיחֹוחַ יְהוּשָׁעַ לְנַעַט שְׁמֹועַ יְדָעַ נֶחָם כְּבָרוֹגָה כָּל וּוּיְכוֹן אַלְמַכְפָּפָה אַלְמַדְגָּשָׁה בֵּין אַלְאַסְנָאָן אַלְפּוֹקָאנָה וְאַלְשָׁפָה אַלְסְפָּלָאָנָי אַעֲנִי בְּאַלְמַדְגָּשָׁה מִתְּלָהָרָוָה נִיחֹוחַ צָום כְּאַשְׁר צָוָה אֲשֶׁר יִצְהָה וְאַעֲנִי בְּאַלְמַכְפָּפָה מִתְּלָהָרָוָה עַל הַזָּהָה הַזָּהָה לְהַטֵּל מֶלֶךְ וְרִיחַ לְשָׁאוֹל לֹא יְבָשָׂוּ קְנָץ. ומִתְּלָהָרָוָה אַלְאַנְכָּן תֹּולֶעֶת וְפֻהָה.

with a furtive *patah* such as רִיחַת and נִיחַת, where it is pronounced ‘light, between the lips’. This must be referring to a bilabial glide between the vowel and the following *patah* [r̩u:wah], [ni:hɔ:wah].

It is stated in the Masoretic treatises that consonantal *vav* had the same pronunciation as *bet rafe*, e.g.

Every *vav* at the end of a word is pronounced according to the Palestinians as a *bet rafe*. (*Hidāyat al-Qāri'*)⁵⁹

Know that every *vav* that is prefixed to the beginning of a word and has *shewa* is read with (the pronunciation of) *bet*. ... I mean it is pronounced as if it were the letter *bet*, as in ... וְאָמַר ‘and he shall say.’ (*Treatise on the Shewa*)⁶⁰

Al-Fāṣī indicates that the *vav* in the name פָוָה (Gen. 46.13) was pronounced like other cases of consonantal *vav*, i.e. as labiodental [v]. He says, however, that some teachers mistakenly read it as a bilabial [w]. This implies that there were different traditions of pronouncing the *vav* in this context. Misha'el ben 'Uzzi'el (tenth-eleventh century) makes the following observation about the pronunciation of *vav* in this word in his *Kitāb al-Khilaf*:

As for the word פָוָה (Gen. 46.13), there is a consensus that it has a *vav* that (is pronounced) in the way it is read in

⁵⁹ Long version, edition in vol. 2 of this book, §II.L.1.7.7.

⁶⁰ אעלם אן כל ואו מזאָד פֵי אוֹל לְלֶפֶתָה וְתַחַתָה שָׁוֹא יִקְרָא בְּבָא ... אַעֲנִי יִבְרָג כֹּאָה כו... מִתְּלַחֲרֵף בֵּית כְּקוֹלֶךָ ... וְאָמַר (ed. Levy 1936, 20).

Iraq, not like *bet rafe*, as in words such as עֲנוּמִים ‘poor’ and so forth (in the pronunciation) of the Palestinians.⁶¹

The consensus referred to here is between the foremost Tiberian Masoretic authorities Ben Asher and Ben Naftali. They pronounced the *vav* in this word in the Babylonian fashion, i.e. as a bilabial [w], not like the labio-dental pronunciation of a *bet rafe*. This was presumably conditioned by the preceding [u:] vowel: [fu:wɔ:c:>.

In Non-Standard Tiberian manuscripts, there are sporadic cases of fricative *bet* being written where Standard Tiberian orthography has a consonantal *vav*, which reflects their identical phonetic realization, e.g.

וּבְגָאוֹתָהוּ (T-S A5.7, Arrant 2020 | L [BHS]: Deut. 33.26 ‘and in his majesty’)

הַחְוִילָה (T-S A21.125, Arrant 2020 | L [BHS]: Gen. 2.11 ‘Havilah’)

שֵׁב (T-S AS 44.35, Outhwaite 2020 | L [BHS]: שׁוֹא Lam. 2.15 ‘emptiness’)

In Karaite transcriptions into Arabic script, a *vav* is generally transcribed by Arabic *wāw*. It is sometimes, however, transcribed by the Arabic letter *bā'*. Arabic *bā'* is used elsewhere to transcribe both plosive *bet* [b] and fricative *bet* [v]. The occa-

⁶¹ ואما לפטה ופוה מא פיה בא' ב' עלי מא יקרא באלוראק לא בשבה אלבי אלרפי, *אענין מטל ענויים וגידרא לשלשאמיזן*, *Kitāb al-Khilaf* (ed. Lipschütz, 1965, p. c).

sional use of *bā'* to transcribe *vav* indicates that scribes were confusing the labio-dental realization [v] of *vav* with that of *bet rafe*. It is attested as a transcription of medial and final *vav*, e.g.

גָּבְעַנּוּ: (Genizah MS 1, Khan 1990a, 45 | L [BHS]: غَابَعْنُو

Num. 20.3 ‘we had expired’)

הַמִּצְוֹת: (Genizah MS 1, Khan 1990a, 45 | L [BHS]: هَمِصْوَاتٌ

Num. 15.22 ‘the commandments’)

وَقُوبَيْ: (BL Or 2548 fol. 42r, 3 | L [BHS]: وَقُوبَيْ Isa. 40.31 ‘those

who are hoping for’)

בְּגִדְעֹן: (Genizah MS 1, Khan 1990a, 45 | L [BHS]: بَغِيدُون

Num. 19.19 ‘his clothes’)

Examples are attested in manuscripts of the transcription of consonantal *vav* with *bā'* when preceded by long [u:], e.g.

وَسَقْوَبَائِي [vaʃiqqu: 'va:aj] (BL Or 2551 fol. 67r, 9 | L [BHS]:

וְשִׁקְשִׁי Psa. 102.10 ‘and my drinks’)

This corresponds to al-Fāṣī’s description of the *vav* in this context in the word פָּה as a labio-dental [fu:'vɔ:], but not the bilabial pronunciation [fu:'wɔ:] that is ascribed by Misha'el ben 'Uzzi'el to Ben Asher and Ben Naftali.

There is even one documented case of *bā'* transcribing a glide before a furtive *patah*:

نُوب [‘no:vaf] (Genizah MS 13, Khan 1990a, 155 | L [BHS]:

וְנוּב Psa. 109.10 ‘and wander’)

This does not correspond to al-Fāṣī’s description of a bilabial [w] in this context.

The medieval sources, therefore, reflect a variety of different distributions of the labio-dental [v] pronunciation of consonant *vav*. These are summarized below:

	Default	After pretonic [u:]	Glide after [u:]/[o:]
Misha’el	[v]	[w]	?
al-Fāṣī	[v]	[v]	[w]
Transcriptions	[v]	[v]	[v]

It should be pointed out that the transcription in which the form نُوب [‘no:vaf] is attested is a liturgical florilegium of biblical verses and exhibits several other deviations from Standard Tiberian reading.

We learn from the passage in the *Treatise on the Shewa* cited above that an initial conjunctive *vav* with a *shewa* was pronounced as a labio-dental like *bet rafe*, e.g. וְמַאֲרֵ [vɔ?ɔ:’ma:aR] ‘and he will say’. How was conjunctive *vav* pronounced when it has the form ו, i.e. before the labial consonants ב and פ or before a silent *shewa*? This is described in a further passage from the *Treatise on the Shewa*:

When the *vav* is next to these three letters, namely וּמְבָ, it should not be pronounced in this way (i.e. like *bet*) and it is not pointed with *shewa*, but rather with one point in the

body of the *vav*, as in וְבָנֶה ‘and he will build’ (Josh. 6.26, etc.), וְבָרָא ‘and you will clear it’ (Josh. 17.18), וְבָרָא ‘and he will create’ (Isa. 4.5), נִבְיֹת ‘and the discernment of’ (Isa. 29.14), וּבָרֵךְ ‘and clean’ (Job 11.4), וְפָנֵן ‘and lest’ (Deut. 4.9, etc.), וְפָנַח ‘and he will turn’ (Deut. 31.20, etc.), וְפָוֵט ‘and Put’ (Gen. 10.6), וְפִי ‘and the mouth of’ (Exod. 39.23, etc.), וְפָזָל ‘and beans’ (2 Sam. 17.28), וְפָחָד ‘and breathe’ (Ezek. 37.9), וְמֶלֶךְ ‘and king’ (Gen. 14.2, etc.), cf. וְמֶלֶכְתָּה ‘her royal office’ Esther 1.19), וְמֶשְׁלֵךְ ‘and the ruler’ (Gen. 45.8, etc.), וְמֶקְלֵךְ ‘and his staff’ (Hos. 4.12), וְמֶעֱלֵךְ ‘and from upon’ (1 Sam. 6.5, etc.), וְמִעַל ‘and he acted treacherously’ (cf. מִעַל Josh. 22.20). Nothing of this category is found that is pointed or read בְּנָה, בְּנָה, or בְּנָה, because these three letters are different from the other letters in this respect. When they read them (i.e. these words), it is not pronounced *bet*; I mean, the *vav* in them is not pronounced *bet*, as the aforementioned cases that have *shewa*. Rather, you read their *vavs* as if you are pronouncing אַ, as if you are saying אַפְנָה אַמְלָךְ, אַבְרָא, אַבְנָה. You should read all of them in this way. You need not read with a pure *'alef*, for an *'alef* does not appear in them, but I have only compared it (to *'alef*) by way of approximation. ... And if the second letter of the words has *shewa*, then it is always pointed and read with a point in the body of the *vav* and it is not read as *bet*, I mean with *shewa*, rather it is read as a pure *vav*, as in לְלִי ‘and regarding Levi’ (Deut. 33.8), עַמְשֵׁל ‘and hear’ (Exod. 23.21, etc.), וְדָבֵר ‘and the matter of’ (Num. 23.3),

⁶² וְקַרְאָה ‘and call’ (Ruth 4.11, etc.), וְרֹדֵה ‘and have dominion over’ (Gen. 1.28, etc.), and other cases.

According to this passage, the onset of the syllable represented by conjunction ו was not 'alef. It would be inappropriate, therefore, to transcribe it as [?u:]. This, moreover, would be a heavy CVV syllable, with a consonantal onset and long vowel in the rhyme. This would be an unexpected syllabic structure for a particle that has *shewa* in other contexts, when compared to the syllable structure of particles such as בְּ and נְ. These latter particles have a short vowel in an open syllable, represented by *shewa* (i.e. [ba], [la], see §I.2.5.1.) or a short vowel in a closed syllable when followed by a silent *shewa*, e.g. לִשְׁמוֹאֵל [lismu:'?eel] ‘to Samuel’. It would be more appropriate to interpret the syllable structure of conjunctive *vav* ו as [wu], with a voiced labio-velar approximant [w] as onset. Such a voiced onset would resemble the vowel nucleus [u] in acoustic and articulatory properties, and therefore would be difficult to distinguish from a long [u:].

אלכָרְגּוֹג וְלֹא תַנְקֶט בְשׁוֹא בְבִנְקָתָה וְאַחֲדָה פִי גּוֹן אַל וּמִתְלָ וּבְנָה וּבְרָא וּבִנָתָ וּבְרָוֹן וּפְנָה וּפְטוֹת וּפְפֻלְּ וּפְחֵי וּמְלָךְ וּמְלָכָתָ וּמְוּשָׁלָ מְקָלָ וּמְעַל וּמְעַל וּלְיסָ יְגַדָּ פִי הָדָא אַלְגָּנָס אַלְבָתָה שִׁי יְנַקְּט וְלֹא יְקָרָא וּבְנָה וְלֹא וּמְשָׁל וְלֹא וּפְטוֹת לְאַנְהָדָה אַלְתָלָתָה אַחֲרָיָה מְכַאֲלָפָה לְסָאִיר אַלְאַחֲרָיָה פִי הָדָא וְאַדָּא קְרוֹהָא לֹא יְקָאַל בָּבָ עָנֵי לֹא יְקָרָא פִיהָא אַלְוֹ בְבָ כְּמָא תְקָרָא אַלְאַלְהָא אַלְדִּי בְשׁוֹא בְלִתְקָרָא וְאוֹתָהָא כְאַנְכָּתְבָהָא בָאָו כְאַנְכָּתְקָול אַבְנָה אַבְרָא אַמְלָךְ אַפְנָה עַל הָדָא אַלְמַתָּל תְקָרָא כְלָהָא וְלֹא יְגַב תְקָרָא בְאַלְמָחָ וְלֹא יִבְנֶן פִיהָא אַלְפָ וְאַגְּמָא מַתְלָתָ לְךָ בְאַלְתְקָרִיב וְכַדָּ ... וְאַن כְאָן אַחֲרָי אַלְתָאָנִי מִן אַלְתִּיבוֹת בְשׁוֹא פְכָלָה יְנַקְּט וְיְקָרָא בְנַקְטָה פִי גּוֹן אַלְוֹא וְלֹא יְקָרָא בָאָעָנִי בְשׁוֹא בְל (CUL Or 1080.13.3.2, fol. 1r-1v and Levy ed., 1936, (בז). See on this passage Posegay (2019).

The Karaite transcriptions, indeed, represent the conjunction ו with an initial Arabic *wāw* and not an Arabic *'alif*. In some transcriptions, word-initial ו is represented by Arabic *wāw* vocalized with a Hebrew *qibbus*, e.g.

וּלְנָכֶדְיִ (BL Or 2539 MS A, fol. 65r, 3 | L [BHS]: Gen.

21.23 ‘to my posterity’)

וַתִּכְלֵל (BL Or 2539 MS B, fol. 124v, 9 | L [BHS]: Num.

17.25 ‘so that you may make an end’)

Elsewhere in the manuscripts long [u:] is transcribed with a *shureq* point in *wāw*, e.g.

אַחֲתָנוּ (BL Or 2539 MS A, fol. 77r, 7 | L [BHS]: Gen.

24.60 ‘our sister’)

מִיחוֹص (BL Or 2539 MS A, fol. 113v, 5 | L [BHS]: Num.

Deut. 23.11 ‘from outside’)

تَجْعُو (BL Or 2539 MS B, fol. 122v, 11 | L [BHS]: Num.

16.26 ‘you touch’)

This applies even to cases where the orthography in the Hebrew *ketiv* is defective and the Tiberian codices have a *qibbus*, e.g.

لِزْقُونَاو (BL Or 2539 MS A, fol. 63r, 2 | L [BHS]: Gen.

21.7 ‘in his old age’)

אָכְלُوهוּ (BL Or 2539 MS B, fol. 119r, 1 | L [BHS]: يَأْكُلُوهُ)

Num. 9.11 ‘they shall eat it’)

This suggests that the vocalization with *qibbus* reflects a consonantal + short vowel [wu]. In one manuscript an Arabic *damma* vowel is written on the *wāw* rather than a *qibbus*, e.g.

וּמָا (BL Or 2554 fol. 80r, 12 | L [BHS]: וּמָה Cant. 7.7 ‘and what?’)

וּخַרְמִינָה (BL Or 2554 fol. 54r, 4 | L [BHS]: וּخַרְמִינָה Cant. 2.15 ‘and our vineyards’)

וּזְמִינֵי (BL Or 2554 fol. 94v, 7 | L [BHS]: וּזְמִינֵה Cant 8.14 ‘and be like!’)

In one manuscript, an initial conjunctive ה is transcribed by Arabic *wāw* vocalized with a Hebrew *shewa*. This most likely represents a consonantal onset followed by a short vowel, e.g.

וּמְסִנְفָר (BL Or 2539 MS A, fol. 73v, 9 | L [BHS]: אֲסִפָּר Gen. 24.32 ‘and fodder’)

וּמְاء (BL Or 2539 MS A, fol. 74r, 1 | L [BHS]: אֲמֹاء Gen. 24.32 ‘and water’)

In one manuscript an Arabic *fatha* sign is marked over the *wāw* that transcribes conjunctive ה, e.g.

וְמִי (BL Or 2552 fol. 99v, 5 | L [BHS]: וּמִי Ecc. 2.19 ‘and who’)

This reflects a variant reading tradition in which the conjunctive *vav* is read [va] even before a labial. This may be what the vocalization with *shewa* in the manuscript BL Or 2539 MS A was intended to represent. In Standard Tiberian pronunciation [wu] reflects the shift of the short vowel to a rounded quality by assimilation to the labial environment. One may compare traditions of reading such as [vami:] (L [BHS]: וּמִי) to cases in Origen’s Hexapla such as the following, where the Greek transcription has ουα or ουε where the Standard Tiberian tradition has u.⁶³

ουαδου (Ambrosiana Palimpsest | L [BHS]: וְעַד Psa. 46.11
‘and know! (mp)’)

ουαλσωνι (Ambrosiana Palimpsest | L [BHS]: וְלָשׁוֹנִי Psa. 35.28 ‘and my tongue’)

ουαρημ (Ambrosiana Palimpsest | L [BHS]: וְרַעֲם Psa. 28.9
‘and shepherd (ms) them!’)

ουεβροβ (Ambrosiana Palimpsest | L [BHS]: וְבָרְבָּה Psa. 49.7
‘and in the multitude of (cstr.)’)

Similar forms are occasionally found in the Babylonian tradition, e.g.⁶⁴

וּבְמִישָׁר (Yeivin 1985, 1152 | L [BHS]: וּבְמִישָׁר Mal. 2.6 ‘and in uprightness’)

⁶³ Data supplied by Ben Kantor.

⁶⁴ Data supplied by Shai Heijmans.

The normal vocalization of *vav* in the Babylonian tradition in such contexts, however, is with *hireq*, e.g.

וּמְהוֹמָה (Yevin 1985, 338 | L [BHS]: *Prov. 15.16* ‘and trouble’)

וּבְפִשְׁעֵיכֶם (Yevin 1985, 342 | L [BHS]: *Isa. 50.1* ‘and for your transgressions’)

וּבְכַשְׂרֹן (Yevin 1985, 352 | L [BHS]: *Ecc. 2.21* ‘and with skill’)

There is an exceptional case of *hireq* in L after conjunctive *vav* in this context, where *וּ* is expected:

L [BHS]: וְשָׁאַלְתָּ (Gen. 32.18 ‘and he will ask you’ | S: שָׁאַלְתָּ)

When word-initial conjunctive *וּ* is followed by a consonant with silent *shewa*, it sometimes takes minor *ga'ya* in the Tiberian tradition. Minor *ga'ya* lengthened the duration of a short vowel in a closed syllable slightly (represented in IPA as a half-long vowel, cf. §I.2.8.2.2.). When this is the case, some transcriptions represent the lengthened syllable with two Arabic *wāws*. This must be interpreted as representing a consonantal onset followed by a lengthened vowel [u·] vowel, i.e. [wu·], e.g.

וְוַיַּעֲלוּתוּ (BL Or 2540, fol. 8v, 4 | L [BHS]: *Exod. 3.8* ‘and to bring him up’)

וְוַיִּקְרָב (BL Or 2546, fol. 85v, 8 | L [BHS]: *Num. 32.11* ‘and to Jacob’)

וְוּלָא הַזְרֹן (BL Or 2544 fol. 158r, 4 | L [BHS]: וְלֹא הַזְרֹן Exod.

8.4 ‘and to Aaron’

The same transcription is found when a word-initial conjunctive *וְ* is lengthened by a phonetic *ga'ya* (§I.I.2.5.8.4.), which causes a following *shewa* to be read as vocalic, e.g.

וְוּשְׁתִי (BL Or 2555 fol. 96r, 5 | L [BHS]: וְשַׁתֵּה Ecc. 9.7 ‘and drink!')

In some model Tiberian codices a *vav* before a following [u:] is written with a dot. This could be interpreted as an attempt to represent a labio-velar onset [w] rather than [v], e.g.⁶⁵

L, A: וְעַמְדָתָה (Deut. 29.25 ‘and they worshipped’)

L, B: וְעַט (Exod. 35.26 ‘they span’)

C: וְגַלְעָד (Jer. 50.5 ‘let us join’)

In some manuscripts, consonantal *vav*, before [u:] and also in other contexts, is marked with a *rafe*, e.g.⁶⁶

C: וְתַשְׁפִּיר (Isa. 46.5 ‘and you make equal’)

L: וְתִהְיָ (Psa. 90.17 ‘and let it be’)

In manuscripts with Non-Standard Tiberian vocalization, these two strategies for marking consonantal *vav* have been extended to other contexts. The placement of a dot in consonantal

⁶⁵ Yeivin (1980, 285–286).

⁶⁶ Yeivin (1980, 286).

vav is found in such manuscripts in word-initial, word-medial and word-final position, e.g.

Genizah manuscripts

וְאָרֶץ (T-S A13.20, Blapp 2017, 162 | L [BHS]: זְאָרֶץ Psa. 69.35 ‘and earth’)

וְעַם (T-S A13.20, Blapp 2017, 162 | L [BHS]: מְעַם Psa. 69.29 ‘and with’)

וְתִּקְוָה (T-S A13.20, Blapp 2017, 162 | L [BHS]: וְתִּקְוָה Psa. 71.5 ‘my hope’).

וְעַל (T-S A11.1, Blapp 2017, 51 | L [BHS]: וְעַל Job 39.23 ‘upon him’)

European manuscripts

אֵלֵךְ (ASCNON B.I.1v, Pilocane 2004, 27 | L [BHS]: אֵלֵךְ Num. 27.11 ‘to him’)

In such contexts, the *vav* would have been pronounced as a labio-dental according to the Standard Tiberian tradition. Moreover, in some cases, a vowel sign is written under it, which shows it must be consonantal, e.g. זְאָרֶץ. Comparison with the strategies for marking consonantal *vav* in the Babylonian and Palestinian traditions, however, suggest that the dot in the *vav* should be interpreted as a *shureq* vowel sign. Its purpose in the Non-Standard Tiberian manuscripts was to ensure that the letter was read as a separate segment from the adjacent vowel, although it was only an approximating representation of its pronunciation, i.e. presumably a labio-dental.

In Babylonian vocalization, consonantal *vav* is sometimes vocalized with a sign that can only be interpreted as a *shureq* vowel, e.g.⁶⁷

אָבִי (OB, Yeivin 1985, 267 | L [BHS]: **עַבְּדָךְ** Deut. 27.16 ‘his father’)

וְלֹפֶנְךָ (LB, Yeivin 1985, 267 | L [BHS]: **וְלֹפֶנְךָ** Job 21.33 ‘and before him’)

לְנַזֵּן (OB, Yeivin 1985, 267 | L [BHS]: **לְנַזֵּן** Prov. 26.3 ‘for the back’)

According to the Misha'el ben 'Uzzi'el in the passage cited above, the Iraqis, i.e. the Jews of Babylonia, pronounced consonantal *vav* as a bilabial, so a *shureq* was more appropriate as a representation of its pronunciation than in the Tiberian tradition. In manuscripts with Palestinian vocalization, the vowel sign of *holem* occasionally represents consonantal *vav*, e.g.

וַיִשְׁתַחֲווּ (Bod. Heb. d 44, ff. 1-4, Dietrich 1968, 25* | L [BHS]: **וַיִשְׁתַחֲווּ** 2 Kings 2.15 ‘and they bowed before him’)

שָׂעֵת (T-S 20.53, Murtonen 1958, 17, Allony and Díez Macho 1958, 259 | L [BHS]: **שָׂעֵת** Psa. 30.3 ‘I cried’)

The *holem* sign here, as with the Tiberian *shureq*, must be regarded as an approximating representation of the labio-dental pronunciation of Palestinian consonantal *vav*.

In Gen. 46.13 L has a dot in the second *vav* of **וְהַ**. Some early codices do not have the dot, e.g. S: **וְהַ**. In B a dot appears

⁶⁷ Data supplied by Shai Heijmans.

to have been written and then erased.⁶⁸ The name occurs also in Num. 26.23 where L and other early codices have לְפֹהַ without the dot. It is likely that the dot in the vocalization of L in Gen. 46.13 should be identified as *shureq* to mark the consonantal pronunciation of the letter rather than a *dagesh* and the reading [fu:'wɔ:] was intended, as in other manuscripts.⁶⁹ The Babylonian vocalization of פֹהַ (L, Gen. 46.13) is וּפֹהַ (Yeivin 1985, 764), with a *shureq* over the *vav* and no vocalization on the *pe*. This could be compared to Tiberian vocalizations such as רִוָּחַ, which al-Fāṣī claims contained a bilabial glide: [rurwah]. Babylonian פֹהַ is likely to have been intended to represent [fu:'wɔ:].

In Non-Standard Tiberian manuscripts, *rafe* is marked on consonantal *vav* in a wider range of contexts than in the Standard Tiberian codices. It is found on *vav* in word-initial and word-medial position, e.g.

מְגֻלָּת (T-S A12.1, Blapp 2017, 99 | L [BHS]: מְגֻלָּת Ruth 1.12 ‘and also’)

תְּקֻנָּת (T-S A12.1, Blapp 2017, 99 | L [BHS]: תְּקֻנָּת Prov. 29.20 ‘hope’)

תְּרֻמָּת (T-S A12.1, Blapp 2017, 99 | L [BHS]: תְּרֻמָּת Prov. 29.23 ‘pride’)

⁶⁸ A trace of dot is visible and the parchment has been scraped.

⁶⁹ In later sources the dot in the word is referred to as a *dagesh*. Jedidiah Norzi (seventeenth century) in his work *Minhat Shai* (Mantua, 1742–44 ad loc. Gen. 46.13) refers to it as *dagesh* and notes that there were differences of opinion about its presence in the name in Gen. 46.13 in the sources available to him.

The function of the *rafe* here is to mark the letter as consonantal but ungeminated.

Occasionally a *rafe* sign is used to mark consonantal ungeminated *vav* in Palestinian vocalization, e.g.

(T-S 12.195, Kahle 1930, 83 | L [BHS]: Psa. 53.2
‘iniquity’)

In Non-Standard Tiberian manuscripts, a consonantal *vav* is indicated by a *shewa* sign, often written within the letter. The *shewa* makes it clear that the letter closes a syllable and so is to be read as a consonant, e.g.

Genizah manuscripts

(T-S A13.18, Blapp 2017, 125 | L [BHS]: Psa. 89.46
‘on him’)

(T-S A13.18, Blapp 2017, 125 | L [BHS]: Psa. 91.4
‘his wings’)

European manuscripts

(Codex Reuchlinianus, Morag 1959, 219 | L [BHS]: Isa. 6.1 ‘and his train’)

(BL Add 21161 | L [BHS]: Hos. 14.1 ‘and his pregnant women’)

The distinction in the Middle Ages between the pronunciation of *vav* as a labio-dental in Palestine and its pronunciation as bilabial in Iraq is continued in modern reading traditions. In reading traditions of the Levant, such as Aleppo, consonantal *vav* is pronounced as a labio-dental, e.g.

ḥaj'jav (Aleppo, Katz 1981,4 | L [BHS]: חַיָּה Gen. 47.28 ‘his life’)

veyam'hu' jiyy'dal (Aleppo, Katz 1981,9 | L [BHS]: וְגַם־הִוא יִגְדֶּל Gen. 48.19 ‘and he also will be great’)

In the Samaritan reading tradition, consonantal *vav* has shifted to [b] (except in the case of conjunctive *vav*), reflecting its merger with fricative *bet* [v] and the consequent shift of fricative *bet* [v] to plosive *bet* [b] (Ben-Hayyim 2000, 33–34), e.g.⁷⁰

bābīyyima (Samaritan, Ben-Hayyim 2000, 33-34 | L [BHS]: בָּבִיִּים Exod. 26.32 ‘their hooks’)

īšāb (Samaritan, Ben-Hayyim 2000, 33-34 | L [BHS]: אִשָּׁאֵב Gen. 25.25 ‘Esau’)

The occurrence of *pe* in place of consonantal *vav* in a biblical manuscript from Qumran could be taken as evidence that the labio-dental pronunciation already existed in the Second Temple period:⁷¹

צֹוֹה יְהֹוָה לִיְעַקְּבָּן (4Q111 3.8 | L [BHS]: צֹוֹה יְהֹוָה לִיְעַקְּבָּן Lam. 1.17 ‘The Lord commanded Jacob’)

The pre-Masoretic transcriptions into Greek and Latin, however, reflect a pronunciation of the consonantal *vav* as a bilabial [w]. In Greek this is represented by ου or υ and in Latin by *u*, e.g.⁷²

⁷⁰ Here and elsewhere the transcription system of Ben-Hayyim is used for the Samaritan tradition.

⁷¹ Data supplied by Aaron Hornkohl.

⁷² Data supplied by Ben Kantor.

Septuagint (third century B.C.E.)

Οὐκάν (Göttingen Septuagint | L [BHS]: אָקָן Gen. 36.27
'Akan')

Εῦαν (Göttingen Septuagint | L [BHS]: חַנָּה Gen. 4.1 'Eve')

Hexapla of Origen (c. 185–254 C.E.)

ουαδωρ (Ambrosiana Palimpsest | L [BHS]: וְדָר Psa. 49.12
'and generation')

βγηουαθω (Ambrosiana Palimpsest | L [BHS]: בְּגַעֲתָה Psa. 46.4 'at its swelling')

Jerome (346-420 C.E.)

uaiomer (Jerome, *Epistula* LXXIII.55.18, ed. Hilberg | L [BHS]: וַיֹּאמֶר Gen. 4.15 'and he said')

illaue (Jerome, *Hebraicae Quaestiones in Libro Geneseos*, ed. de Lagarde et al., 6.5, 6, 12 | L [BHS]: יְלַעֵה Gen. 29.34 '[my husband] will join himself [to me]')

In medieval Greek transcriptions, on the other hand, consonantal *vav* is represented by β, which reflects [v], e.g.

Nikolaos of Otranto (1155/60–1235)

βεέθ (Kantor forthcoming | L [BHS]: וְאֵת Gen. 1.1 'and (direct object marker)')

βιγιομερου (Kantor forthcoming | L [BHS]: וְאִמְרָה Ex. 32.4
'and they said')

In modern Iraqi reading traditions, such as Baghdad (Morag 1977, 8) and Kurdistan (Sabar 2013), *vav* is pronounced as a bilabial [w]. The same applies to the Yemenite reading tradition,

which was closely related historically with Babylonia in the Middle Ages (Morag 1963; Ya'akov 2015), e.g.

w^ejid'gu (Baghdad, Morag 1977,8 | L [BHS]: זִידָגַן Gen. 48.16
'and let them increase')

wăʃɔfat^s (Yemen, Morag 1963,42 | L [BHS]: שְׁפֵדָת Isa. 2.4
'and He will judge')

I.1.7. *ZAYIN* (זָיִן)

Voiced alveolar sibilant [z]

According to *Hidāyat al-Qāri'*, the Tiberians called this letter *zāy* (זָיִן), which is the name of the corresponding Arabic letter.⁷³ A shortened form of the name, *zay*, was also used in Jewish Palestinian Aramaic (Sokoloff 1992, 175) and Syriac (Payne Smith 1879, 1116).

Hidāyat al-Qāri' states that the place of the articulation of the letter is the teeth.⁷⁴ This evidently refers to the movement of the teeth accompanying the pronunciation of the sibilants. The author does not mention the action of the tongue, which was the main articulator.⁷⁵ The *Sefer Yešira* describes *zayin* as being articulated between the teeth with a 'resting tongue', or a 'flat

⁷³ Long version, edition in vol. 2 of this book, §II.L.1.1.2.

⁷⁴ Long version, edition in vol. 2 of this book, §II.L.1.3.8. Eldar (1980, fol. 10b, line 77).

⁷⁵ Cf. Eldar (1980, n.70).

tongue' according to some versions.⁷⁶ In both these passages, the intention may have been that the tongue tip was not engaged in the articulation of the letter, i.e. it was articulated with the blade.

Hidāyat al-Qāri' mentions that there is a variant form of *zayin* which is called *zāy makrūkh*, but the author says he knows nothing about it.

It is said that there are some who attribute a particular feature to *zayin* and call it *zāy makrūkh*. I have not, however, been able to identify their purpose in using the term *makrūkh*, so that I could have described it.⁷⁷

It has been stated previously that I do not know anything that I can report about the *zāy makrūkh*. I have only mentioned it so that it be known that letters have different attributes.⁷⁸

The term *makrūkh* was used to refer to an emphatic, i.e. pharyngealized, form of *resh* (§I.1.20.). It appears, therefore, that

⁷⁶ בֵּין שִׁינִים וּבְלֹשׁוֹן יָשֵׁן 'between the teeth and with a resting tongue', 'שַׁכּוּבָה וְשַׁטּוֹתָה' 'with a resting and flat tongue' (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

⁷⁷ Long version, edition in vol. 2 of this book, §II.L.1.2.

⁷⁸ Long version, edition in vol. 2 of this book, §II.L.1.9.8. Cf. also Eldar (1984a, 32). The Yemenite orthoepic treatise known as the Hebrew *Mahberet ha-Tijān*, which was based on the long version of the *Hidāya*, contains a similar statement: 'ובן יש להם זיין נקרא מכורך ואינו ידוע אצליינו' 'They (i.e. the Jews of Palestine) have a *zayin* called *makrūkh*, but it is unfamiliar to us (i.e. the Jews of Yemen)' (ed. J. Derenbourg 1871, 81); cf. Morag (1960, 210, n. 45).

the *zāy makrūkh* was an emphatic [z̥], though its distribution is unknown.

An anonymous Masoretic treatise refers to two variant forms of the letter *ṣade* in the Tiberian Hebrew reading tradition:

There is another letter (with two realizations), which the people of Palestine never utter (in their vernacular speech). This is *ṣade* and (variant) *ṣade*. It is, however, familiar to the inhabitants of the lands (of the diaspora) due to their living in close proximity to other peoples and their using other languages and languages of other nations.⁷⁹

It is possible that this is referring to a voiced variant of *ṣade*, i.e. [z̥]. Ibn Khaldūn (North Africa, d. 1406), indeed, refers to a voiced allophone of *ṣade* [z̥] in the pronunciation of the name אַמְזִיחָה, i.e. [?amaz̥'jɔ:hu:]:⁸⁰

Sibawayhi describes the existence of an emphatic [z̥] sound in Arabic, which arose through partial assimilation of the letter *ṣād* to an adjacent voiced consonant. With regard to the pronunciation of the *ṣād* in the word *māṣdar* ‘source’ he states:

⁷⁹ Ed. Allony (1973, 102, lines 29-32 [Allony’s reading has been corrected in places]): חֲרֵף אֲכֵר לֹא יִקְולֶה אֲهָל אַלְשָׁם בְּתָה וְהוּ צָדִי צָדִי וְאַנְמָא: אלְפּוּה סְכָאן אַלְבְּלָדָאן לְמַגְאוֹרָה וְאַלְמַסְאָכָנה בְּגִיר קְבָאֵילָהָם וְאַלְאַסְתָּעָמָל בְּגִיר. Allony attributed this text to ‘Ali ben Yehudah ha-Nazir, but this attribution has been disputed by Eldar (1984a, 33, n.54, 1986, 59–61).

⁸⁰ He describes the *ṣade* as *al-ṣād al-mušamma bi-l-zā'* ‘ṣād flavoured with zā’; cf. Schreiner (1886, 254).

They make it (the *ṣād*) similar to the homorganic letter that is most like *dāl*, i.e. *zāy*, since it is unaspirated and not emphatic, but they do not change it into pure *zāy*, lest the emphatic quality of the letter be removed.⁸¹

An emphatic Arabic *zāy* was recognized as an additional Arabic letter in some medieval works on the correct recitation of the Qur’ān (*tajwīd*), where a voiced variant of an Arabic *ṣād* is intended.⁸² The Tiberian terminology may have been influenced by this tradition in the Arabic *tajwīd* literature.

The statement in *Hidāyat al-Qāri'* concerning the *zāy makrūkh* implies that it is a variant of the written letter *zayin* ('there are some who attribute a particular feature to *zayin*'). The foregoing discussion, however, suggests that the term is referring to the voiced oral reading of the *ṣade*.

I.1.8. *HET* חֵית (ח)

Unvoiced pharyngeal fricative [ħ]

This letter is transcribed by Arabic *ḥā'* (unvoiced pharyngeal fricative) in the Karaite transcriptions, e.g.

⁸¹ فضارعوا به اشبئه الحروف بالدال من موضعه وهي الزاي لانها مجحورة غير مطبقة ولم يبدلها زايا خالصة كراهيۃ الاجحاف بها للاتباق, *al-Kitāb*, ed. Derenbourg (1889, 476–77).

⁸² Makkī ibn Ḥabīb al-Qaysī (d. 437/1045), for example, refers to *ṣād allatī yuķālitu lafżuhā lafża al-zāy* ‘A *ṣād* whose pronunciation is mixed with that of *zāy*’, as in قَزْد (قَصْد = الْصِّرَاط = الْزَّرَاط), *al-Ri‘āya li-Tajwīd al-Qirā'a wa-Taħqīq Lafż al-Tilāwa* (ed. Farḥāt 1996, 107).

حيط (BL Or 2539 MS A, fol. 100r, 8 | L [BHS]: אַתְּ־ Deut.

19.15 ‘sin’)

كَاحَاسِدْ (BL Or 2539 MS A, fol. 65r, 3 | L [BHS]: כָּחֲסִידָה Gen.

21.23 ‘like the kindness’)

هَمْزِيْح (BL Or 2539 MS A, fol. 67v, 1 | L [BHS]: هَمْزِيْح Gen.

22.9 ‘the altar’)

According to *Hidāyat al-Qāri'*, the pharyngeals and the laryngeals had the same place of articulation:

The letters עַחַת have a single place of articulation. This is the throat and the root of the tongue. The Tiberians call it the ‘root of the tongue’ and ‘place of swallowing’.⁸³

It is possible that the division of this place of articulation into the ‘root of the tongue’ and ‘place of swallowing’ was intended to refer to the production of the pharyngeals and laryngeals respectively. Some medieval grammarians state that *het* and its voiced counterpart ‘ayin were articulated less deep in the throat than ’alef and *he*.⁸⁴

In the Standard Tiberian tradition, *het* does not take *dagesh*. According to *Hidāyat al-Qāri'*, the letter *het* could not be made

⁸³ Long version, edition in vol. 2 of this book, §II.L.1.3.2.

⁸⁴ Ibn Janāḥ, *Kitāb al-Luma'* (ed. Derenbourg 1886, 26–27), Menaḥem ben Saruq, *Mahberet* (ed. Filipowski 1854, 6).

‘heavy’ with *dagesh*,⁸⁵ i.e. it could not be pronounced with different degrees of muscular pressure.

In Non-Standard Tiberian vocalization, the distribution of *dagesh* is different from that of the Standard Tiberian tradition. The distribution of *dagesh* characteristic of the **בגדכפת** consonants is extended to most other consonants, with the result that, like the **בגדכפת** consonants, they take *dagesh* after a silent *shewa* or at the beginning of a word when not preceded by a word ending in a vowel and a conjunctive accent (Morag 1959; Blapp 2018). The *dagesh* in these consonants represented gemination (Yeivin 1983; Khan 2017). Further details of this system of marking *dagesh* will be given in §I.3.3. What is significant here is that the extension of *dagesh* to consonants other than **בגדכפת** in Non-Standard Tiberian manuscripts does not include the pharyngeals, which in the vast majority of cases do not take *dagesh*. This reflects the difficulty of geminating these consonants. A *dagesh* is found only very sporadically marked on *het* in Non-Standard Tiberian manuscripts, e.g.

Genizah manuscripts

תְּחִיָּה (T-S A13.20, Blapp 2017, 163; 2018, 143 | L [BHS]:
חַיָּה Psa. 69.29 ‘the living’).

European manuscripts

מַלְחָמָה (Codex Reuchlinianus, Morag 1959, 219 | L
[BHS]: **מַלְחָמָה** 2 Sam. 11.25 ‘your fighting’)

⁸⁵ Long version, edition in vol. 2 of this book, §II.L.1.3.5.

This may have been a strategy for ensuring that the letter was read correctly and did not lose its consonantal pronunciation, rather than marking gemination. The *rafe* sign is occasionally used with a similar function in Non-Standard Tiberian manuscripts. As in some other contexts in Non-Standard Tiberian manuscripts, the *rafe* here marks the letter as consonantal but not geminated, e.g.

נְקָרְבָּן (Blapp 2017, 175 | L [BHS]: נְקָרְבָּן Psa. 69.6 ‘they are [not] hidden’)

Both of these strategies for ensuring that the letter is read and not weakened are found in Palestinian vocalization, e.g.

Dagesh

לִפְנֵי (Fassberg 1987, 84 | L [BHS]: לִפְנֵי Lam. 1.2 ‘her cheek’)

Rafe

נְאַלְמָנָה (T-S 12.195, Kahle 1930, 82-84 | L [BHS]: נְאַלְמָנָה Psa. 53.4 ‘they have become corrupt’)

The potential vulnerability of *het* to weakening is reflected in Non-Standard Tiberian manuscripts by the practice of marking a *shewa* sign under the letter in word-final position. The purpose of this was to draw attention to the fact that they are consonants closing a syllable and are not to be weakened and read as vowel letters, e.g.

Genizah manuscripts

תִּשְׁכַּח (T-S A11.1, Blapp 2017, 48 | L [BHS]: תִּשְׁכַּח Job 39.14 ‘and she forgot’)

לְעוֹלָה (T-S A13.18, Blapp 2017, 127 | L [BHS]: לְעוֹלָה Psa. 89.47 ‘forever’)

European manuscripts

וַיִּבְרַח (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: וַיִּבְרַח 1 Kings 11.40 ‘and he fled’)

זֶרֶח (ASCNON B.I. 2r, Pilocane 2004 | L [BHS]: זֶרֶח 1 Chr. 2.4, ‘Zerah’)

Within the Standard Tiberian reading tradition a *het* was prevented from potential weakening in some contexts by lengthening the vowel before it (§I.2.10.), e.g. וַפְתַּחְיָה [wufθa'h̥jɔ:] ‘and Pethahiah’ (Neh. 11.24), מִיחְיָה [mi'h̥jɔ:] ‘reviving’ (Ezra 9.8). Another strategy to protect the consonantal pronunciation of *het* at the end of a word-internal syllable was to place a *dagesh* in the following letter (§I.3.1.11.2.). This is found in some early manuscripts (Yeivin 1980, 295; Ginsburg 1897, 133), e.g.

לְחֵם. (JTS ENA 346 | L [BHS]: לְחֵם ‘your bread’ Ezek. 4.15)

There is clear evidence from the Dead Sea scrolls of the weakening of *het* in some biblical reading traditions in the Second Temple period, especially that of 1QIsa^a. This is reflected by the occurrence of *he* or *'alef* where the Masoretic tradition has *het*, e.g.⁸⁶

מִחְשָׁךְ (1QIsa^a 35.27 | L [BHS]: מִחְשָׁךְ Isa. 42.16 ‘darkness’)

⁸⁶ Data supplied by Aaron Hornkohl. Cf. also Reymond (2014, 92).

וְאַהֲלָלוֹה (1QIsa^a 37.6 | L [BHS]: לְאַהֲלָלוֹה Isa. 43.28 ‘and I will profane’)

וַיִּהְלֹּהוּ (1QIsa^a 44.17 | L [BHS]: הַלְּהֹו Isa. 53.10 ‘he caused him sickness’)

בְּצֻחָהוֹת (1QIsa^a 48.6 | L [BHS]: בְּצֻחָהוֹת Isa. 58.11 ‘in scorched places’)

In the modern Samaritan reading tradition *het* has weakened in most contexts to *'alef* or zero (Ben-Hayyim 2000, 38–39), e.g.⁸⁷

’ēsēd (L [BHS]: אֶסֶד Gen. 24.14 ‘grace’)

’amrā’ēfāt (L [BHS]: מְרַחֵף Gen. 1.2 ‘was hovering’)

ruwwi (L [BHS]: רֻוְוי Gen. 6.3 ‘my spirit’)

mār (L [BHS]: מָרָר Gen. 30.33 ‘tomorrow’)

wrū (L [BHS]: וּרְעִים Gen. 1.2 ‘and the spirit of’)

The weakening of the pharyngeals reflected in the Dead Sea scrolls and the Samaritan tradition had its roots in the contact of Hebrew with non-Semitic languages, in particular Greek, in the pre-Islamic period. The measures taken to ensure the correct reading of the *het* in the medieval manuscripts described above show that a special effort had to be made to avoid its being weakened in the transmission of the Masoretic biblical reading traditions still in the Middle Ages. Indeed, in the medieval period there is evidence for the weakening of the pharyngeals in Palestinian liturgical poetry (§I.0.9.).

⁸⁷ Data supplied by Aaron Hornkohl.

I.1.9. *TET טית* (ט)

Emphatic (i.e. pharyngealized, with retracted tongue root and increased muscular pressure) unvoiced alveolar plosive [t^f]

According to *Hidāyat al-Qāri'*, it was articulated with the tongue tip and the gums.⁸⁸ In the Karaite transcriptions, it is represented by Arabic *tā'*, which was a pharyngealized [t^f], e.g.

מִה-טְבוֹן (BL Or 2539 MS B, fol. 131v, 11 | L [BHS]: מִה-טוּבָן)

Num. 24.5 ‘how fair are [your tents]’)

מִبְחוֹט (BL Or 2539 MS A, fol. 57r, 8 | L [BHS]: מִבְחוֹט Gen.

14.23 ‘from a thread’)

כְּמַטְחָוֵי (BL Or 2539 MS A, fol. 64r, 3 | L [BHS]: כְּמַטְחָוֵי)

Gen. 21.16 ‘like the shots of’)

In Greek transcriptions from the pre-Masoretic period, *tet* is represented by Greek *tau*, which was an unaspirated stop [t]. In Latin transcriptions from the pre-Masoretic period it is represented by Latin *t*, which likewise represented an unaspirated stop [t]. These reflected the unaspirated realization of the *tet*, which is also a feature of Arabic *tā'*. Examples:⁸⁹

⁸⁸ Long version, edition in vol. 2 of this book, §II.L.1.3.7.; ed. Eldar (1980, fol. 10b, lines 67–69).

⁸⁹ Data supplied by Ben Kantor.

Septuagint (third century B.C.E.)

Φουτιὴλ (Göttingen Septuagint | L [BHS]: פּוֹטִיאֵל Ex. 6.25
‘Putiel’)

Ιεκτάν (Göttingen Septuagint | L [BHS]: יְקָנָה Gen. 10.25
‘Joktan’)

Λώτ (Göttingen Septuagint | L [BHS]: לֹת Gen. 11.27 ‘Lot’)

Hexapla of Origen (c. 185–254 C.E.)

βατε (Ambrosiana Palimpsest | L [BHS]: חַבְּרָה Psa. 28.7 ‘[my heart] trusted’)

εμματ (Ambrosiana Palimpsest | L [BHS]: וְמַתְּאֵג Psa. 30.7 ‘I [will not] be moved’)

φελλετηνι (Ambrosiana Palimpsest | L [BHS]: פְּלִיטָנִי Psa. 31.2
‘rescue me! (ms)’)

Jerome (346-420 C.E.)

phut (Jerome, *Commentary on Ezekiel*, ed. Glorie, VIII.27.935 | L [BHS]: טַפְתָּה Ezek. 27.10 ‘Put’)

atemoth (Jerome, *Commentary on Ezekiel*, ed. Glorie, XII.40.517–518 | L [BHS]: תֹּמֶתֶה Ezek. 40.16 ‘narrowing (fp)’)

bete (Jerome, *Hebraicae Quaestiones in Libro Geneseos*, ed. de Lagarde et al., 54.5 | L [BHS]: חַבְּרָה Gen. 34.25 ‘security’)

mesphat (Jerome, *Commentary on Isaiah*, ed. Gryson, II.42.6 | L [BHS]: טַפְשָׁתְּמָלֵל Isa. 5.7 ‘judgment’)

phaleta (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Joel, II, p. 197, line 783 | L [BHS]: פָּלַטְה Joel 3.5 ‘I will pour’)

I.1.10. YOD יְדָ (י)

Palatal unrounded semi-vowel [j]; voiced palatal stop [j] when geminated

Saadya states that the Tiberians pronounced *yod* with *dagesh* like Arabic *jīm*:

As for *jīm*, it is in between *gimel* and *yod*. This is why the Tiberians pronounce it [i.e. *jīm*] when (reading) *yod* with *dagesh*.⁹⁰

According to the early Arabic grammarians Sibawayhi and al-Khalil (eighth century C.E.), *jīm* was realized as a voiced palatal stop [j], which had the same place of articulation as the Arabic *yā'* (the semi-vowel [j]), so presumably Saadya is referring to the realization of *yod* with *dagesh* as [j], e.g. וַיִּשְׁמַד [vajjaʃ'me:eð] ‘and he destroyed’ (1 Kings 16.12), which resulted from the strengthening of the articulation of [j] to a stop.⁹¹

⁹⁰ ואما אלג'ים פפי מא בין אלג'ימל ואלייד, ולדיך ג'עלחה אלטברארניין פי אליז'א אלדגש, *Commentary on Sefer Yešira* (ed. Lambert 1891, 42–43).

⁹¹ In some of the early Arabic dialects geminated *yā'* was pronounced like *jīm*; cf. Roman (1983, 101–6, 218). Ibn Sinā in the eleventh century describes *jīm* as pronounced slightly further forward (Roman 1983, 243–46).

In many Non-Standard Tiberian manuscripts, a word-final consonantal *yod* is marked by a lower dot, which can be identified as a *hireq* vowel. Occasionally the *yod* is also marked with a *rafe* sign, e.g.

Genizah manuscripts

אֱלֹהִי (T-S A12.1, Blapp 2017, 84 | L [BHS]: אֱלֹהִי Prov. 30.9
‘my God’)

תְּקַנֵּשׁ (T-S A13.18, Blapp 2017, 130 | L [BHS]: תְּקַנֵּשׁ Psa. 89.35 ‘my lips’)

European manuscripts

מִצְרָי (Codex Reuchlinianus, Morag 1959, 220 | L [BHS]: מִצְרָי Isa. 1.24 ‘from my enemies’)

גּוֹי (BL Add 21161 | L [BHS]: גּוֹי Joel 1.6 ‘nation’)

In Babylonian vocalization, a *hireq* is marked not only on word-final consonantal *yod* but also on consonantal *yod* that occurs within a word, e.g.⁹²

נִטְעָה (OB, Yeivin 1985, 277 | L [BHS]: נִטְעָה Psa. 102.12 ‘bent’)

הַגּוֹן (OB, Yeivin 1985, 277 | L [BHS]: הַגּוֹן Jer. 18.8 ‘the nation’)

וַיְהִי (OB, Yeivin 1985, 275 | L [BHS]: וַיְהִי Ezek. 17.6 ‘and it became’)

חַיִל (MB, Yeivin 1985, 275 | L [BHS]: חַיִל Prov. 31.10 ‘virtue’)

⁹² Data supplied by Shai Heijmans.

Another strategy for marking word-final consonantal *yod* that is sporadically found in Non-Standard Tiberian is to write a dot within the body of the letter, which can be identified as a *mappiq* sign, e.g.

לִפְנֵי (T-S A11.1, Blapp 2017, 51 | L [BHS]: **לִפְנֵי** Job 41.2 ‘before me’)

These strategies for marking word-final consonantal *yod* reflect the perception that the letter was a weak consonant and was vulnerable to being slurred over.

There is some sporadic evidence in various Greek transcriptions from the pre-Masoretic period of the weakening and contraction of *yod* where it is consonantal in the Masoretic tradition, e.g.⁹³

Hexapla of Origen (c. 185–254 C.E.)

Final *ay* represented by *eta* possibly reflecting contraction to *ē* (Kantor 2017, 234):

ωεβη (Ambrosiana Palimpsest | L [BHS]: **אַיְבָה** Psa. 35.19 ‘my enemies’)

σωνη (Ambrosiana Palimpsest | L [BHS]: **שׂוֹנֵא** Psa. 35.19 ‘those who hate me’)

Septuagint (third century B.C.E.)

Zero representation where consonantal *yod* appears in the Masoretic tradition:

⁹³ Data supplied by Ben Kantor.

‘Αλληλί (Göttingen Septuagint | L [BHS]: הַיְחִילָלִי Num. 26.26 ‘Jahleelite’)

‘Αστηλί (Göttingen Septuagint | L [BHS]: הַיְחִצְאָלִי Num. 26.48 ‘Jahzeelite’)

‘Ετεβάθα (Göttingen Septuagint | L [BHS]: בֵּיטְבָתָה Num. 33.33 ‘Jotbathah’)

In some of the biblical Dead Sea scrolls, an *’alef* occasionally appears where there is consonantal *yod* in the Masoretic tradition, which reflects weakening, e.g.⁹⁴

אהרֹג (1QIsa^a 13.3 | L [BHS]: יְהָרֹג Isa. 14.30 ‘it/he will kill’)

הראֶה (1QIsa^a 16.22 | L [BHS]: אֲרִיה Isa. 21.8 ‘lion’)

גּוֹאִים (1QIsa^a 18.8 | L [BHS]: גּוֹיִם Isa. 23.3 ‘nations’)

שְׁפִירָה (1QIsa^a 34.23 | L [BHS]: שְׁפִירָה Isa. 41.18 ‘hilltops’)

אוֹבָב (4Q98g f1.6 | L [BHS]: אֹזֵב Psa. 89.23 ‘enemy’)

I.1.11. *KAF* (כ, קָף)

Kaf with *dagesh* (כ): unvoiced aspirated velar stop [k^h]

Kaf without *dagesh* (ק): unvoiced uvular fricative [χ]

A *kaf* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

⁹⁴ Data supplied by Aaron Hornkohl.

According to *Hidāyat al-Qāri'*, *kaf* with *dagesh* was articulated with ‘the middle of the tongue’.⁹⁵ *Kaf* without *dagesh*, on the other hand, was articulated further back, on the posterior ‘third of the tongue, which is adjacent to the pharynx, opposite the (soft) palate’.⁹⁶ In the Karaite transcriptions fricative *kaf* is represented by Arabic *khā*, which was pronounced as an unvoiced uvular fricative,⁹⁷ e.g.

لَاخُول (BL Or 2539 MS A, fol. 74r, 2 | L [BHS]: לֹאַחֲלָה Gen.

24.33 ‘to eat’)

بَسْبَاح (BL Or 2539 MS A, fol. 68r, 3 | L [BHS]: בְּסִבְבָּה Gen.

22.13 ‘in the thicket’)

بَعِينَاخَ (BL Or 2539 MS A, fol. 63v, 2 | L [BHS]: בְּעֵינֶיךָ Gen.

21.12 ‘in your (ms) eyes’)

Greek transcriptions from the pre-Masoretic period represent plosive *kaf* with the letter χ, which represented an aspirated voiceless velar stop [k^h] until the Byzantine period, rather than κ, which represented an unaspirated [k]. This

⁹⁵ Long version, edition in vol. 2 of this book, §II.L.1.3.6. Ed. Eldar (1980, fols. 10a-10b, lines 61-73).

⁹⁶ Long version, edition in vol. 2 of this book, §II.L.1.3.6. Ed. Eldar (1980, fol. 10a, lines 58-59).

⁹⁷ Roman (1983, 218).

demonstrates that plosive *kaf* at the time of these transcriptions was aspirated, e.g.⁹⁸

Septuagint (third century B.C.E.)

Xαναναιοι (Göttingen Septuagint | L [BHS]: גָּנָן Gen. 12.6
'Canaanite')

Xάσαδ (Göttingen Septuagint | L [BHS]: גָּשֵׁד Gen. 22.22
'Chesed')

Xαλέβ (Göttingen Septuagint | L [BHS]: כָּלְבָּן Num. 13.6
'Caleb')

Ασχανάζ (Göttingen Septuagint | L [BHS]: אַשְׁכָּנָז Gen. 10.3
'Ashkenaz')

Hexapla of Origen (c. 185–254 C.E.)

χααφαρ (Ambrosiana Palimpsest | L [BHS]: בְּעִפָּר Psa. 18.43
'like dust')

χαμμα (Ambrosiana Palimpsest | L [BHS]: בְּמַה Psa. 35.17
'how long/much ... ?')

χελλωθαμ (Ambrosiana Palimpsest | L [BHS]: בְּלֹתָתָם Psa. 18.38 'wiping them out')

δερχω (Ambrosiana Palimpsest | L [BHS]: בְּרֶכֶת Psa. 18.31
'his way')

Likewise, in the Tiberian pronunciation tradition, plosive *kaf* was almost certainly aspirated. In the Karaite transcriptions,

⁹⁸ Data supplied by Ben Kantor.

plosive *kaf* with *dagesh* is represented by Arabic *kāf*, which was an aspirated stop.⁹⁹

Hidāyat al-Qāri' describes the stop [k^h] as primary (*'asl*) and the fricative [χ] as secondary (*farṣ*).¹⁰⁰

I.1.12. *LAMED* לָמֶד (ל)

Voiced alveolar lateral continuant [l]

In *Hidāyat al-Qāri'* the name of this letter is spelt לָמֶד, which appears to reflect a different pronunciation from that of the normal Hebrew form of the name לָמַד, with stress on the final syllable.

According to *Hidāyat al-Qāri'*, the articulation of this letter involved the contact of the tongue tip with the gums.¹⁰¹

I.1.13. *MEM* מֵם (מ, מ̄)

Voiced bi-labial nasal [m]

In *Hidāyat al-Qāri'* the name of this letter is spelt מֵם.

⁹⁹ Roman (1983, 55).

¹⁰⁰ Long version, edition in vol. 2 of this book, §II.L.1.3.6. Ed. Eldar (1980, fols. 8b, 10a, 254, n.58). Watson (2007, 43–44) considers the uvular fricative [χ] in Modern Arabic dialects to be the emphatic counterpart of the dorsal [k^h], involving a primary dorsal and non-primary ‘guttural’ feature.

¹⁰¹ Long version, edition in vol. 2 of this book, §II.L.1.3.7. Ed. Eldar (1980, fol. 10b, lines 67–69). See the description of *dalet* (§I.1.4.) for a discussion of the passage.

I.1.14. *NUN* נָן (נ, נ̄)

Voiced alveolar nasal [n]

According to *Hidāyat al-Qāri'*, it was articulated with the end of the tongue and the gums.¹⁰²

I.1.15. *SAMEKH* סָמֵךְ (ס)

Unvoiced alveolar sibilant [s]

In *Hidāyat al-Qāri'* the name of this letter is spelt סָמֵךְ, which appears to reflect a different pronunciation from that of the normal Hebrew form of the name סָמֵךְ, with stress on the final syllable.

According to the medieval sources, it was articulated in the same place as the letter *zayin*,¹⁰³ apparently with the blade of the tongue rather than the tip (see the description of *zayin* §I.1.7.).

In some medieval Muslim sources, the *samekh* in the name פִנְחֵס ‘Phinehas’ is transcribed by *ṣād* [s^f] (Schreiner 1886, 254). This apparently reflects its pharyngealization after the pharyngeal *het*.

¹⁰² Long version, edition in vol. 2 of this book, §II.L.1.3.7. Ed. Eldar (1980, fol. 10b, lines 67–68). Ibn Janāḥ (*Kitāb al-luma'*, ed. Derenbourg, 27–28) distinguishes between the *nun* with a following vowel, which was pronounced with an admixture of nasal resonance, and *nun* without a vowel, which was articulated entirely in the nasal cavity.

¹⁰³ *Hidāyat al-Qāri'*, Long version, edition in vol. 2 of this book, §II.L.1.3; ed. Eldar (1980, fol. 10b, line 77); *Sefer Yešira* (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

Sporadic examples of the pharyngealization of *samekh* in the environment of pharyngeals is attested in the Dead Sea scrolls, e.g.¹⁰⁴

וְעַזְתָּם (4Q76 4.12 | L [BHS]: וְעַזְתָּם Mal 3.21 ‘and you [pl] will trample’)

I.1.16. ‘AYIN עִין (ঘ)

Voiced pharyngeal fricative [f]

This letter is transcribed by Arabic ‘ayn (voiced pharyngeal fricative) in the Karaite transcriptions, e.g.

عَيْنَاهَا (BL Or 2539 MS A, fol. 64v, 3 | L [BHS]: עִינָה Gen. 21.19 ‘her eyes’)

وَيَاعِسْ (BL Or 2539 MS A, fol. 63r, 3 | L [BHS]: וְיַעֲשֵׂ Gen. 21.8 ‘and he made’)

سَمَاعْ (BL Or 2539 MS A, fol. 63v, 3 | L [BHS]: שְׁמַעַ Gen. 21.12 ‘hear!’)

Hidāyat al-Qāri' does not distinguish between the place of articulation of the laryngeals and that of the pharyngeals. Some medieval grammarians, however, state that *het* and its voiced counterpart ‘ayin were articulated less deep in the throat than ‘alef and *he* (see §I.1.8.).

In the Standard Tiberian tradition, ‘ayin does not take *dagesh*. According to *Hidāyat al-Qāri'*, the letter ‘ayin could not be

¹⁰⁴ Data supplied by Aaron Hornkohl.

made ‘heavy’ by *dagesh*,¹⁰⁵ i.e. the consonant could not be pronounced with different degrees of muscular pressure. Also in Non-Standard Tiberian manuscripts, where the use of *dagesh* has been extended, ‘ayin does not take *dagesh*.

In Palestinian vocalization *dagesh* is sporadically marked on ‘ayin, it seems as a measure to ensure that it was pronounced correctly and not weakened, e.g.

אַתָּה (T-S NS 249.6, Dietrich 1968, 74* | L [BHS]: עַתָּה 1 Chron. 2.35 ‘Attai’)

[ה]פָּרָעֹה (T-S A43.1, Kahle 1930, 94 | L [BHS]: פְּרָעָה Jer. 25.19 ‘Pharaoh’)

In Non-Standard Tiberian manuscripts, ‘ayin is occasionally marked with a *rafe* sign, marking the letter as consonantal but not geminated, e.g.

חֲרֵשׁ (T-S A13.18, Blapp 2017, 140 | L [BHS]: חֲרֵשׁ Psa. 89.7 ‘is comparable’)

מִבְּךָ (T-S A13.20, Blapp 2017, 177 | L [BHS]: מִבְּךָ Psa. 68.36 ‘to the people’)

The *rafe* sign is occasionally found on ‘ayin also in Palestinian vocalization, e.g.

עֵינִי (T-S NS 249.3, Dietrich 1968, 128 | L [BHS]: עֵינִי Psa. 77.5 ‘my eyes’)

¹⁰⁵ *Hidāyat al-Qāri‘i*, Long version, edition in vol. 2 of this book, §II.L.1.3.2., §II.L.1.3.3.

In many Non-Standard Tiberian manuscripts a word-final ‘ayin is marked with *shewa*, indicating that it was a consonant that closed a syllable, e.g.

Genizah manuscripts

עָזַר הָזֶה (T-S A13.18, Blapp 2017, 127 | L [BHS]: עָזַר Psa. 90.12 ‘teach!’)

עָשָׂר רֹשֶׁת (T-S A13.20, Blapp 2017, 156 | L [BHS]: עָשָׂר Psa. 71.4 ‘wicked’)

European manuscripts

עָמָשׁ וְיִ (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]:
עָמָשׁ וְיִ 2 Sam. 22.7 ‘and he heard’)

עָרָע (ACAMO 28 2v, Pilocane 2004, 29 | L [BHS]: עָרָע ‘evil’
1 Kings 16.25)

The use of *dagesh*, *rafe* and *shewa* in the manuscripts with Non-Standard Tiberian and Palestinian vocalization reflect the perceived vulnerability to weakening of the ‘ayin. Similar strategies of vocalization were also used for other gutturals in these manuscripts (§I.1.1, §I.1.5., §I.1.8.).

Within the Standard Tiberian reading tradition a ‘ayin was prevented from potential weakening in some contexts by lengthening the vowel before it (§I.2.10.), e.g. שֵׁמְעֵיהּ [ʃa,ma.ʕe.jə:hə:] ‘Shemaiah (2 Chron. 11.2), אֲזַעֲמֵשׁ [ʃa,ma.ʕe.-'nə:ʃə:] ‘listen’ (1 Sam. 28.22). Another strategy to protect the consonantal pronunciation of ‘ayin at the end of a word-internal syllable was to place a *dagesh* in the following letter (§I.3.1.11.2.). This is found in some early manuscripts (Yeivin 1980, 295; Ginsburg 1897, 133), e.g.

C: בְּקַרְבָּן (L [BHS]: בְּקַרְבָּן ‘he supplants’ Jer. 9.3)

There is clear evidence from the Dead Sea scrolls of the weakening of ‘ayin in some biblical reading traditions in the Second Temple period, especially that of 1QIsa^a. This is reflected, for example, by the omission of ‘ayin where it occurs in the Standard Tiberian Masoretic Text, or its replacement by ’alef or *he*, e.g.¹⁰⁶

רִבּוֹר (1QIsa^a 22.19 | L [BHS]: K עֲבָר Q יְעָבָר Isa. 28.15 ‘[the flood/whip] shall pass’)

מִשְׁתְּרֵיִים (1QIsa^a 22.26 | L [BHS]: מִשְׁתְּרֵיִם Isa. 28.20 ‘[is too short] to stretch out’)

גָּפּוֹת וְעַבְדָּה (5Q6 f1v.6 | L [BHS]: גָּפּוֹת רַעַב Lam. 5.10 ‘fever from hunger’)

נָתָה (4Q27 f24ii + 27–30.18 | L [BHS]: נָתָה Num. 24.6 ‘[Yhwh] planted’)

מִסְלָה (1QIsa^a 13.17 | L [BHS]: מִסְלָה Isa. 16.1 ‘from Sela’)

וְאַתָּה (1QIsa^a 4.16 | L [BHS]: וְאַתָּה Isa. 5.5 ‘and now’)

אַצְוֹת (1QIsa^a 19.27 | L [BHS]: אַצְוֹת Isa. 25.1 ‘counsel’)

In the modern Samaritan reading tradition ‘ayin has weakened in most contexts to ’alef or zero (Ben-Hayyim 2000, 38–39), e.g.¹⁰⁷

בָּז (L [BHS]: בָּז Lev. 3.12 ‘goat’)

¹⁰⁶ Data supplied by Aaron Hornkohl. Cf. also Reymond (2014, 92).

¹⁰⁷ Data supplied by Aaron Hornkohl.

yišmā'u (L [BHS]: יִשְׁמַע Gen. 11.7 ‘they will (not) understand’)

miyyūlām (L [BHS]: מִיּוּלָם Gen. 6.4 ‘of old’)

šār (L [BHS]: שָׁר Gen. 25.25 ‘hair’)

šū (L [BHS]: שֻׁעָה Gen. 38.2 ‘Shua’)

The measures taken to ensure the correct reading of the ‘ayin in the medieval manuscripts described above show that a special effort had to be made to avoid its being weakened in the transmission of the Masoretic biblical reading traditions still in the Middle Ages.

I.1.17. *Pe פֵה* (פ, פֵ)

Pe with *dagesh* (פֵ): unvoiced aspirated bi-labial stop [p^h]

Pe without *dagesh* (פֵ): unvoiced labio-dental fricative [f]

A *pe* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

In Masoretic treatises the name of this letter is sometimes spelt פֵי or פֵא.¹⁰⁸

According to *Hidāyat al-Qāri'*, *pe* with *dagesh* was pronounced by closing the lips firmly and *pe* without *dagesh* was pronounced by closing the lips lightly.¹⁰⁹ Taken by itself, this could be a description of a bilabial articulation [ɸ]. This appears,

¹⁰⁸ E.g. *Hidāyat al-Qāri'*, short version, edition in vol. 2 of this book, §II.S.1.7.

¹⁰⁹ Long version, edition in vol. 2 of this book, §II.L.1.3.9.; ed. Eldar (1980, fols. 10b-11a, lines 84-88).

however, to be only a partial description of the sound, as is the case with the description of *bet* without *dagesh* (see §I.1.2.). The light closure of the lips would have accompanied a labio-dental articulation [f] and no doubt it is this secondary feature that the author refers to.¹¹⁰

We know from Greek and Latin transcriptions that in the pre-Masoretic period plosive *pe* was aspirated.¹¹¹ This is shown by the fact that it is represented in Greek by φ, which in the periods in question represented an aspirated stop [p^h], and in Latin by the digraph *ph*, the *h* reflecting aspiration [p^h]. Greek π and Latin *p* represented unaspirated [p]. Examples:¹¹²

Septuagint (third century B.C.E.):

Φαλτιὴλ (Göttingen Septuagint | L [BHS]: לְפִילִיטִיאֵל Num. 34.26 ‘Paltiel’)

Ἄρφαξὰδ (Göttingen Septuagint | L [BHS]: אַרְפָּחַשָּׁד Gen. 10.22 ‘Arpachshad’)

Ζέλφα (Göttingen Septuagint | L [BHS]: זֵלֶפָה Gen. 30.12 ‘Zilpah’)

Hexapla of Origen (c. 185–254 C.E.)

φεαδ (Ambrosiana Palimpsest | L [BHS]: דְּחַד Psa. 36.2 ‘fear of (cstr.)’)

¹¹⁰ Cf. the commentary to this passage by Eldar (1980, n.75.).

¹¹¹ Kutscher (1965, 24–35).

¹¹² Data supplied by Ben Kantor.

φαδίθ (Ambrosiana Palimpsest | L [BHS]: פְּדִיתָה Psa. 31.6
'you redeemed')

φαλητ (Ambrosiana Palimpsest | L [BHS]: פְּלַת Psa. 32.7
'deliverance')

αρφαθ (Ambrosiana Palimpsest | L [BHS]: חֶרְפָּת Psa. 89.51
'the reproach of (cstr.)')

λαμεσφατι (Ambrosiana Palimpsest | L [BHS]: לְמַשְׁפָּטִי Psa. 35.23 'to my judgment')

Jerome (346-420 C.E.)

pharis (Jerome, *Commentary on Ezekiel*, ed. Glorie, VI.18.504 | L [BHS]: פְּרִזֵּן Ezek. 18.10 'violent one')

phacud (Jerome, *Commentary on Ezekiel*, ed. Glorie, VII.23.1001 | L [BHS]: פְּקֹוד Ezek. 23.23 'Pekod')

iesphicu (Jerome, *Commentary on Isaiah*, ed. Gryson, I.52.4 | L [BHS]: יְשִׁפְּיקוּ Isa. 2.6 '[they] clap')

mesphat (Jerome, *Commentary on Isaiah*, ed. Gryson, II.42.6 | L [BHS]: לְמַשְׁפָּט Isa. 5.7 'judgment')

Saadya refers to the existence of a 'hard pe' (*al-fā' al-sulba*) in the hapax legomenon אֲפָרָנוּ 'his palace' (Dan. 11.45), which he describes as 'between bet and pe with dagesh'.¹¹³ This appears to be referring to an unaspirated, fortis realization of [p]. One may infer from this that the normal unvoiced stop *pe* was aspirated also in the Middle Ages. Dunash ibn Tamim reports that the

¹¹³ פִּי מَا בֵּין אַלְבִּי וְאַלְפִּי אַלְדָגֵשׁ (ed. Lambert 1891, 42).

scholar Isaac Israeli (ninth-tenth centuries), who was ‘an expert in the reading of the Tiberians’, pronounced the *dalet* in this word like an Arabic *dā’*, i.e. as emphatic (pharyngealized).¹¹⁴ This implies that the ‘hard’ *pe* was also emphatic, the *dalet* being pronounced emphatic by assimilation (Steiner 1993).

The word **נְפָנָה** is a loanword from Old Persian. The source word in Old Persian is reconstructed by Iranists as *apadāna*, *āpadāna* or *appadāna* ‘palace, audience chamber’. The *p* in Old Persian was unaspirated. The lack of aspiration was preserved when the word was loaned into Hebrew and this was transmitted in the Tiberian oral tradition down to the Middle Ages. There is no consensus among Iranists about the length of the initial vowel in the Old Persian word and whether the *p* was geminate or not (Ciancaglini 2008, 113–14). According to Henning (1944, 110 n.1), the *p* was originally geminated but the gemination of the Old Persian *p* was lost in Middle Persian (Old Persian *appadān* > Middle Persian **āpaðan*). In the Tiberian tradition, the *pe* is geminated, which could, therefore, be an ancient feature. The antiquity of the gemination is shown, moreover, by the fact that the Old Persian word appears as a loanword in an Akkadian text datable to the Late Babylonian period where the *p* is represented as geminated: *ap-pa-da-an* (*appadān*).¹¹⁵

¹¹⁴ Dunash ibn Tamim, *Commentary on Sefer Yesira* (ed. Mann 1931, 1:670, n.106). For this passage see §I.1.4.

¹¹⁵ *The Assyrian Dictionary of the Oriental Institute of the University of Chicago*, A/2 (1968), Chicago: Oriental Institute, 178.

There is evidence for the unaspirated pronunciation of the *pe* in this word in Greek and Latin transcriptions in the pre-Masoretic period, e.g.¹¹⁶

Απαδανω (Theodoretus, fifth century C.E., *Commentarius in Visiones Danielis Prophetae*, e.g. Migne, 81.1532)

apedno (Jerome, fourth century C.E., *Commentarii in Danielem*, ed. Glorie, IV.11)

In these transcriptions the *pe* is represented by Greek π and Latin *p* without following *h*, both of which represented unaspirated [p]. Jerome (*Commentarii in Danielem*, IV, 11–12) comments on the *pe* in this word as follows:

Notandum autem quod cum pe littera hebraeus sermo non habeat, sed pro ipsa utatur phe cuius uim graecum ϕ sonat, in isto tantum loco apud Hebraeos scribatur quidem phe sed legatur pe.

But it should be noted that while Hebrew speech does not have the letter *pe* (i.e. Latin *p* [p]), but instead of it uses *phe*, the force of which is approximated by the sound of Greek ϕ (i.e. [ph]), in that particular place (i.e. Dan. 11.45) among the Hebrews *phe* (i.e. \beth [ph]) indeed is written but it is read as *pe* (i.e., Latin *p* [p]).

It should be noted, however, that some Greek transcriptions are extant that represent the *pe* in the word by ϕ , reflecting an aspirated pronunciation, e.g.

εφαδανω (Theodotion, second century C.E.)

¹¹⁶ Data supplied by Ben Kantor.

εφαδανω/αφαδανω (Polychronios, fifth century C.E., *Commentarii in Danielem*, ed. Moutsoulas, 11.45)

This suggests that there were variant traditions of reading the *pe*, some preserving the unaspirated *pe* others pronouncing the *pe* as aspirated.

Another feature of all the Greek and Latin transcriptions cited above is that they represent the *pe* as ungeminated, whereas it is geminated in Tiberian tradition.

The word appears in various dialects of Aramaic, including Syriac, Jewish Babylonian Aramaic and the Aramaic of Targum Jonathan (Sokoloff 2009, 81, 2002, 154). In Syriac, where there is a reliable tradition of vocalization, the *pe* is ungeminated: ܟܼܾܻ (‘āpadhnā). There are, however, variant vocalizations of the word in the sources (Payne Smith 1879, 329–30). In some manuscripts, the *pe* is marked with a diacritic that is used elsewhere to represent the *pe* corresponding to an unaspirated π in Greek loanwords (J. B. Segal 1989, 489). The word appears in Arabic as *fadan* ‘palace’.

The *pe* in פָּדָן in the Tiberian reading tradition was pronounced not only unaspirated but also pharyngealized. Elsewhere in the sound system of Tiberian Hebrew unaspirated unvoiced stops were pharyngealized, i.e. *tet* and *qof*. The feature of lack of aspiration did not exist in unvoiced stops without pharyngealization. Pharyngealization was, therefore, perceived to be the closest equivalent in the sound system of Tiberian Hebrew to the feature of lack of aspiration of the *pe*. This also applied to the sound system of the spoken language of the tradents of the reading tradition. At the time of Saadya and Isaac

Israeli, who report this feature, the spoken language was Arabic, in which unvoiced unaspirated stops were pharyngealized (i.e. the *tā'* and the *qāf*). It is not clear whether the pharyngealization of the *pe* in אֲפָקָנוּ existed in the reading tradition in the pre-Islamic period. Greek unaspirated *τ* and *κ*, likewise, were perceived to correspond most closely to Hebrew emphatic *tet* and *qof*, as shown by Greek transcriptions of Hebrew, e.g. Λώτ (Septuagint, τότε Gen. 11.27 ‘Lot’), Ἐνάκ (Septuagint, עֲנָק Deut. 9.2 ‘Anak’) and by Greek loanwords in Hebrew, e.g. פְּרַסְטָלָוּ ‘colonnade’ < περίστυλον (Copper Scroll 3Q15), קִתְרוֹס (*ketiv* כִּתְרוֹס) ‘zither’ < κιθαρος (Dan. 3.5, 7, 10, 15) (Heijmans 2013a).

A Masoretic note to Dan. 3.21 in L reads as follows

ג מפק פ בפומיהון וסימנהון פסנתרין פטישיהון אפדנו משניין לקרואה

The meaning of this is not fully clear. One possible interpretation is as follows:

There are three cases where *pe* is pronounced differently by the reader, namely פָּסְנֶתֶרִין ‘stringed instrument’ (Dan. 3.5, 3.7, 3.10, 3.15), פְּטִישֵׁתָהָן ‘their tunics’ (*ketiv* פְּטִישֵׁהָן Dan. 3.21), and אֲפָקָנוּ ‘his palace’ (Dan. 11.45).

This suggests that the *pe* also of the words פָּסְנֶתֶרִין and פְּטִישֵׁתָהָן, which occur in the Aramaic section of the Bible, were pronounced unaspirated. The word פָּסְנֶתֶרִין is a loan from Greek ψαλτήριον, so the *pe* would correspond to the unaspirated segment in the affricate ψ [ps]. The word פְּטִישֵׁתָהָן is of uncertain etymology, but it has been suggested by Nyberg (1931, 187) that the source is Old Persian **patuš* ‘garment’, in which case the *pe* would correspond to an Old Persian unaspirated *p*. The *tet* in the word would, moreover, reflect the Old Persian unaspirated *t*.

It should be noted that there are a number of other Old Persian loanwords in Biblical Hebrew in which a Hebrew *pe* corresponds to an unaspirated *p* in the Old Persian source word but which were pronounced aspirated in the Tiberian Hebrew reading tradition, e.g. אַחֲשָׁרְפָנִים ‘satrap’ (< Old Persian *xšaθra-pāwan*) (Esther 3.12, 8.9, 9.3; Ezra 8.36), פְּתֻגָּם ‘message’ (< Old Persian **patiy-gama*) (Ecc. 8.11; Esther 1.20), פְּתַשֵּׁן ‘a copy’ (< Old Persian **patiy-caṇniya* or **patiy-caṇna*) (Esther 3.14, 4.8, 8.13) (Gindin 2013). It would appear that in such cases the original unaspirated *p* was adapted to the sound system of Hebrew. Greek transcriptions such as εφαδανω (Theodotion, second century C.E.) and εφαδανω/αφαδανω (Polychronios, fifth century C.E.), cited above, would reflect a similar adaption of the *pe* also in the word נֶפֶךְ in some reading traditions.

I.1.18. SADE יָצֵא (צ, צ)

Unvoiced emphatic (pharyngealized) alveolar sibilant [s̯]

The name of the letter is vocalized יָצֵא in a Masoretic treatise (ed. Allony and Yeivin 1985, 102), with *shewa* in the initial syllable, reflecting a pronunciation with stress on the final syllable.

According to the medieval sources, it was articulated in the same place as the letters *zayin* and *samekh*,¹¹⁷ apparently with the blade of the tongue rather than the tip (see the description of *zayin* §I.1.7). In the Karaite transcriptions, it is represented by

¹¹⁷ *Hidāyat al-Qāri'*, Long version, edition in vol. 2 of this book, §II.L.1.3.8.; ed. Eldar (1980, fol. 10b, line 77), *Sefer Yeṣira* (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

Arabic *ṣād*, which was an unvoiced pharyngealized alveolar sibilant [s^f], e.g.

صَبَّافٌ (BL Or 2539 MS A, fol. 64v, 9 | L [BHS]: צָבָא Gen. 21.22 ‘his host’)

مُصْرِيَّم (BL Or 2539 MS A, fol. 92r, 6 | L [BHS]: מִצְרַיִם Deut. 7.18 ‘Egypt’)

In §I.1.7. references are given to what appears to have been a voiced emphatic variant of *sade* [z^f].

A Karaite transcription is extant in which Arabic *sīn* is written where the Masoretic Text has *sade*, reflecting the weakening of the emphatic pronunciation:

וּפְרִיס (BL Or 2555 fol. 111v, 3 | L [BHS]: וּפְרִיס Ecc. 10.8
‘and he who breaks’)

I.1.19. *QOF* קֹף (ק)

Unvoiced advanced uvular unaspirated plosive [q]

According to *Hidāyat al-Qāri'*, *qof* was articulated with the ‘middle of the tongue’, and so further forward than fricative *gimel* and *kaf*, which were pronounced with the ‘back third of the tongue’.¹¹⁸ This suggests an advanced uvular point of articulation. In the Karaite transcriptions, this letter is represented by Arabic *qāf*, e.g.

¹¹⁸ Long version, edition in vol. 2 of this book, §II.L.1.3.6.; ed. Eldar (1980, fols. 10a–10b, lines 61–72).

حَلَّقَ (BL Or 2539 MS A, fol. 85v, 4 | L [BHS]: קָלַח Deut.

4.19 ‘he divided’)

وَبَقَارَ (BL Or 2539 MS A, fol. 74r, 5 | L [BHS]: וּבְקָרָ Gen.

24.35 ‘and cattle’)

لِرْقُونَوْ (BL Or 2539 MS A, fol. 63r, 2 | L [BHS]: لِرْكُونِيْ? Gen.

21.7 ‘in his old age’)

According to the medieval Arabic grammarians, *qāf* was unaspirated and articulated between the velar stop *kāf* and the uvular fricatives *khā'* and *ghayn* (Roman 1983, 110), i.e. in advanced uvular position. It is the emphatic counterpart of the dorsal velar stop *kāf* (Jakobson 1978; Watson 2007, 43–44).

The lack of aspiration of *qof* is reflected by Greek and Latin transcriptions from the first half of the first millennium C.E. In these the letter is transcribed by Greek *κ* and Latin *c* or *g*, which represented unaspirated stops, e.g.¹¹⁹

Septuagint (third century B.C.E.)

Κεδαμώθ (Göttingen Septuagint | L [BHS]: קָדָמוֹת Deut. 2.26
‘Kedemoth’)

Ἐνάκ (Göttingen Septuagint | L [BHS]: עֲנָק Deut. 9.2 ‘Anak’)

Hexapla of Origen (c. 185–254 C.E.)

κουμ (Ambrosiana Palimpsest | L [BHS]: כּוּם Psa. 18.39 ‘to rise’)

¹¹⁹ Data supplied by Ben Kantor.

ουαχισα (Ambrosiana Palimpsest | L [BHS]: וְהַקִּישָׁה Psa. 35.23 ‘awake! (ms)’)

Jerome (346-420 C.E.)

cira (Jerome, Commentary on the Minor Prophets, Amos, ed. Adriaen, I.1, 217 | L [BHS]: קִירָה Amos 1.5 ‘Kir’)

boger (Jerome, Commentary on the Minor Prophets, Amos, ed. Adriaen, III.7, 324 | L [BHS]: בּוֹקֵר Amos 7.14 ‘herdsman’)

I.1.20. *RESH* (רִישׁ)

(i) Voiced advanced uvular trill [ṛ] or advanced uvular frictionless continuant [ʁ̥] and (ii) pharyngealized apico-alveolar trill [r̥]

According to *Hidāyat al-Qāri'*, the Tiberians pronounced *resh* in two different ways, as was the case with the letters בְּגַדְכְּפַת.

Its basic articulation was with ‘the middle third of the tongue’, as was the case with *qof* and plosive *kaf*, suggesting an advanced uvular position. It is not made clear whether it was a trill [ṛ] or frictionless continuant [ʁ̥]. In what follows, it will be transcribed as an advanced uvular trill [ṛ].¹²⁰

The secondary pronunciation of *resh* is said in the medieval sources to occur in the environment of the alveolar consonants דִּצְתָּטָלִי and can be inferred to be an apical alveolar trill. It is described by *Hidāyat al-Qāri'* as being intermediate in status

¹²⁰ *Hidāyat al-Qāri'*, Long version, edition in vol. 2 of this book, §II.L.1.3.6.; Eldar (1984a).

(*manzila bayna manzilatayn* ‘grade between two grades’), i.e. intermediate between the simple primary *resh*, which is described as ‘light’ (*khafif*), and geminated *resh* marked with the *dagesh* sign in the Tiberian vocalization, which is termed ‘major *resh*’ (*al-resh al-kabīr*).¹²¹ When contrasting it with the primary *resh*, *Hidāyat al-Qāri'* describes the secondary *resh* as having the feature of ‘heaviness’ (*thiqal*) whereas the simple *resh* has the feature of ‘lightness’ (*khiffa*).¹²² The intermediate status of the secondary *resh*, therefore, can be identified as being an intermediate degree of muscular tension, between the light advanced uvular *resh* and the maximal degree of muscular tension brought about by the gemination of the *resh*. The instances of geminated *resh* marked with *dagesh* in the Standard Tiberian reading tradition appear to have lengthened forms of the primary *resh*, i.e. advanced uvular trills. They do not occur in the contexts that are said to condition the secondary alveolar *resh*. So geminated *resh* ר may be transcribed [ᵣᵣ], e.g. הַרְעִים הָרִיְּרִים [haᵣᵣim:i'ₖmɔ:ch] ‘to irritate her’ (1 Sam. 1.6).

¹²¹ *Hidāyat al-Qāri'*, Long version, edition in vol. 2 of this book, §II.L.1.9.6.; Eldar (1984a).

¹²² *Hidāyat al-Qāri'*, Long version, edition in vol. 2 of this book, §II.L.1.9.5., §II.L.1.9.7. The Hebrew *Mahberet ha-Tijān* (ed. J. Derenbourg 1871, 81) states that the Tiberians pronounced this *resh* strongly (מחזקם). An anonymous Masoretic treatise preserved in the Genizah fragment CUL T-S NS 311.113 states that the Tiberians pronounced the *resh* with *dagesh* (ידגשׁוּהָ), but ‘in our country we do not know (this pronunciation)’. This is presumably referring to the Tiberain secondary *resh*.

We know from various sources that the Hebrew letter *resh* had two different types of pronunciation in the Middle Ages. The earliest text referring to this is *Sefer Yesira*:

בג"ד כפר"ת. These are pronounced in two ways, which are two opposites—soft and hard, a strong structure as opposed to a weak one.¹²³

In his commentary on *Sefer Yesira*, Saadya discusses the double pronunciation of the Hebrew *resh*. He states that the letters are called double (*mudā'afa*) ‘because each of the letters is pronounced with two pronunciations, a hard pronunciation and a soft pronunciation’.¹²⁴ He refers to a difference between the Tiberian and Babylonian pronunciations of *resh*:

As for the double nature of the *resh*, the Tiberians have it in their reading of the Bible, whereas the Iraqis have it in their speech but not in their reading of the Bible. They call one type *resh makrūkh* and the other *ghayr makrūkh* ('not *makrūkh*'). As for the customs of the Iraqis in this matter, we have examined them but have found no principle uniting them. As for the customs of the Tiberians, we shall mention them in the commentary on the fourth part of this book.¹²⁵

¹²³ שבע כפולות בג"ד כפר"ת ... וمتנהגות לשונות כפולות של תמורות: בית בית, גימל גימל, דל דל, כף כף, פה פה, ריש ריש, חיו חיו בוגר בוגר בוגר בוגר (ed. Gruenwald 1971, 156; ed. Hayman 2004, 54). For variant versions see Hayman (2004, 51, 127).

¹²⁴ לאן כל חרף מנהא יכרג בצוין צות בלשן וצוט לין (ed. Lambert 1891, 29).

¹²⁵ ואמר תצאע אלריש פאה לטלבראנין פי אלמקרה, ולעלראקין פי כלאמהム לא פי פאמא רסום אלעלראקין פי זלך. אלמקרה, ויקולון הוזא ריש מכירז וריש גיר מכירז

Elsewhere in his commentary on *Sefer Yesira* Saadya refers to the ‘hard’ *resh* as *resh dagesh* and the ‘soft’ *resh* as *resh rafe*.¹²⁶

The word *makrūkh*, which is used by Saadya in the passage cited above, has been interpreted by scholars in various ways.¹²⁷ The most satisfactory interpretation is that it is an Arabicized form of the Hebrew word קָרֹזֶךְ ‘wrapped up, closed up’, analogous to the forms *madgush* ‘with *dagesh*’ and *marfi* ‘with *rafe*’, which are widely attested Arabicizations of the Hebrew terms **דַגּוּשׁ** and **רַפְויִ**. The term קָרֹזֶךְ is found in Masoretic sources in reference to closed syllables, as in the following passage from *Diqduqe ha-Te‘amim*:

asm lishon beracha um biiyit meshocheh vbo hattum tamocha leulom hay crvca cmo
vhatkbercu bo ... vam ul c”f tenu yafach namo vbelshon ynuimmo cmo vaberkha

فالتمسנהה פלט נגד להא אצלא יגעהה. ואמא רסום אלטבראנין פאנא נדכראה פי
תفسיר אלפרק אלראבע מן הדא אלכתאב Saadya describes how the hard *resh* occurs in certain phonetic environments (see below).

¹²⁶ Ed. Lambert (1891, 79). In some medieval sources describing the two different types of Tiberian *resh* the terms *dagesh* and *rafe* are confused. This is the case, for example, in *Diqduqe ha-Te‘amim* (ed. Baer and Strack 1879, §7) and the Hebrew *Mahberet al-Tijān* (ed. J. Derenbourg 1871, 138). According to Revell (1981, 133) this confusion arose from the fact that in the few cases where the *dagesh* sign is marked in the *resh* in the Tiberian text, the *resh* is not preceded by the letters דִזְחַתְטָלֵן nor is it followed by לִן. A *resh* that did occur in the environment of these letters was, therefore, considered to be *rafe*. Such sources, or the versions that have come down to us, must have been written by scribes who had no direct knowledge of the Tiberian pronunciation tradition.

¹²⁷ Morag (1960, 217–19).

מִבְרָכֵךְ ... חֹזֶם אֲחָד בַּמִּקְרָא מִיּוֹחֵד כִּי עַל כַּף טָעָמו וְלֹא יִפְתַּח בְּנָאָמו
מִנְדָּעֵי עַלְיָתָו וְלֹעֲלָה בְּרָכָת

If a form of the root בָּרָךְ has a *bet* with a vowel and the accent falls on it (i.e. the *bet*), it is always pronounced ‘closed up’ as in בָּרוּךְ בָּנוּ ‘and may they bless themselves by him’ (Psa. 72.17) ... But if the accent falls on the *resh*, it is opened up in speech and pronounced with a vowel as in אָבָרְכָה מִבְרָכֵךְ ‘and I will bless those who bless you’ (Gen. 12.3) ... Except for one word, which is unique in the Bible, for its accent falls on the *kaf* but it is not opened up in speech: וּמִנְדָּעֵי עַלְיָתָו וְלֹעֲלָה בְּרָכָת ‘and my reason returned to me and I blessed the Most High’ (Dan. 4.31).¹²⁸

In this passage, the term כְּרוֹץ is used to describe forms in which a *shewa* is silent, i.e. the *shewa* coincides with the closure of the syllable. The opposite of כְּרוֹץ is when פִּתְחָה בְּנָאָם, which literally means ‘it is opened up in speech’. This refers to the fact that the *shewa* is vocalic.

In the phrase *resh makrūkh*, the term is a calque of the Arabic phonetic term *muṭbaq* (literally ‘closed, covered’), which was used in the medieval Arabic grammatical tradition to refer to emphatic consonants, i.e. pharyngealized consonants.¹²⁹ A non-emphatic letter was referred to in the Arabic grammatical tradition by the term *munfatih* ‘open’. The description of the Arabic emphatic letters by the grammarian Sībawayhi (eighth century C.E.) is as follows:

¹²⁸ Ed. Baer and Strack (1879, §53). For variant texts of this passage see ed. Dotan (1967, 140, 263).

¹²⁹ For details see Khan (1995).

When you position your tongue in the places of articulation of these four (emphatic) letters, your tongue forms a cover/closure extending from their place of articulation until the palate. You raise the back of the tongue towards the palate and when you have positioned your tongue thus, the sound is compressed between the tongue and the palate up to the place of articulation of the letters.¹³⁰

The terminological opposition between כרוכה and פתח בנם in the passage from *Diqduqe ha-Te'amim* above would, therefore, be directly parallel to the contrasting pair of terms *mutbaq* vs. *munfatih*, which designated emphatic vs. non-emphatic consonants.

This variant of *resh*, therefore, was pronounced pharyngealized. Evidence for such an interpretation is found in the report by Dunash ibn Tamim that his teacher Isaac Israeli (tenth century), ‘an expert in the Tiberian reading tradition’, pronounced the *dalet* in the word זִדְרָכִו ‘and they bent’ (Jer. 9.2) like the pharyngealized Arabic letter *dād* (لشونم), by which he meant a pharyngealized voiced interdental [ð̪]. This must have arisen by the spreading the pharyngealization of the contiguous *resh*.¹³¹

In a fragment of a Masoretic treatise datable to the tenth century, it is stated that this variant of *resh* ‘is pronounced with a turning of the tongue’ (*yuqāl bi-taqallub al-lisān*).¹³² This seems

¹³⁰ وهذه الحروف الاربعة اذا وضعت لسانك في مواضعهن انطبق لسانك من مواضعهن الى ما حاذى الحنك الاعلى من اللسان ترفعه الى الحنك فإذا وضعت لسانك فالصوت محصور في ما بين اللسان والحنك الى موضع الحروف *al-Kitāb*, ed. Derenbourg (1889, 455).

¹³¹ For this passage see §I.1.4.

¹³² Allony (1973, 102, text line 28).

to be referring to the retroflexion of the tongue tip (Khan 1995, 79). Retroflexion of the tongue tip is a feature often associated with pharyngealized alveolar *r* in modern spoken Semitic languages.¹³³

The references to the ‘heavy’ or ‘hard’ pronunciation of the secondary *resh* and its association with the term *dagesh* (e.g. Saadya *resh dagesh*), can be correlated with the fact that pharyngealized *r* was pronounced with greater muscular tension.

According to *Hidāyat al-Qāri'* and other medieval sources, this apico-alveolar pharyngealized *resh* occurred when it is preceded by the consonants זְצַחַת סָלִיל or followed by לִי and when either *resh* or one of these consonants has *shewa*.¹³⁴ This can be reformulated as the rule that alveolar *resh* occurs when one of the following conditions holds:

- (i) *Resh* is in immediate contact with a preceding alveolar, e.g. בָמִזְרָה [bamiz'r̥ɛ:] ‘with a pitchfork’ (Jer. 15.7), מְצֻרָה [mas'r̥e:ef] ‘crucible’ (Prov. 17.3).
- (ii) *Resh* is in the same syllable, or at least the same foot, as a preceding alveolar, e.g. דָרְבּוֹ [dar'kʰo:] ‘his way’ (Gen. 24.21), טָרְפִי [tˤar'p̥e:] ‘the leaves’ (Ezek. 17.9). The condition applies also to a *resh* in word-final position that is in the same syllable or at least the same foot as an alveolar,

¹³³ E.g. in Neo-Aramaic dialects (Khan 2008, 32).

¹³⁴ *Hidāyat al-Qāri'*, Long version, edition in vol. 2 of this book, §II.L.1.9.4., §II.L.1.9.7.; Saadya, *Commentary on Sefer Yešira* (ed. Lambert 1891, 79); Masoretic treatise attributed to Yehudah ha-Nazir (ed. Allony, 104, text lines 51-56).

although the *resh* is not marked with a *shewa* in such cases, e.g. שָׁרֵךְ [sar^r] ‘commander of’ (1 Sam. 18.13), לְמַטֵּר [lim't^ra:ar^r] ‘by the rain’ (Deut. 11.11).¹³⁵ A consonant with vocalic *shewa* is treated as belonging to the same foot as the following *resh* in the metrical structure of the phonetic realization of the word (§I.2.5.2.), e.g. צְרוֹפָה [(s^ra.r^ru:.)('fɔ:)]) ‘refined’ (2 Sam. 22.31), where feet are enclosed in round brackets and syllable boundaries are marked by dots. Likewise, as can be seen from the transcription לְמַטֵּר [lim't^ra:ar^r], a closed syllable containing a long vowel has an epenthetic vowel of the same quality following the long vowel. It will be argued, however, that it is nevertheless in the same prosodic foot, viz. [(lim.)(t^ra:.ar^r)] (§I.2.4.). On the phonetic level, therefore, the *resh* is strictly not in the same syllable as the alveolar in forms such as צְרוֹפָה [s^ra.r^ru:.'fɔ:] and לְמַטֵּר [lim.'t^ra:.ar^r]. The conditioning factor for the emphatic allophone of the *resh* is that it occurs in the same foot as a preceding alveolar.

- (iii) *Resh* is in immediate contact with or in the same syllable, or at least in the same foot, as a following ל or נ, e.g. עַרְלִיָּה-לֶבֶן [ʃar'l^re:l-e:ev] ‘uncircumcised in heart’ (Jer. 9.25), גַּרְנִיָּה [gɔ:r'ni:] ‘my threshing-floor’ (Isa. 21.10), רַגְנִנָּה [r^ranna'nu:] ‘rejoice!’ (Psa. 33.1), רַגְנִנָּה [r^ranna'ca:] ‘joyful cry’ (Job 3.7).

Elsewhere *resh* had an advanced uvular realization, e.g. רַכְבָּב ['rɛ:xəv] ‘chariots’ (Exod. 14.9), מַרְאָה [maR'ʔe:] ‘appearance’

¹³⁵ These last two examples are cited by Saadya, *Commentary on Sefer Yesira* (ed. Lambert 1891, 79).

(Gen. 12.11), שָׁמַר [ʃɔ:m̥a:aR] ‘he kept’ (Gen. 37.11), אָרְדוֹןְךָ [?eR'do:of] (Psa. 18.38).

As can be seen in (ii) above, Saadya cites the example שָׁרֵךְ [sar^s] with *sin*. The letter *sin* (שׁ), therefore, also conditioned the occurrence of the pharyngealized *resh* in the appropriate contexts, although it is not explicitly mentioned in the list of conditioning consonants in the medieval sources, which includes only נִצְחָתָסְלִין. The letters *sin* and *samekh* had the same realization [s]. The written letter *sin* was considered to have *samekh* as its *qere* (§I.0.8.).

Pharyngealized *resh* is not unknown in modern reading traditions, e.g. in the tradition of Morocco (with the exception of Tetouan) *resh* may be realized as an emphatic alveolar trill [r^s], generally in the environment of *a* or *u* or an emphatic consonant

?úr^s (Akun 2010, 49 | L [BHS]: אָזָר / אָזָר Gen. 1.3 ‘light’)

This pharyngealization, moreover, may spread to adjacent consonants, e.g.

is^sr^sa'il (Akun 2010, 72 | L [BHS]: יִשְׂרָאֵל Exod. 15.1 ‘Israel’)

jar^sd^su (Akun 2010, 72 | L [BHS]: יָרַדְךָ Exod. 15.5 ‘they went down’)

In Jewish Palestinian Aramaic sources from the pre-Masoretic period, an *a* or *i* vowel sometimes shifts to a rounded vowel represented by *vav* in the orthography. This occurs in particular in a syllable closed by a labial consonant or *resh*, e.g. (< *gavrā), ‘man’, אַרְמָשָׁא (< *ramšā) ‘evening’, תַּוְרָעָא (< *tar^cā) ‘door’, יְרָדָנָא (< *yardenā) ‘Jordan’ (Dalman 1894, 65). A similar

vowel shift is attested in Christian Palestinian Aramaic, Samaritan Aramaic and also Palestinian Rabbinic Hebrew (Ben-Hayyim 1946, 194–96; Kutscher 1979, 496–97; Mishor 1998). Rounding of a vowel in the environment of labials is a natural development. The motivation for the rounding and backing in the environment of *resh* is not so clear, but could reflect a pharyngealized pronunciation of *resh*. Pharyngealized consonants involve the retraction of the tongue and consequent lip-rounding.¹³⁶ In Palestinian Aramaic and Rabbinic Hebrew, the *vav* before *resh* is not restricted to the environments that induced the pharyngealized *resh* in Tiberian Hebrew, but it may be interpreted as evidence that a pharyngealized *resh* existed in the spoken language of the Jews of Palestine in the pre-Islamic period.

In the passage from his commentary on the *Sefer Yesira* that is cited above, Saadya states that the Tiberians have a double *resh* in their reading of the Bible, whereas the Iraqis (i.e. Babylonians) have it in their speech but not in their reading of the Bible.

Saadya does not specify which type of Tiberian *resh* resembles the *resh* in the Babylonian biblical reading tradition. *Sefer Yesira* classifies *resh* among the consonants pronounced at the front of the mouth ‘between the teeth and with a resting tongue’¹³⁷ According to Morag (1960, 233), this reflects the

¹³⁶ For labialization associated with pharyngealized consonants in modern spoken Arabic dialects see Bellem (2007) and for this feature in Neo-Aramaic see Khan (2016, vol. 1, 50).

¹³⁷ בְּלִשּׁוֹן ‘between the teeth and with a resting tongue’, בְּשִׁינִים וּבְלִשּׁוֹן יִשְׁן ‘with a resting and flat tongue’ (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

pronunciation of the Babylonian Jews. This was no doubt similar to the pronunciation of *resh* in the modern reading tradition of the Jews of Baghdad, in which it is realized as an alveolar trill (Morag 1977, 6). It is significant to note that in the modern Arabic dialect of the Jews of Baghdad there are two reflexes of Classical Arabic *rā'*, viz. (i) a back velar or uvular fricative ([χ], [ʁ]) or (ii) an alveolar trill [r] (Blanc 1964, 20–25; Mansour 1974, vol. 1, 25-31, 34-35). This two-fold pronunciation in the Arabic vernacular may be the double *resh* of the speech of the Iraqis described by Saadya. So, the comparison by Saadya of the Tiberian *resh* with the Iraqi vernacular *resh* can be taken as evidence supporting the proposal to identify the two types of Tiberian *resh* as apical and advanced uvular.

Saadya does not refer to the speech of the Tiberians, but other sources indicate that the distinction between different types of *resh* in the Tiberian reading is also found in the local vernacular speech. The author of one extant Masoretic Treatise datable to the tenth century states that he undertook fieldwork in the streets of Tiberias to verify his analysis of the *resh* of the Tiberian reading, on the grounds that *resh* had the same pronunciation in the local speech of the (Jewish) inhabitants of Tiberias:

‘I spent a long time sitting in the squares of Tiberias and its streets listening to the speech of the common people, investigating the language and its principles, seeing whether anything that I had established was overturned or any of my opinions proved to be false, in what was uttered with regard to Hebrew and Aramaic, etc., that is the

language of the Targum, for it resembles Hebrew ... and it turned out to be correct and accurate.¹³⁸

The interpretation of this is not completely clear. The Aramaic mentioned by the author could have been vernacular Aramaic that was still spoken in Tiberias at the period. The Hebrew must have been the recitation of Hebrew liturgy or the occurrence of a ‘Hebrew component’ (Hebrew words and phrases) within vernacular speech. The reference to the two types of *resh* is found also in a Hebrew treatise in the corpus published by Baer and Strack,¹³⁹ in which, likewise, it is stated that this pronunciation existed in the conversational speech of the common people.

I.1.21. SIN שין (ש)

Unvoiced alveolar sibilant [s]

This had the same pronunciation as *samekh* in the Tiberian tradition. It is not distinguished from *samekh* in *Hidāyat al-Qāri'*. When it is stated in this work that ‘The fourth place of articulation is the teeth, from which are heard four letters, namely זצשׁ (zayin, *samekh*, *šade* and *shin*),’¹⁴⁰ the letter ס is intended to refer to both *samekh* and *sin*. As discussed in the

¹³⁸ וכנה אטיל עלגלוֹס פִי סוחאת טבריה ושורעה א[ס]ת[מע כלאם אלסוקה ואלעאמה ואבחת עז עלגה ואצול[הא] אנטר הל ינכר שי ממא אצלת או ינפסד שי ממא טהר לי וכי מא נקט ב[ה מ]ן אלעראני ואלסריאני ואנוואה אע לגה אלתרגום וגירה פאהן מגאלנס ליעבראני ... פכרגע צחיח מהחר (Allony 1973, 98–100).

¹³⁹ Baer and Strack (1879, §7).

¹⁴⁰ Long version, edition in vol. 2 of this book, §II.L.1.3.8.

Introduction (§I.0.8.), the written letter *sin* was considered to have *samekh* as its *qere*.

In the Karaite transcriptions, the diacritical dot of Hebrew *sin* is sometimes written over the left side of Arabic *sīn* when it transcribes *samekh*, e.g.

حسبیدا خا (BL Or 2551 fol. 10r, 8 | L [BHS]: חסידיך Psa.

52.11 ‘your saints’)

مسنطير (BL Or 2551 fol. 13v, 7 | L [BHS]: מסתנתר Psa. 54.2

‘he who hides’)

كاحاسن (BL Or 2539 MS A, fol. 65r, 3 | L [BHS]: כהאסן Gen.

21.23 ‘like the kindness’)

As remarked in the Introduction (§I.0.8.), *samekh* and *sin* sometimes interchange in the same word or root in the fixed orthography of the Masoretic Text, e.g.

שכרים | וטכרים Ezra 4.5: ‘and they hire’ vs. 2 Chron. 24.12

In the biblical manuscripts from Qumran, there are many cases of *sin* occurring in place of Masoretic *samekh* and vice versa, which is additional evidence that the equivalence in pronunciation existed already in the Second Temple Period, e.g.¹⁴¹

פַּשְׁת (4Q136 f1.8 | L [BHS]: פַּסְחָה Exod. 12.48 ‘Passover’)

¹⁴¹ Data supplied by Aaron Hornkohl.

וְשָׁרַתָּם (XHev/Se5 f1.14 | L [BHS]: Deut. 11.16 ‘and you [mpl] will turn away’)

שָׁעֵפִי הַסָּלָעִים Isa. 57.5 (1QIsa^a 47.4 | L [BHS]: ‘the clefts of the rocks’)

יִשְׁדַּעֲרֹץ Psa. 104.5 (4Q93 1.11 | L [BHS]: ‘he established the earth’)

שָׂדָה Deut. 5.21 (4Q134 f1.26 | L [BHS]: ‘his field’)

וְלֹחַשׁ Isa. 30.14 (1QIsa^a 24.23 | L [BHS]: ‘and to scoop’)

שָׂאֵי Isa. 49.18 (1QIsa^a 41.16 | L [BHS]: ‘lift up [fs]!’)

Ibn Janāḥ (Spain, eleventh century) states that the *dagesh* in the *sin* of עַשְׁבָות ‘herbage’ (Prov. 27.25) has the purpose of ensuring that it is not interchanged with *zayin*.¹⁴² This suggests that *sin* in contact with voiced consonants was susceptible of being read as voiced.

In some medieval Muslim sources, *sin* is represented by *sād* [s^f] in the name عَصْوَيْشُו (Schreiner 1886, 254). This apparently reflects its pharyngealization after the pharyngeal ‘ayin.

The pharyngealization of *sin* in the environment of emphatic consonants is attested in some modern reading traditions, e.g.

Yemen

[wajjis^{t^fe:m]] (Morag 1963, 37-38 | L [BHS]: Gen. 27.41 ‘and [Esau] hated’)}

¹⁴² *Kitāb al-Luma'* (ed. Derenbourg 1886, 240), Schreiner (1886, 241).

I.1.22. SHIN שׁ (ש)

Unvoiced palato-alveolar fricative [ʃ]

According to the medieval sources, its place of articulation was the same as that of the sibilants *zayin* and *samekh*, namely the teeth.¹⁴³ As was pointed out above in the section on *zayin* (§I.1.7.), this did not necessarily imply that the teeth were one of the primary articulators. It is described by Ibn Janāḥ as a ‘spreading letter’,¹⁴⁴ which no doubt referred to its palatalized articulation. In the Karaite transcriptions, it is represented by Arabic *shīn*, which, according to the Arabic grammarians, was a palatal fricative [ç], a pre-palatal fricative [ç⁺] or an alveolo-palatal [ç].¹⁴⁵ Tiberian *shin* was not primarily palatal, since it was not included by *Hidāyat al-Qāri*¹ among the letters that are pronounced with the middle of the tongue.

I.1.23. TAV תָּוֹתְּ (תּ)

Tav with *dagesh* (ׂ): unvoiced aspirated alveolar stop [t^h]

Tav without *dagesh* (ת): unvoiced alveolar fricative [θ]

A *tav* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

¹⁴³ *Hidāyat al-Qāri*¹, Long version, edition in vol. 2 of this book, §II.L.1.3.8.; ed. Eldar (1980, fol. 10b, line 77). *Sefer Yešira* (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

¹⁴⁴ קְרַב אֶל-תְּפִשָּׁה (*Kitāb al-Luma'*, ed. Derenbourg, 27).

¹⁴⁵ Roman (1983, 202, 218, 248).

In some manuscripts of *Hidāyat al-Qāri'*, the name of this letter is spelt תָּא or תְּא. ¹⁴⁶

According to *Hidāyat al-Qāri'*, *tav* was articulated with ‘the end of the tongue and the flesh of the teeth’, i.e. the gums or alveolar ridge.¹⁴⁷ Likewise, Saadya describes the place of articulation of *tav* as being adjacent to the inside of the upper teeth.¹⁴⁸ When the letter had *dagesh*, the tongue was pressed firmly against the gums. When it was without *dagesh*, the tongue was pressed lightly against the gums. Both forms of the letter were articulated in the same place according to the medieval sources. It appears to have been pronounced with the tip of the tongue rather than the blade (see the description of *dalet* §I.1.4.).

Hidāyat al-Qāri' describes the stop [t^h] as primary (*'asl*) and the fricative [θ] as secondary (*far*).¹⁴⁹

We know from Greek transcriptions that in the first half of the first millennium C.E. plosive *tav* was pronounced with aspiration.¹⁵⁰ In Greek transcriptions from the pre-Masoretic period, plosive *tav* is represented by Greek *theta*, which was an aspirated stop [t^h]. In Latin transcriptions from the pre-Masoretic

¹⁴⁶ E.g. short version, edition in vol. 2 of this book, §II.S.3.0., §5.1.

¹⁴⁷ Long version, edition in vol. 2 of this book, §II.L.1.3.7.; ed. Eldar (1980, fol. 10b, lines 67–69).

¹⁴⁸ *Commentary on Sefer Yešira* (ed. Lambert 1891, 75).

¹⁴⁹ Long version, edition in vol. 2 of this book, §II.L.1.2.

¹⁵⁰ Kutscher (1965, 24–35).

period, it is represented by the Latin digraph *th*, which likewise represented an aspirated stop [t^h]. Examples:¹⁵¹

Septuagint (third century B.C.E.)

Θάρα (Göttingen Septuagint | L [BHS]: תָרָה Gen. 11.24 ‘Terah’)

Νεφθαλί (Göttingen Septuagint | L [BHS]: נְפִתְלִי Gen. 30.8 ‘Naphtali’)

Hexapla of Origen (c. 185–254 C.E.)

Θαμίῳ (Ambrosiana Palimpsest | L [BHS]: תָמִים Psa. 18.26 ‘blameless’)

αμαρθι (Ambrosiana Palimpsest | L [BHS]: אַמְרָתִי Psa. 30.7 ‘I said’)

Jerome (346–420 C.E.)

tharsis (Jerome, Commentary on Ezekiel, ed. Gorie, III.10.763 | L [BHS]: טַרְשֵׁי Ezek. 10.9 ‘Tarshish’)

machthab (Jerome, Commentary on Isaiah, ed. Gryson, XI.14.6 | L [BHS]: מְכֹתָב Isa. 38.9 ‘writing’)

This aspirated realization of plosive *tav* continued in the Tiberian reading tradition. In the Karaite transcriptions, plosive *tav* with *dagesh* is represented by Arabic *tā'*, which was aspirated according to the medieval Arabic grammarians.¹⁵²

¹⁵¹ Data supplied by Ben Kantor.

¹⁵² Roman (1983, 55).

I.1.24. CONSONANT PHONEMES

The inventory of consonant phonemes in the Tiberian reading tradition can be reconstructed as follows:¹⁵³

Phoneme	Allophones	Orthography	Comments
/ʔ/	[ʔ]	אַ	
/b/	[b]	בּ	
/v/	[v]	בּ	See §I.1.25. below
/g/	[g]	גּ	
/β/	[β]	גּ	See §I.1.25. below
/d/	[d]	דּ	
/ð/	[ð]	דּ	See §I.1.25. below
/h/	[h]	הּ	
/v/	[v], [w]	וּ	There are variations in the realization of the allophones across different sub-traditions of reading (§I.1.6.).
/z/	[z]	וּ	
/ħ/	[ħ]	חּ	
/tˤ/	[tˤ]	טּ	
/j/	[j], [ʃ]	וּ	The stop allophone [ʃ] occurs only when the consonant is geminated.

¹⁵³ The inventory of consonant phonemes presented here corresponds to that proposed by Schramm (1964, 63) on the basis of the graphemes of Tiberian Hebrew, although he did not have access to the original phonetic realizations.

/k ^h /	[k ^h]	כ, צ	
/χ/	[χ]	כ, ר	See §I.1.25. below
/l/	[l]	ל	
/m/	[m]	מ, א	
/n/	[n]	ג, נ	
/s/	[s]	ס, שׁ	These were equivalent in the oral reading tradition. The distinction in orthography is an archaism (§I.0.8.).
/ʕ/	[ʕ]	ע	
/p ^h /	[p ^h]	פ	
/p ^s /	[p ^s]	פ	This is attested only in פְּלָשָׁן ‘his palace’ (Dan. 11.45), where its occurrence is not conditioned by the phonetic environment, so it should be identified as a phoneme (§I.1.17.).
/f/	[f]	פ	See §I.1.25. below
/s ^v /	[s ^v], [z ^v]	צ	For the voiced variant see §I.1.7.
/q/	[q]	ר	
/r/	[ր], [r ^v]	ר	The two variant realizations are conditioned by the phonetic environment and so should be identified as allophones (§I.1.20.).

/ʃ/	[ʃ]	שׁ	
/t ^h /	[t ^h]	תׁ	
/θ/	[θ]	תׂ	See §I.1.25. below

בגדיות האותיות (I.1.25.)

In general, the fricative variants of the letters (i.e. the forms written without a *dagesh* sign: [v], [χ], [ð], [χ], [f] and [θ], respectively) occur after a vowel when the letter is not geminated, e.g. רַב ['Ra:av] ‘much’ (Gen. 24.25), יִשְׁכַּבְנָו [jiskʰa'vu:] ‘they will lie’ (Isa. 43.17). In principle, therefore, the stop and fricative variants appear to be allophones conditioned by the environment. In many cases, however, the preceding vowel had been elided in some previous stage of the language, but the consonant nevertheless remained a fricative, e.g.

בְּכִתְבָּוֹן [baχɔθ'vo:] ‘when he had written’ (Jer. 45.1) <
*bakutubo

מֶלֶךְ [mal'χe:] ‘kings of’ (Gen. 17.16) < *malake

In a few such cases, a plosive and a fricative are in free variation, e.g.

רִשְׁפֵּי [riʃ'fe:] (Psa. 76.4), רִשְׁפֵּה [riʃ'pʰe:] (Cant. 8.6) ‘flames’

The distribution of the plosive and fricative allophones, therefore, is not completely predictable from the phonetic context in Tiberian Hebrew. Consequently, the plosive and fricative variants of the letters should be distinguished in a synchronic phonological representation, e.g.

מלך /malχē/ [mal'χe:] ‘kings of’ (Gen. 17.16)

בנְפָל /binfol/ [bin'fo:ol] ‘at the falling of’ (Isa. 30.25)

In the corpus of the Hebrew Bible, however, there is no certain minimal pair arising from the phonemicization of the variants of the בגדכפת consonants, though such oppositions could hypothetically occur in Tiberian Hebrew. Such minimal pairs are found in Aramaic, where the בגדכפת consonants were likewise phonemicized (Khan 2005, 84–87).

I.2. VOWELS AND SYLLABLE STRUCTURE

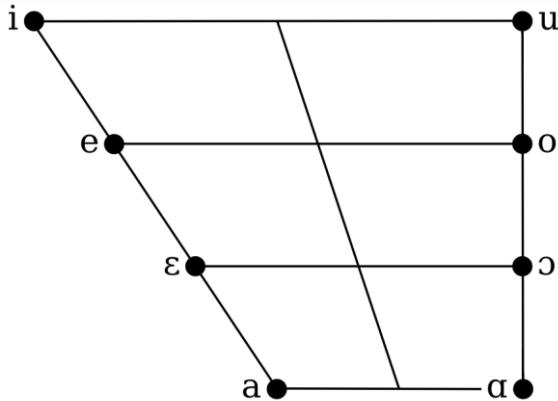
I.2.1. BASIC VOWEL SIGNS

I.2.1.1. The Qualities of the Vowels

The basic vowel signs in the standard Tiberian vocalization system indicated distinctions in vowel quality rather than distinctions in length. The qualities of the various vowels can be reconstructed as follows from the sources that are discussed below (the signs are added to the letter א):

<i>Patah</i>	תָּתָּה (א):	Open, unrounded front [a] or back [ɑ]
<i>Qames</i>	צָמֵם (א):	Back, open-mid rounded [ɔ̄]
<i>Segol</i>	סְגֹּול (א):	Front, open-mid unrounded [ɛ̄]
<i>Sere</i>	צָרֵר (א):	Front, close-mid unrounded [ē]
<i>Hireq</i>	חִירֶק (א):	Front, close, unrounded [ī]
<i>Holem</i>	חוֹלֵם (א):	Back, close-mid rounded [ō]
<i>Shureq</i>	שֻׁרְקָה (או)	Back, close, rounded [ū]
<i>Qibbus</i>	קִבּוֹץ (א):	

These qualities correspond to the eight primary cardinal vowels, which are represented diagrammatically according to their position of articulation below:



I.2.1.2. The Terms *Pataḥ* and *Qameṣ*

The terms *pataḥ* and *qameṣ* are found in the early Masoretic and grammatical sources. They are in origin Aramaic active participles and are vocalized as such in some manuscripts, viz. פָתַח and קָמֵשׁ.¹ In some Masoretic treatises forms with a final *he* are used, viz. פָתְחָה and קָמְשָׁה. The suffix may be the Aramaic definite article or the feminine ending.² In Arabic sources such as *Hidāyat al-Qāri*³ equivalent Arabic feminine participles are used, viz. فَاتِحَة fātiḥa and كَامِشَة qāmiša.⁴ The terms referred to the distinct lip positions of the two vowels, *pataḥ* ‘opening’, *qameṣ* ‘closing, contracting’,⁴ indicating that the *pataḥ* was pronounced

¹ For examples in early Karaite grammatical texts (Khan 2000a, 28).

² For the sources see Steiner (2009).

³ Eldar (1994, 123–24)

⁴ In Jewish Palestinian Aramaic the verb קָמֵשׁ is used in the sense of ‘closing (eye, mouth), e.g. דִי קָמֵץ חֲדָא וֶפְתַח חֲדָא ‘because (the sleeping deer) opens one (eye) and closes the other’ (Palestinian Talmud, *Shabbat* 14b) (Sokoloff 1992, 496).

with open, spread lips whereas the *qameṣ* was pronounced with a smaller aperture of the mouth on account of some degree of lip-rounding. The fact that the terms are Aramaic in origin indicates that they must have been created in the early Masoretic period, before the tenth century, when Aramaic was in productive use by the Masoretes. By the tenth century, Masoretic treatises were written in Hebrew or Arabic (§I.0.13.1.). The names of these vowels came to receive a variety of different vocalizations in later sources. The practice developed of vocalizing the first syllable of the names of vowels symbolically with the vowel it designated, so *pataḥ* came to be vocalized as חַתָּף. This type of vocalization, which according to Dotan was used from the eleventh century onwards,⁵ is the vocalization used, for example, by Elias Levita (1469–1549). Subsequently, the vowel of the second syllable of the names of vowels was also given a similar symbolic vocalization. These often reflect pronunciation traditions that did not distinguish between the pronunciation of the two vowels and one finds vocalizations such as צַמְקָן, חַתָּפָה and חַתָּפָה.⁶

I.2.1.3. More on the Quality of *Pataḥ* and *Qameṣ*

Saadya and *Hidāyat al-Qāri'* give details of the articulatory distinction between the vowels within the oral cavity. Their descriptions are based on a theory of the production of vowels, which can be traced to the Muslim physician Ibn Sīnā (980–1037 C.E.), that involves both the position of buccal organs and the

⁵ Dotan (2007, 634).

⁶ For details see Steiner (2009).

direction of the dynamic flow of air.⁷ The *Hidāya* states that the place of articulation of *pataḥ* is the ‘surface of the tongue at the bottom (of the mouth).⁸ Saadya similarly states that ‘its strength (i.e. dynamic realization by airflow) goes over the surface of the tongue moving downwards.⁹ With regard to *qames* the *Hidāya* indicates that its place of articulation is ‘slightly above the root of the tongue, that is the (back) third of the tongue, and its movement is towards the (place) above the palate.’¹⁰ Saadya indicates that the place of articulation of *qames* is next to that of *holem*:

‘If one wants to move the vowel from this place (of *holem*) and then articulate it, the strength (i.e. realization) of *qames* comes about, and its movement (i.e. direction of airflow) is towards the place above the palate in particular.’¹¹

According to the theory of the realization of vowels by dynamic airflow, the realization of *pataḥ* took place through the free flow of air across the surface of the tongue in a low position,

⁷ For details see Eldar (1983).

⁸ סטח אללسانן מן אספל §II.L.2.15.3.; Eldar (1994, 130).

⁹ קוותהא סאיירה עלי סטח אללسانן מנהדרה אליו אלספל (Dotan 1997, 445).

¹⁰ פוק אצל אללسانן קלילא והוא תלות אללسانן והרכבתה אליו פוק אלחנן edition in vol. 2 of this book, §II.L.2.15.2.; Eldar (1994, 130).

¹¹ ואן שא אין יתגאו באה הדא אלמורע תם יפצלהא טהרת קוה עלקמץ וכאנת חרכתה אל עלי אלחנן באצה (Dotan 1997, 445).

whereas in the realization of *qameṣ* there was some obstruction that directed the air upwards towards the palate.¹²

From the vowel names and the aforementioned descriptions of articulation, it can be determined that Tiberian *pataḥ* was an open, unrounded vowel in the region of [a] or [ɑ] whereas *qameṣ* was a back half-open rounded vowel below *holem* in the region of [ɔ].

As indicated, it is likely that *pataḥ* had both an open front quality [a] and an open back quality [ɑ]. The back quality [ɑ] would have been induced in particular by the environment of consonants involving retraction of the tongue root, especially pharyngeals and pharyngealized consonants. Indirect evidence for this is found in the modern reading traditions of Middle Eastern communities, in which the front open vowels have back open variants in particular when adjacent to pharyngeal or pharyngealized consonants. This is the case in the Sefardi type traditions, in which *pataḥ* and *qameṣ* have a default quality of [a], e.g.

Baghdad

[a] quality:

'ja:na**ḥ**bod (Morag 1977, 53 | L [BHS]: שָׁבַד Exod. 21.2 'he will work')

ša'na: (Morag 1977, 56 | L [BHS]: שָׁנָה Gen. 47.28 'year')

¹² For this interpretation see Eldar (1983, 47).

[a] quality:

wajji'^ltab' (Morag 1977, 54 | L [BHS]: בָּטִיעַן Esther 1.21 'and [the matter] was good')

'ba:^la,^lra (Morag 1977, 56 | L [BHS]: בְּעָרָה Esther 1.12 '[his anger] burned')

Aleppo

[a] quality:

jaʃa'^lqɔ:b (Katz 1981, 45 | L [BHS]: יַעֲקֹב Gen. 47.28 'Jacob')

ʃa'^lnim (Katz 1981, 45 | L [BHS]: שָׁנִים Gen. 47.28 'years')

[a] quality:

lezarʃa'^lxa (Katz 1981, 46 | L [BHS]: לִזְרָעָךְ Gen. 48.4 'to your (ms) seed')

Jerba

[a] quality:

,wena'^lfale (Katz 1977, 82 | L [BHS]: וַיַּפֵּל Exod. 21.18 'and he falls')

jo'mar (Katz 1977, 83 | L [BHS]: יְמַר Exod. 21.5 '[the slave] will say')

hiʃ'^lʃa (Katz 1977, 83 | L [BHS]: הַשָּׁא Exod. 21.3 'woman')

[a] quality:

'jɪqqah (Katz 1977, 84 | L [BHS]: יְקַחֵּה Exod. 21.10 'he will take')

we'^ljas'i^lha (Katz 1977, 75 | L [BHS]: וַיַּאֲשִׁהֵּה Exod. 21.3 '[his wife] will leave')

In the Karaite transcriptions long *pataḥ* and *qameṣ* are generally represented by *mater lectionis* 'alif, e.g.

وِيْجَامَل [vajjiggɔ:'ma:al] (BL Or 2539 MS A, fol. 63r, 2 | L
[BHS]: וַיְגָמֵל Gen. 21.8 ‘and he was weaned’)

The qualities of *pataḥ* [a] and [ɑ] would have been allophones of Arabic long /ā/, the latter in pharyngealized environments (known as *tafkhim*). The choice of 'alif in the Karaite transcriptions for the rounded *qameṣ* [ɔ] was due to its proximity to the normal range of allophones of Arabic /ā/.

The back rounded open-mid quality of *qameṣ* and its distinctness from *pataḥ* is reflected by some of the medieval Karaite transcriptions. The vowel is, for example, sporadically represented by Arabic *wāw*, e.g.

وَاوْسَاف [vɔɔ'sa:af] (Genizah MS 12, Khan 1990a, 151 | L
[BHS]: وَسَاف (Num. 19.9 ‘and he will gather up’)

[ص] وَرُوحًا [varɔɔ:'ha:asɔ] (Genizah MS 12, Khan 1990a,
151 | L [BHS]: וְרֹוחָה Num. 19.8 ‘and he will bathe’)

هُواحَاث [hɔɔ:a:'ha:θ] (II Firkovitch Arab.-Evr. 1, Harviainen 1994, 36 | L [BHS]: הֲוָהָת Gen. 4.19 ‘the one’)

يَسْرُوا [jisrɔɔ:'ʔe:el] (II Firkovitch Arab.-Evr. 1, Harviainen 1994, 36 | L [BHS]: יְשָׁרָאֵל ‘Israel’)

In the British Library manuscript Or 2554, the qualitative distinction between the open vowel *pataḥ* and the open-mid back round vowel *qameṣ* is reflected by the fact that syllables with

pataḥ are marked by the Arabic vowel *fathā*, but *fathā* is not marked on syllables with *qameṣ*, e.g.

נְתָן [nə'ta:an] (BL Or 2554 fol. 38v, 1 | L [BHS]: נִתֵּן Cant.

1.12 ‘it gave’)

يَلَدَّأْتُخَا [jal'a:aθχɔ:] (BL Or 2554 fol. 87r, 9 | L [BHS]:

יָלַדְתָּךְ Cant. 8.5 ‘she gave birth to you’)

I.2.1.4. The Quality of *Qameṣ* in Other Traditions

The medieval Babylonian pronunciation tradition also had a qualitative distinction between open *pataḥ* and rounded *qameṣ*. This is reflected by Babylonian terminology for the vowels, viz. *miftah pumma* (מִיפָּתָח פֻּמָּא) ‘opening of the mouth’, which corresponds to the Tiberian term *pataḥ*, and *miqpaš pumma* (מִקְפָּצָח פֻּמָּא) ‘contraction (i.e., rounding) of the mouth’, which corresponds to the Tiberian term *qameṣ*. The roundedness of Babylonian *qameṣ* and its proximity in the vowel space to *holem* is reflected also by the representation of the vowel with *wāw* in medieval Arabic transcriptions written by Muslims in the eastern region of the Islamic world where Babylonian Hebrew pronunciation was used, e.g. al-Bīrūnī, *Chronology of Nations* (Khan 2013d): حُسُو (‘אַב’) اوֹב (Av), ‘the daily offering’) هَتَمِيد (هַתְמִיד) ‘sun’ (בְּحִילָה) بَشْلُو (Virgo’). In Hebrew words in incantation bowls from Babylonian datable to the pre-Islamic period of the first millennium C.E. there are some occurrences of *vav* that corresponds to *qameṣ*, e.g. בָּרוּךְ (Tiberian בָּרוּךְ) קָדוֹשׁ (בָּרוּךְ).

‘holy’ (Tiberian קָדוֹשׁ) (Juusola 1999, 54–68; Mishor 2007, 219; Molin 2020).

The roundedness of *qames* and its proximity in the vowel space to *holem* is reflected by numerous occurrences of *vav* in biblical texts from Qumran where the Tiberian tradition has *qames*. Several of these are in the environment of labial consonants, which could have conditioned the rounding of the vowel, e.g.¹³

חַנוּם (11Q5 13.13 | L [BHS]: חַנּוּם Psa. 119.161 ‘without cause’)

וְאֶבְרִים (4Q27 f6–10.12 | L [BHS]: וְאֶבְרִים Num. 16.1 ‘and Abiram’)

מִזְםָרִים (4Q57 f9ii + 11 + 12i + 52.40 | L [BHS]: מִזְמָרִים Isa. 24.14 ‘from the sea’)

In many cases, however, it is likely that the *vav* reflects a different morphological form or exegesis from that of the Tiberian tradition (Kutscher 1979, 247, 473–74), e.g.

כְּבָשָׂים (1QIsa^a 5.3 | L [BHS]: כְּבָשָׂים Isa. 5.17 ‘sheep’)

בָּנִיךְ (1QIsa^a 41.16 | L [BHS]: בָּנִיךְ Isa. 49.17 ‘your [fs] children’)

קְדֻמָּתָה (1QIsa^a 18.11 | L [BHS]: קְדֻמָּתָה Isa. 23.7 ‘its former time’)

חוֹשֵׁךְ (4Q59 f4–10.2 | L [BHS]: חֹשֵׁךְ Isa. 8.3 ‘Hash’)

כְּצֹר (1QIsa^a 5.17 | L [BHS]: כְּצֹר Isa. 5.28 ‘like flint’)

¹³ Data supplied by Aaron Hornkohl.

חוֹזָה (1QIsa^a 11.12 | L [BHS]: חֹזָה Isa. 13.1 ‘[Isaiah] saw’)

חוֹרָו (1QIsa^a 19.3 | L [BHS]: חֹרָו Isa. 24.6 ‘[and inhabitants of the land] are scorched’)

שׁוֹכֵן (1QIsa^a 27.29 | L [BHS]: שֹׁכֵן Isa. 33.24 ‘inhabitant’)

לְהַכִּין (1QIsa^a 33.19 | L [BHS]: לְהַכִּין Isa. 40.20 ‘to prepare’)

In the ancient Greek transcriptions of Hebrew, long *qames* is generally represented by *α*. There are a few sporadic cases where *ω* or *ο* correspond to Tiberian long *qames*. Most of these, however, are likely to reflect different morphological patterns or have some other explanation rather than reflecting a back rounded quality, e.g.¹⁴

Septuagint (third century B.C.E.)

'Ιωσάν (Göttingen Septuagint | L [BHS]: Ιωσάν Gen. 10.2
‘Javan’)

'Ιωβέλ (Göttingen Septuagint | L [BHS]: Ιωβέλ Gen. 4.20
‘Jabal’)

Γαυλῶν (Göttingen Septuagint | L [BHS]: Γαυλῶν Deut. 4.43
‘Golan’)

The exceptional case *Iωσάν* may be explained as an imitation of the Greek word with a similar meaning, Ἰων. The examples *Iωβέλ* and *Γαυλῶν* probably reflect different patterns (Knobloch 1995, 181, 314, 394-395).

¹⁴ Data supplied by Ben Kantor.

Hexapla of Origen (c. 185–254 C.E.)

ουεσοκημ (Ambrosiana Palimpsest | L [BHS] מְקַשֵּׁאָן Psa.

18.43 ‘and I crush them’)

εμωσημ (Ambrosiana Palimpsest | L [BHS]: מְקַתְּמָאָן Psa.

18.39 ‘I strike them’)

σφωθαι (Ambrosiana Palimpsest | L [BHS]: יְתַפֵּשׁ Psa. 89.35

‘my lips’)

ολδ (Ambrosiana Palimpsest | L [BHS]: דָלֵד Psa. 49.2 ‘(the)

world’)

The first two forms most likely reflect an /o/ theme vowel (rather than an /a/ theme vowel) in these verbs. The final two forms are likely to reflect variant morphological patterns.¹⁵

In the writings of Jerome (346-420 C.E.), there are a few cases where the vowel *o* occurs corresponding to Tiberian long *qameṣ*, e.g.

zochor (Jerome, *Commentary on Isaiah*, ed. Gryson,

VIII.23.56 | L [BHS]: זָכָר Isa. 26.14 ‘male’)

chauonim (Jerome, *Commentary on Jeremiah*, ed. Reiter,

100.21–22 | L [BHS]: כְּנוּנִים Jer. 7.18 ‘cakes’)

gob (Jerome, *Commentary on Ezekiel*, ed. Glorie, V.16.85 |

L [BHS]: בָּבֶן Ezek. 16.24 ‘pit’)

bosor (Jerome, *Commentary on Isaiah*, ed. Gryson, X.14.82–

84 | L [BHS]: בָּשָׂר? Isa. 34.6 ‘flesh’)

¹⁵ Yuditsky compares σφωθαι to forms like שְׁפֹות בְּשָׁפָאָותִיכָה and שְׁפֹות in the Dead Sea Scrolls (Yuditsky 2017).

In most cases, however, Jerome represents the vowel corresponding to Tiberian long *qames* by *a*, e.g.

enach (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Amos, III.7, p. 318, line 178 | L [BHS]: אֶנְחָה Amos 7.7 ‘plumbline’)

hissa (Jerome, *Hebraicae Quaestiones in Libro Geneseos*, ed. de Lagarde et al., 45.1 | L [BHS]: הִשְׁאָה Gen. 2.23 ‘woman’)

ethan (Jerome, *Commentary on Jeremiah*, ed. Reiter, 72.14 | L [BHS]: אֵתָן Jer. 5.15 ‘enduring’)

aiala (Jerome, *Hebraicae Quaestiones in Libro Geneseos*, ed. de Lagarde et al., 70.20 | L [BHS]: אַיְלָה Gen. 49.21 ‘doe’)

emsa (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Zechariah, III.12, p. 863, line 132 | L [BHS]: אַמְצָה Zech. 12.5 ‘strength’)

There are also some cases where the vowel corresponding to long *qames* is *e*, e.g.

besor (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Zechariah, III.11, p. 849, line 25 | L [BHS]: הַבְּצֹר [lege הבְּצִיר] Zech. 11.2 ‘thick (ms)’)

ciceion (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Jonah, IV, p. 414, line 126 | L [BHS]: קִיכְעָן Jonah 4.6 ‘gourd/plant’)

The cases of *o* corresponding to long *qames* are, therefore, marginal and it is likely that they either reflect morphological patterns that are different from the Tiberian tradition or are conditioned by the consonantal environment (Harviainen 1977,

104–6). This applies, for example, to *zochor* and *bosor*, in which the *o* may have been conditioned by the *r*. In Palestinian Aramaic dialects and Rabbinic Hebrew *resh* often brings about such a vowel shift.¹⁶

The fact that long *qameṣ* had a back rounded quality in both the Tiberian and Babylonian traditions of pronunciation could, nevertheless, be proposed as an argument for this to be a shared feature that the two traditions have retained from a proto-Masoretic tradition of reading in Second Temple Palestine.

The open-mid back rounded quality [ɔ] of *qameṣ*, distinct from the open quality of *pataḥ*, has been preserved in the modern traditions of pronunciation of most Yemenite communities, which have their roots in the Babylonian tradition, e.g.

מִדְבָּר֙: (Morag 1963, 100 | L [BHS]: מִדְבָּר Isa. 16.1 ‘in the desert’)

I.2.1.5. *Segol* and *Sere*

In the early Tiberian Masoretic sources the terms *pataḥ* and *qameṣ* were used not only for the vowels represented by the signs *pataḥ* and *qameṣ* in the Tiberian vocalization, but also for the vowels *segol* and *sere* respectively. This early terminology appears to have developed before the creation of the vowel signs and indicated broad differences in lip-position of the vowels, as a guide to instruct readers how to distinguish between the various

¹⁶ See §I.1.20 and Ben-Hayyim (1946, 194–96), Kutscher (1979, 496–97) and Mishor (1998).

vowel qualities.¹⁷ The vowels *pataḥ* and *segol* were pronounced with spread, open lips, whereas there was some degree of closure of the lips in the pronunciation of *qameṣ* and *ṣere*. In a later version of this terminology, *segol* was referred to as *pataḥ qaṭan* ‘small *pataḥ*’ and *ṣere* as *qameṣ qaṭan* ‘small *qameṣ*’ with Hebrew adjectives qualifying the originally Aramaic term.¹⁸

The term *segol* comes from Aramaic סְגֹל ‘cluster of grapes’, referring to the graphic appearance of the vowel sign rather than its phonetic production. Its vocalization with *shewa* under the *samekh* is attested in some early Masoretic treatises.¹⁹ In *Hidāyat al-Qāri*²⁰ it has the form סְגֹלָה with a feminine ending.

The term *ṣere* is from the Aramaic verb שַׁרֵּא ‘to split’. Since these terms are Aramaic, they are likely to have been created in the early Masoretic period and they indeed appear in early sources, such as the grammar book of Saadya.²⁰ It is not clear

¹⁷ Bacher (1974, 15), Steiner (2005b, 374, 377–78), Posegay (2020).

¹⁸ Baer and Strack (1879, §10), Dotan (2007, 634). The attribute *qaṭan* ‘small’ reflects the concept that the [ɛ] and [e] qualities were in some way more attenuated and more closed than the [a] and [ɔ] qualities respectively. This theory of vowels can be traced back to Syriac grammatical sources where the Syriac term *qaṭṭin* ‘narrow’ is used to describe the higher front vowels (Posegay 2020). An Arabic version of this terminology is found in the Masoretic treatise *Kitāb al-Musawwitat* (ed. Allony 1963, 140–42): *al-qamṣa al-kabīra* ‘big *qameṣ*’ (= *qameṣ*), *al-qamṣa al-ṣaghīra* ‘small *qameṣ*’ (= *ṣere*), *al-patha al-kabīra* ‘big *pataḥ*’ (= *pataḥ*), *al-patha al-ṣaghīra* ‘small *pataḥ*’ (= *segol*).

¹⁹ E.g. Allony and Yeivin eds. (1985, 96).

²⁰ Dotan (1997, 113; 2007, 634).

what the original form of the name *sere* was. The author of *Hidāyat al-Qāri'* states that it means ‘splitting’ (*šāqq*) (through the lips),²¹ suggesting that he read it as a participle צָרֵי. In some manuscripts of *Hidāyat al-Qāri'*, however, it is vocalized צָרֵי.²² It is sometimes spelt, moreover, צִירֵי both in *Hidāyat al-Qāri'* and in Saadya’s work, with *mater lections yod* after the *ṣade*, and this is vocalized צִירֵי in some places.²³ In a Masoretic treatise published by Allony and Yeivin (1985, 96) it has the form צְרִיאָה. It is likely that the term is related to the Jewish Babylonian Aramaic word צִירִיא ‘split, fissure’.²⁴ The name refers to the contraction of the lips to the extent that there is only a small aperture between them. In later sources the practice developed of vocalizing the first syllable with the vowels that the terms designated, i.e. סֶגֶל, צָרֵי and eventually also changing the quality of the second syllable in symbolic representation of the pronunciation of the vowel, resulting in forms such as סֶגֶל.²⁵

In some Masoretic treatises and early grammatical texts, *segol* and *sere* are referred to by the phrases ‘three dots’ (שלוש (נקודות, *thalāth nuqat*) and ‘two dots’ (שתי נקודות, *nuqtatāni*)

²¹ Short version, edition in vol. 2 of this book, §II.S.6.0.

²² E.g. *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.2.17.

²³ E.g. *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.1.7.8.; short version, edition in vol. 2 of this book, §II.S.6.0.

²⁴ Eldar (1994, 124).

²⁵ Steiner (2009, 496). For other vocalizations of the vowels see Dotan (2007, 634).

respectively.²⁶ This is probably a relic from a period in which only the names *pataḥ* and *qameṣ* were in existence.

Hidāyat al-Qāri' describes the articulation of *segol* as being on ‘the lower surface of the mouth,’²⁷ as is the case with *pataḥ*, but with ‘contraction of the sides of the mouth’.²⁸ Saadya states that the *segol* is articulated in the same position as *pataḥ* when the speaker ‘fills the lower sides of the mouth with it.’²⁹ This can be interpreted as referring to a smaller degree of opening of the mouth in the pronunciation of the vowel and a consequential protuberance of the cheeks. The smaller aperture is reflected also in the term ‘small *pataḥ*’ (פתח קטן) in some Masoretic sources.³⁰ The result is an open-mid unrounded [ɛ].

In the Karaite transcriptions, long *segol* is represented by *mater lectionis* *'alif*, e.g.

²⁶ Cf. Dotan (2007, 634), e.g. Baer and Strack (1879, 34–36), the treatise on the *shewa* published by Levy (1936), the Masoretic fragments published by Mann (1969, 2:44), the *Diqduq* of Ibn Nūḥ (ed. Khan 2000, 28).

²⁷ עלי סטח אלף אלטפלאני, long version, edition in vol. 2 of this book, §II.L.2.15.4., Eldar (1994, 132).

²⁸ נטאגאב אלף, short version, edition in vol. 2 of this book, §II.S.7.0, Eldar (1994, 131).

²⁹ ימלא מנהא גאנבי פמה אלטפלאיין (Dotan 1997, 445).

³⁰ This interpretation of פתח קטן is in the Yemenite redaction of *Hidāyat al-Qāri'* known as the Arabic *Mahberet ha-Tijān* (J. Derenbourg 1871, 16; Eldar 1994, 123).

ברזל [baR'ze:el] (BL Or 2549 fol. 145r, 4 | L [BHS]: بَرْزَلْ

Ezek. 4.3 ‘iron’)

The quality [ɛ] was an allophone of Arabic long /ā/, due to a process known by the medieval grammarians as *'imāla* ‘inclining’, i.e. inclining towards the vowel /i/.

Hidāyat al-Qāri' presents the articulation of the vowels *sere* and *hireq* as involving similar gestures. The place of articulation of *sere* is ‘the teeth, without closure, because it breaks through them’³¹ whereas the articulation of *hireq* involves ‘the closure of the teeth tightly.’³² Saadya likewise links the articulation of the two vowels:

If the end of the tongue approaches the teeth but does not cover them, *sere* is produced, but if it covers them, *hireq* is produced.³³

The Masoretic term ‘small *qames*’ (קְמַץ קָמֵשׁ) for *sere* would refer to the lesser degree of closure of the lips than in the articulation of *qames*.

³¹ מחל אלצרי והוא אלASNAN בלא אטבאק לאנה ישק בינהא שק א, long version, edition in vol. 2 of this book, §II.L.2.15.5.

³² אטבאק אלASNAN בкова, long version, edition in vol. 2 of this book, §II.L.2.15.6.; Eldar (1994, 132).

³³ קרבת טرف אלASNAN אליו אנסנאנה ולם יטבקהא (Dotan 1997, 445–47). A similar description of *hireq* is given by Dunash ibn Tamīm in his commentary on *Sefer Yešira*: ‘יחתכוו סוף הלשון בעזר מלהטות מן השניים’ ‘They articulate it with the tip of the tongue with the help of (= in conjunction with) the incisors’ (Grossberg 1902, 20–21; Eldar 1994, 133).

I.2.1.6. *Hireq*

The original vocalization of the name *hireq* is uncertain. The name is spelt חֲרֵק in the manuscript of Saadya's grammar book. The vocalization as a segolate form חֲרֵק is found in some manuscripts of *Hidāyat al-Qāri'* and medieval sources,³⁴ or חֲרֵק.³⁵ In the Masoretic treatise published by Allony and Yeivin (1985, 92) it has the Aramaic form חֲרָק. The form חֲרֵק reflects the later development of vocalizing the first syllable with the vowel the name designates. In Jewish Palestinian Aramaic, the verbal root *hrq* in the *pe'al* and *pa'el* has the meaning of 'to gnash (one's teeth)', which is likely to refer to the tight closure of the teeth in the articulation of the vowel referred to in the *Hidāya*.³⁶ The vowel is also referred to in some early sources as 'one dot' (נְקֻודָה, *nuqta wāhida*).³⁷ Abraham ibn Ezra (1089–c. 1167) used the Hebrew term שְׁבָר 'breaking' to refer to this vowel (Lambert 1889, 124–25).

In the Karaite transcriptions, both long *sere* and *hireq* are normally represented by Arabic *mater lectionis* *yā'*, e.g.

³⁴ E.g. *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.1.7.8. For other sources see Ben Yehuda (1980, vol. 4, 1783), Dotan (2007, 634).

³⁵ E.g. *Hidāyat al-Qāri'*, short version, edition in vol. 2 of this book, §II.S.6.0, MS S18, fol. 7r. MS S14, fol. 3r.

³⁶ Haupt (1901, 15) proposes that the name is related etymologically to Arabic *kharg* 'rent, fissure' (cf. Rabbinic Hebrew חָרֵק 'to cut a gap') referring to the narrow opening of the lips.

³⁷ Dotan (2007, 634), Khan (2000, 28).

هِجَامِيلْ [higgɔ:'me:el] (BL Or 2539 MS A, fol. 63r, 3 | L

[BHS]: הנְמַלֵּה Gen. 21.8 ‘to be weaned’)

وَهُورِيدُو [voho:'ri:ðu:] (BL Or 2539 MS A, fol. 105r, 7 | L

[BHS]: וְהָרִידֹו Deut. 21.4 ‘and they will bring down’)

The choice of *mater lectionis* *yā'* to represent the quality [e:] of *sere* was no doubt due to its being perceived as approximating more closely to the prototypical quality of Arabic /i/ than to that of Arabic /ā/.

I.2.1.7. *Holem, Shureq and Qibbus*

According to *Hidāyat al-Qāri'*, the meaning of name *holem* חָלֵם is ‘fullness’³⁸ since the vowel ‘fills the mouth’.³⁹ In the Masoretic treatise published by Allony and Yeivin (1985, 92) it has the Aramaic form חַלְמָא. An alternative name for the vowel in some Masoretic sources is פָּוָם ‘filling the mouth’. This is presented in opposition to קְבֻצָּן פָּוָם ‘contraction of the mouth’ (also called קְמִץ פָּוָם) which refers in these sources to the /u/ vowel of *shureq* and *qibbus*.⁴⁰ This terminology relates to the smaller rounding of the lips in the production of the *shureq* quality. A few medieval

³⁸ מלוֹ, short version, edition in vol. 2 of this book, §II.S.6.0, Eldar (1994, 120). Cf. the Hebrew root חָלֵם ‘to be healthy (i.e. whole in health)’.

³⁹ לאנהא תמלא אלפם, ibid.

⁴⁰ Bacher (1974, 16), Dotan (2007, 634), Eldar (1994, 121, 125).

sources vocalize the name *holem* as a segolate מִלּוֹם or מַלְוֵם.⁴¹ Some early sources refer to *holem* by the description the ‘upper dot’ (נקודה עליונה, *al-nuqta al-fawqāniyya*) or similar phrases.⁴²

Hidāyat al-Qāri' states that the place of articulation of the *holem* is the root of the tongue and the ‘place of swallowing’, i.e. the pharynx⁴³ and that the ‘movement of the vowel (i.e. the airflow in its realization) is across the whole area of the mouth’.⁴⁴ According to Saadya’s description, *holem* is the vowel that is articulated furthest back in the mouth and its ‘strength (i.e. dynamic airflow in its realization) moves forward without deviating upwards or downwards’.⁴⁵

The *Hidāya* interprets the name *shureq* as ‘whistling’, because it ‘gathers the lips together’,⁴⁶ i.e. the lips are rounded in the position they have when one whistles. The *Hidāya* uses this as a general term to refer to the vowel quality /u/, including what was later called specifically *qibbus* (i.e. the sign ئ without a vowel

⁴¹ Ben Yehuda (1980, vol. 3, 1466-67). The manuscript of Saadya’s grammar book has חָלָם (Dotan 1997, 447). This vocalization is also found in the Genizah fragment of a Masoretic treatise CUL T-S NS 301.69.

⁴² Dotan (2007, 634), Khan (2000, 28).

⁴³ מחל אלחלם עקר הלשון ובית הבלתיה, long version, edition in vol. 2 of this book, §II.L.2.15.1.; (Eldar 1994, 129).

⁴⁴ ומסירה עלי סטח אלף כליה, long version, edition in vol. 2 of this book, §II.L.2.15.1.; Eldar (1994, 129).

⁴⁵ וקוטה סאלכה אמאמה גיר חאייה אלי פוק ולא אלי אספל (Dotan 1997, 445).

⁴⁶ תגמיע אלשפתני, long version, edition in vol. 2 of this book, §II.L.2.14.; Eldar (1994, 125).

letter).⁴⁷ It occasionally refers to the sign שׁ, however, by the term *al-zujj* (literally: ‘the arrow-head’).⁴⁸ The term *qibbus* was introduced by Joseph Qimhi, who categorized them as two separate vowels, the former long and the latter short.⁴⁹

In some medieval sources, including manuscripts of the *Hidāya*, the name *shureq* is vocalized as a segolate שָׁרָק.⁵⁰ In the Masoretic treatise published by Allony and Yeivin (1985, 92) it has the Aramaic form שְׁרָקָא. According to the *Hidāya*, the place of its articulation was ‘the lips (when) gathered together like (for) whistling’.⁵¹ Likewise, Saadya states that it is pronounced ‘between the teeth and the lips’.⁵²

In the Karaite transcriptions, long *holem* and long *shureq/qibbus* are normally represented by Arabic *mater lectionis* *wāw*, e.g.

⁴⁷ In some manuscripts with Non-standard Tiberian vocalization the sign is written reversed, with the three dots sloping up from left-to-right; see Outhwaite (2020).

⁴⁸ E.g. long version, edition in vol. 2 of this book, §II.L.2.12.1.6. This term is also used by the author of the *Treatise on the Shewa* (ed. Levy 1936, ט).

⁴⁹ Joseph Qimhi, *Sefer Zikkaron* (ed. Bacher 1888, 17), Bacher (1974, 17).

⁵⁰ Dotan (2007, 634).

⁵¹ אלשפתין מצומחתין באלצפיר, long version, edition in vol. 2 of this book, §II.L.2.15.7.; Eldar (1994, 133).

⁵² פִי מֵא בֵין אַלְאַסְנָאָן וְאַלְשְׁפָתִיָּן (Dotan 1997, 447).

هَجَادُولْ [haggo:’ðo:ol] (BL Or 2544 fol. 74v, 2 | L [BHS]:

הַגָּדוֹלְ Exod. 3.3 ‘the great’)

تَحِيُونَ [tih’ju:un] (BL Or 2539 MS A, fol. 93v, 5 | L [BHS]:

תִּחְיָה Deut. 8.1 ‘you (mpl) will live’)

Sporadically *mater lectionis* ’alif represents *holem* in the transcriptions, e.g.

بَاخَامْ [baθo:’χɔ:am] (Genizah MS 12, Khan 1990a, 151 | L

[BHS]: בָּחָם Num. 19.10 ‘in their midst’)

Such a transcription could be an attempt to represent the lower quality of *holem* compared to that of *shureq/qibbus* rather than a fronted quality of *holem*. This is demonstrated by a transcription of Hebrew liturgical poetry in the Genizah manuscript T-S Ar.37.89,⁵³ which represents *holem* by ’alif, e.g.: نَفَشَا (نَفَشَوْزْ) لَعَلَمْ (لَعَلْ). In this text, the glide between *holem* and a following furtive *patah* is transcribed by *wāw*, demonstrating that the *holem* was pronounced as a back [o:]: وَسَابَوْعْ (وَسَابَوْعْ).

I.2.1.8. Medieval Classifications of Vowels

In some sources, the seven Tiberian vowels are classified into the three groups (i) *patah*, *segol*, *qameš*, (ii) *sere*, *hireq* and (iii) *shureq/qibbus*, *holem* by associating them with three prototype vowels. Saadya, for example, associates each of these groups with the Arabic case vowels *a* (*naṣb* ‘holding steady’), *i* (*khafḍ*

⁵³ The text was published by Razhaby (1983).

'lowering') and *u* (*raf^c* 'raising') respectively. He classifies them further within these categories according to the notion of degree of height of the airflow in their production,⁵⁴ viz.

- al-raf^c al-kabir* 'big *raf^c*' = *holem*
- al-raf^c al-'asghar* 'smaller raising' = *shureq*
- al-naṣb al-'akbar* 'greater *naṣb*' = *qameṣ*
- al-naṣb al-'awsat* 'intermediate *naṣb*' = *pataḥ*
- al-naṣb al-'asghar* 'smaller *naṣb*' = *segol*
- al-khafḍ al-'asghar* 'smaller *khafḍ*' = *sere*
- al-khafḍ al-'akbar* 'greater *khafḍ*' = *hireq*⁵⁵

Hidāyat al-Qāri' makes a similar classification, using both the names of Arabic case vowels (*naṣb*, *khafḍ*, *raf^c*) and also the generic names of Arabic vowels (*fathā*, *kasra*, *damma*). The Hebrew vowels *pataḥ*, *segol* and *qameṣ*, for example, are identified as variant types of *fathā*, which are termed 'big *fathā*', 'medium *fathā*' and 'small *fathā*' respectively. This does not correspond to Saadya's classification of degrees of height but rather relates to varying degrees of lip-spreading. The vowel *pataḥ* was pronounced with the maximal degree of lip-spreading and *qameṣ*

⁵⁴ Eldar (1983), Dotan (1997, 113–14).

⁵⁵ Dotan notes that the terms *al-khafḍ al-'asghar* and *al-khafḍ al-'akbar* appear to be referring to a reference point in the middle of the mouth, from which *hireq* would constitute a greater lowering than *sere*. The other terms have a reference point at the top of the mouth.

with the lowest degree, with *segol* exhibiting an intermediate lip position.⁵⁶

The basic Arabic vowel qualities *a*, *i* and *u* are also associated with the Arabic vowel letters *'alif*, *yā'* and *wāw*. Any other qualities of Arabic vowels were variations (*furu'*) of these basic qualities, e.g. [ɛ] was termed *'alif mumāla* ‘inclining *'alif*’ (i.e. inclining towards *i*) and [ɑ] or [ɔ] *'alif al-tafkhīm* ‘*alif* of thickness’.⁵⁷ The three-way classification of Tiberian vowel qualities also corresponds to the three Arabic *matres lectionis* *'alif*, *yā'* and *wāw* that are the normal transcription of the vowels of these three categories respectively in the Karaite transcriptions, viz. *'alif* = *pataḥ*, *qames*, *segol*, *yā'* = *sere*, *hireq* and *wāw* = *shureq/qibbus*, *holem*.

Hidāyat al-Qāri' correlates these groups of vowels with the Hebrew vowel letters (i) *'alef/he*, (ii) *yod* and (iii) *vav* when the vowels were pronounced long.⁵⁸ This reflects the theory that long vowels were the result of ‘soft letters’ (*hurūf al-līn*), i.e. vowel letters. This theory was borrowed from the Arabic grammatical tradition and developed more systematically by the Hebrew grammarian Ḥayyūj (Spain, early eleventh century). Unlike in Arabic, these vowel letters were sometimes elided in the orthography, especially those of group (i).⁵⁹

⁵⁶ *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.2.3.–§III.L.2.8.

⁵⁷ Cf. Sibawayhi, *al-Kitāb* (ed. H. Derenbourg 1889, 452–53).

⁵⁸ See *Hidāyat al-Qāri'*, short version, edition in vol. 2 of this book, §II.S.4.2.

⁵⁹ Eldar (1994, 102–5).

I.2.2. VOWEL LENGTH

I.2.2.1. General Principles

The length of vowels represented by the basic vowel signs (i.e. vowel signs that are not combined with *shewa*) is to a large extent predictable from syllable structure and the placement of stress. The general principles are as follows:

Vowels represented by basic vowel signs are long when they are either (i) in a stressed syllable or (ii) in an unstressed open syllable.

Vowels represented by basic signs that are in an unstressed closed syllable are short.

Examples: **מלך** ['me:leχ] ‘king’, **נוער** ['na:ʃaʁ] ‘youth’, **חכמתה** [ħɔχ'matħa] ‘wisdom’, **הזהר** [ha:'hu:] ‘that’, **עה** [ya:ʃa'le:] ‘he goes up’, **שחתה** [ʃi:'he:θu:] ‘they have ruined’ (Nah. 2.3), **ברקיהו** [bər:qīħo] ‘Berechiah’ (1 Chron. 2.24).

These principles are clearly reflected by the Karaite transcriptions, which represent long vowels with Arabic *matres lectionis*. They are also referred to in various other medieval sources.⁶⁰ Examples from the Karaite transcriptions are presented below.

⁶⁰ In *Hidāyat al-Qāri'*, for example, it is stated that the pronunciation of the stressed *patah* in words such as שָׁמֵר and זְכַר ‘indicates the existence of *'alef*’ (short version, edition in vol. 2 of this book, §II.S.4.0), i.e. it is pronounced long with a hidden vowel letter. For further references see Hommel (1917, 99f.), Ben-David (1957a, 21–23), Yeivin (1981b, 42); also the Masoretic note to Lev. 1.11 quoted by Wickes (1887, 25): עַל ח'

When a long vowel occurs in a closed syllable, an epenthetic vowel is inserted after the long vowel before the syllable-final consonant, e.g. דָבֵר and שָׁמַר should be represented as [dəbər] and [ʃɔ:ma:ar] respectively. This feature of syllable structure is discussed in detail in §I.2.4.

I.2.2.2. Stressed Syllables

(marked by shading in the roman phonetic transcription)

Qames

שרה [שָׁרָה] (Gen. 21.7 ‘Sarah’) — سارا (BL Or 2539 MS A, fol. 63r, 1)

נִסְתָּח [nis'stə:] (Gen. 22.1 ‘he tempted’) — نسنا (BL Or 2539 MS A, fol. 66r, 7)

הַדְבָּר [haddər] (Gen. 21.11 ‘the word’) — هدّابر (BL Or 2539 MS A, fol. 63r, 8)

אֶבְרָהָם [əbərah'm] (Gen. 21.11 ‘Abraham’) — ابراهام (BL Or 2539 MS A, fol. 63r, 8)

8 instances in Leviticus lengthen the particle לֹא with an accent'. Lengthening of vowels in open unstressed syllables is alluded to by Saadya in his commentary on *Sefer Yešira* (ed. Lambert 1891, 76–77; 1889, 125).

Patah

וַיַּעֲשֵׂנִי [vaʃ'ja:ʃas] (Gen. 21.8 ‘and he made’) — وياعسن (BL Or

2539 MS A, fol. 63r, 3)

הַנֶּעֱרָךְ [han'na:ʃar] (Gen. 21.17 ‘the boy’) — هناعر (BL Or

2539 MS A, fol. 64r, 5)

הַמְּיַם [ham'ma:jim] (Gen. 21.15 ‘the water’) — همایم (BL Or

2539 MS A, fol. 64r, 1)

וַיַּגְמֹלֵל [vajjiggo:'ma:l] (Gen. 21.8 ‘and he was weaned’) —

ويجامال (BL Or 2539 MS A, fol. 63r, 2)

בְּסֻבָּח [bassa'va:ax] (Gen. 22.13 ‘in the thicket’) — بسباخ (BL Or

(BL Or 2539 MS A, fol. 68r, 3)

Segol

הַגְּבָרָה [hag'gevər] (Psa. 52.9 ‘the man’) — هجابر (BL Or

2551 fol. 9v, 3)

מִפְנִיכֶם [mipp'hɔ:'neχɔ:] (Isa. 26.17 ‘before you’) — مفناخا (BL Or

2548 fol. 186r, 4)

מִשְׁתַּחַת [mis'tʰat] (Gen. 21.8 ‘feast’) — منستا (BL Or 2539 MS

A, fol. 63r, 3)

Barzel [baʁ'ze:el] (Ezek. 4.3 ‘iron’) — ברֶזֶל (BL Or 2549 fol.

145r, 4)

Abatikem [?avo:θe:χε:em] (Exod. 3.16 ‘your fathers’) —

أبْتِيكَمْ (BL Or 2544 fol. 77v, 8)

Şere

Watinib [vat'tʰe:ʃev] (Gen. 21.16 ‘and she sat’) — وَتَنِيب (BL

Or 2539 MS A, fol. 64r, 4)

Higamil [higo:'me:el] (Gen. 21.8 ‘to be weaned’) — هِجَامِيل

(BL Or 2539 MS A, fol. 63r, 3)

Jariyis [go:'re:ej] (Gen. 21.10 ‘cast out!’) — جَارِيَسْ (BL Or

2539 MS A, fol. 63r, 6)

Hireq

Vohoro [voho:'ri:ðu:] (Deut. 21.4 ‘and they will bring down’)

— وَهُرُورِدُو (BL Or 2539 MS A, fol. 105r, 7)

Wiybin [vaʃ'ji:ven] (Gen. 22.9 ‘and he built’) — وَيَبِينْ (BL Or

2539 MS A, fol. 67r, 9)

Am ['ʔi:im] (Gen. 15.4 ‘if’) — أَمْ (BL Or 2539 MS A, fol. 58r,

4)

mem beth מִן [‘mix:in] (Exod. 2.7 ‘from’) — مِنْ (BL Or 2540, fol. 6r, 4)

Holem

mem beth صَبَأُو [s̥ab̥ā:’] (Gen. 21.22 ‘his host’) — صَبَأُو (BL Or 2539 MS A, fol. 64v, 9)

mem beth هَجَدُولُ [haggo:’d̥o:ol] (Exod. 3.3 ‘the great’) — هَجَدُولُ (BL Or 2544 fol. 74v, 2)

mem beth وَمَعْدَنٌ [wumiṣd̥o:’no:oθ] (Gen. 24.53 ‘precious things’) — وَمَعْدَنٌ (BL Or 2539 MS A, fol. 76v, 4)

Shureq/qibbus

mem beth وَيَقْمَنُ [vajjɔ:’qu:mu:] (Gen. 22.19 ‘and they rose up’) — وَيَقْمَنُ (BL Or 2539 MS A, fol. 68v, 6)

mem beth جَبُولٌ [ga’vu:ul] (Psa. 78.54 ‘border of’) — جَبُولٌ (BL Or 2551 fol. 32v, 13)

mem beth نَاؤُم [nu’?u:um] (Jer. 2.22 ‘utterance of’) — نَاؤُم (BL Or 2549 fol. 3v, 12)

mem beth يَرِحُونَ [jaṛi:’ħu:un] (Deut. 4.28 ‘and they (mp) will smell’) — يَرِحُونَ (BL Or 2539 MS A, fol. 87v, 4)

I.2.2.3. Open Unstressed Syllables

(marked by shading in the roman phonetic transcription)

Qames

هَجَادُول هַגָּדֹל [hagg̚:ðo:ol] (Exod. 3.3 ‘the great’) — (BL Or 2544 fol. 74v, 2)

يَامِيم יָמִים [jɔ:mi:im] (Jer. 31.38 ‘days’) — (BL Or 2549 fol. 93v, 8)

بَعْيَنَاخَا בְּעֵינָנָךְ [beñe:ñe:χɔ:] (Gen. 21.12 ‘in your (ms) eyes’) — (BL Or 2539 MS A, fol. 63v, 2)

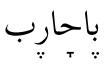
Patah

هَاهِي הָהִי [ha:hi:] (Gen. 21.22 ‘that’) — (BL Or 2539 MS A, fol. 64v, 8)

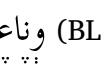
كَحَاسِدَ כְּחָסִידָה [kʰa:ħesidə] (Gen. 21.23 ‘like the kindness’) — (BL Or 2539 MS A, fol. 65r, 3)

لَاحْفَذُس לְחַבְזָס [la:ħo:ħeṣ] (Neh. 9.1 ‘of the month’) — (BL Or 2556, fol. 52v, 8)

Segol

  [be:^hכָּרֶב] (Num. 14.43 ‘by the sword’) —  باحرب

(Genizah MS 1, Khan 1990a, 26)

 [va:^hכָּזֵב] (Isa. 27.10 ‘forsaken’) —  وناعزاب

Or 2548 fol. 187r, 12)

 [ne:^hנָשַׁתָּה] (Num. 15.24 ‘it [f] was done’) —  ناعستا

(Genizah MS 1, Khan 1990a, 27)

Sere

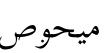
 [lo:^hפְּנָדָה] (Num. 14.27 ‘for the congregation’) —

 لا عيذا (Genizah MS 1, Khan 1990a, 23)

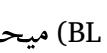
 [?e:^hלְאֵלֹהִים] (Exod. 3.11 ‘I will go’) —  ايليه

Or 2540,
fol. 9r, 1)

Hireq

 [mi:^hחָוֹס] (Deut. 23.11 ‘from outside’) —  ميحوص

(BL Or 2539 MS A, fol. 113v, 5)

 [mi:^hחָוֹטֶט] (Gen. 14.23 ‘from a thread’) —  ميحوط

Or 2539 MS A, fol. 57r, 8)

Holem

الْوَهِيمُ [ʔelo:hi:im] (Gen. 21.22 ‘God’) — אלְהִים [ʔel:hi:im] (BL Or 2539)

MS A, fol. 65r, 1)

هاريشونيث [ha:ri:ʃu:nit] (Jer. 25.1 ‘the first’) — הָרִאשׁוֹנִית [ha:ri:ʃo:nit]

(BL Or 2543 MS A, fol. 5v, 2)

Shureq/qibbus

رَاوِين [ra:u?u:v'e:en] (Exod. 1.2 ‘Reuben’) — רָאוּבֵן [ra:u?u:v'en] (BL Or

2540, fol. 3v, 2)

حَمْشَيْمٌ [ħamu:ʃi:im] (Josh. 4.12 ‘those who are armed’) —

حَمْوَشِيمٌ (BL Or 2547 fol. 6v, 12)

بُطَالٌ [ju:t'a:al] (Job. 41.1 ‘he will be hurled down’) — بُطَّالٌ

(BL Or 2552 fol. 85v, 4)

دُوذَابٌ [du:ða:b'ə:e:] (Jer. 24.1 ‘baskets of’) — دُوذَابٌ

2543 MS A, fol. 3r, 8)

وَعَبَدُوا [va:yja:ʃa'vi:ðu:] (Exod. 1.13 ‘and they made to serve’)

وَيَاعِينُوا (BL Or 2540, fol. 4v, 2)

I.2.2.4. Closed Unstressed Syllables

(marked by shading in the roman phonetic transcription)

Qames⁶¹

 قدشي [qədši:] (Num. 18.32 ‘the holy gifts of’) — قدشي (BL)

Or 2539 MS B, fol. 126v, 12)

 كل [-] [kʰol] (Isa. 38.17 ‘all’) — كل (BL Or 2548 fol. 32r, 12)

 وتابت [vat'ṭāb̚at] (Num. 20.1 ‘she died’) — وتابت (BL Or)

2539 MS B, fol. 128r, 10)

Patah

 وإنحמתי [vani:ham'thi:] (Jer. 26.3 ‘and I will repent’) —

ونيتحمتي (BL Or 2543 MS A, fol. 8r, 5)

 هزا [haz'ze:] (Jer. 23.32 ‘this’) — هزا (BL Or 2543 MS A,

fol. 2r, 7)

Segol

 ولنخدي [wulneχ'di:] (Gen. 21.23 ‘to my posterity’) — ولنخدي

(BL Or 2539 MS A, fol. 65r, 3)

⁶¹ The distinction between long and short *qames* is expressed by the terms *qames gadol* and *qames ḥat̚ef* in the works of the early Hebrew grammarians of Spain (Lambert 1889, 124).

כָּתַף [k^ha:^lhe:sεð] (Gen. 21.23 ‘like the kindness’) —
كَحَاسِدَ (BL Or 2539 MS A, fol. 65r, 3)

Hireq

מִשְׁתֵּה [miʃ't^he:] (Gen. 21.8 ‘feast’) — **مُنْسَتَا** (BL Or 2539 MS A, fol. 63r, 3)

אֲיַל ['ʔa:jil] (Gen. 22.13 ‘ram’) — **أَيْلٌ** (BL Or 2539 MS A, fol. 68r, 2)

Shureq/qibbus

הַשְׁלָחָן [haʃʃul'hɔ:cn] (Exod. 25.30 ‘the table’) — **هَشْلَحَانٌ** (BL Or 2544, fol. 125r, 5)

וַיִּבּוּ [vajjuk'k^hu:] (Exod. 5.14 ‘and they were beaten’) — **وَيَكُوْنُ** (BL Or 2540, fol. 14v, 6)

The vowels *holem* and *sere* are invariably long and have no short variants. This also is essentially dependent on stress and syllable structure, in that they occur only in the aforementioned environments that condition vowel length, e.g. **מְבִיאָה** [me:^lvi:] ‘brings’, **הָרְאֵשׁ** [ja'^lθe:] ‘drink!’, **מְקֹםָה** [maqo:^lmo:] ‘his place’.

I.2.3. VOWEL PHONEMES

In order to establish the synchronic phonological representation of the vowels of the Tiberian reading tradition one must

distinguish between (i) vowels which are invariably long and include length in their underlying phonological representation and (ii) vowels whose length is determined by syllable structure and stress so are of unspecified length at a phonological level (Khan 2013g).⁶²

I.2.3.1. Vowel Phonemes with a Specified Length Feature

The long vowel phonemes with a length feature specified in their underlying representation include: long *qameṣ* /ɔ/, *holem* /ō/, *šere* /ē/, long *shureq* /ū/, long *hireq* /ī/ (typically written with *yod*), e.g.

הָקַשׁ /χāθɔ̄/ [χɔ̄:θɔ̄:] ‘he drank’

הָרְבָּה /rēθō̄/ [rēθɔ̄:] ‘community’

הָיְתָה /bēθō̄/ [bēθɔ̄:] ‘his house’

וְעוּמָה /qūmū/ ['qu:mu:] ‘arise!’

אֲירֵא /jirō̄/ [ji:rɔ̄:] ‘he fears’

⁶² For an alternative analysis of the phonemes of Tiberian Hebrew based on the phonetic realizations I have reconstructed from medieval sources see Suchard (2018). For phonemic analyses based on earlier views of the phonetic realization of the vowels see, for example, Morag (1962) and Schramm (1964, 63).

I.2.3.2. Vowel Phonemes without a Specified Length Feature

The vowel phonemes unspecified as to length include: *patah* /a/, *segol* /ɛ/, *hireq* /i/, *qibbus*/*shureq* /u/. In principle, these are long when they bear stress, e.g.

הִמְעָד /hīmað/ [hī'ma:að] 'he stood'

לִפְנֵם /līfne'em/ [līfne:em] 'to them'

מִן /min/ ['mi:in] 'from'

The length of the vowel, therefore, is a phonetic phenomenon induced by stress and is not a feature of the underlying vowel phoneme.

As shown above, vowels of this category represented by basic vowel signs that occur in unstressed closed syllables are short, whereas those that occur in open unstressed syllables are realized as long.

An open syllable with a long vowel (C[‑]V) can be considered to have the same weight as a closed syllable with a short vowel (CVC). Their codas both contain two weight components, known as morae, and both types of syllable are termed bimoraic. Bimoricity is, in fact, not obligatory in open syllables. There are some cases of short lexical vowels in open unstressed syllables, mainly rounded vowels with the quality of *qameṣ*, indicated in the vocalization by *hatef qameṣ*, e.g. בַּמִּן [b̄'mīn] 'balm', שְׁמִינִי [ʃ̄'mīn:i] 'silence' (§I.2.7.). The lengthening of the vowels of unspecified length in open syllables must, therefore, be conditioned by factors other than the need to conform to a principle of canonical bimoricity.

One subset of vowels of this category that are lengthened in open syllables occur before gutturals that were historically geminated, but have now lost their gemination. In traditional descriptions of Hebrew, this is referred to as ‘virtual doubling’ of the guttural, i.e. the vowel is the type one would expect in a syllable closed by gemination of the following consonant. The phonetically long realization of the vowel can be explained as having arisen due to spreading of the vowel in compensation for the lost gemination. This can be represented as the replication of the phoneme thus:

*/hahhū/ > /haahū/ [ha:'hu:] אָהָהּ ‘that’

*/ʃihhēθū / > /ʃiihēθū/ [ʃi:'he:θu:] שִׁיחְתּוּ ‘they have ruined’ (Nah. 2.3),

This can be regarded as a morphologically motivated replication of the vowel, in order to bring the morphological pattern of a word or prefixed particle (definite article or preposition) into line with the pattern of these forms in other contexts, in which they are typically followed by a geminated consonant, e.g. הַבֵּית /habbajiθ/ ‘the house’, מִפְּה /mipp^hō/ ‘from here’, שִׁיבֵּר /ʃibber/ ‘he shattered’, or have a long vowel phoneme, e.g. הַמִּנְםָם /hōñām/ ‘the people’, מִשְׁמִיר /mēñir/ ‘from the city of’, מִן /mēñēn/ ‘he refused’.

A second subset of vowels of this category that are lengthened in open syllables occur before gutturals with a *hatef* vowel, e.g. יַעֲלֵוּ ‘they go up’, הַעֲלָה ‘he brought up’, צְהֻנָּיִם ‘noon’. Here the lengthening is conditioned by metrical factors. This will be discussed below (§I.2.5.4.).

A third, marginal, subset of vowels of this category that are lengthened in open syllables occur in segolate forms that do not bear the main stress, e.g. בְּרֵכִיָּה [berɛχjɔ:hu:] ‘Berechiah’ (1 Chron. 2.24). This also appears to have a metrical motivation (§I.2.6.).

To the category of vowel phonemes that lack a specified length feature we should add also /e/ and /o/. These are represented by the *sere* and *holem* vowel signs respectively in the stressed syllable of certain forms. Since stressed vowels are always long, on a phonetic level these are not distinguishable from *sere* and *holem* representing phonemes with underlying length. This is necessary to account for apparent discrepancies in the historical development of vowels in several morphological forms, in which *patah* (a vowel with no specified length feature) occurs in parallel with *sere* and *holem* (Sarauw 1939, 56–64; Khan 1994). This applies, for example, to nouns with an originally doubled final consonant. In forms deriving from the **qall* pattern the vowel is *patah*, e.g. מַךְ ['ra:av] ‘much’, and in forms deriving from the **qill* and **quill* pattern, the vowel is *sere* and *holem* respectively, e.g. לֵב ['le:ev] ‘heart’, שֹׁו ['ʃo:oz] ‘strength’. Such words would all have a vowel of unspecified length on the phonological level /rav/, /lev/, /ʃoz/ and the length would have been a consequence of stress. There is, therefore, no discrepancy in their pattern. The same applies to the underlying phonological representation of the *patah*, *sere* and *holem* in verbal forms of the patterns קָטַל, קָטַל, קָטַל, קָטַל; חָלַי, חָלַי, חָלַי, חָלַי and in segolate nouns of the patterns סָפֶר, נָעַר [pausal form], which would have the phonemes /a/, /e/ and /o/ respectively:

- שָׁמַע /ʃōmað/ [ʃɔ: 'ma:að] ‘he stood’
 כָּתַב /kʰōveð/ [kʰɔ: 've:eð] ‘it became heavy’
 קָטָן /qōt̚ on/ [qɔ: 't̚ o:on] ‘it became small’
 יִשְׁכַּב /jiš'kʰav/ [jiš'kʰa:av] ‘he lies down’
 יִתְּהֵן /jittʰen/ [jit'tʰe:en] ‘he gives’
 יִמְשֹׁר /jiš'mo:r/ [jiš'mo:or] ‘he guards’
 נֶעֱרָה /nařr/ ['na:řař]⁶³ ‘youth’
 ספר /sefr/ ['se:fɛr] ‘book’
 קָדָשׁ /qođʃ/ ['qo:đeʃ] ‘holiness’
 חֲלֵי /ħo:li:/ ‘sickness’

In syllables that do not have the main stress, the vowels /e/ and /o/ are generally realized phonetically as [ɛ] or [ɔ] respectively, which overlap in quality with the phonemes /ɛ/ and /ɔ/, e.g.

- וַיָּבֹא /vajjēreð/ [vaj'jɛ:rɛð] ‘and he came down’
 קָדְשׁוֹ /qođʃō/ [qođʃɔ:] ‘his holiness’
 חֲלֵי /ħo:li:/ ‘sickness’
 קָדְשִׁים /qođši'im/ [qođšɔ:im]

A secondary stress may be marked on short [ɔ], and in such cases it is generally lengthened to [ɔ:] rather than [o:], as in קָדְשִׁים [qođšɔ:im] ‘holinesses’ (Exod. 29.37).

⁶³ The second vowel in segolates is epenthetic and does not appear in the underlying phonological form; see §I.2.6.

There are some marginal cases in the Tiberian tradition where short [ɛ] and short [ɔ] are realized as [ɛ:] and [ɔ:], rather than [e:] and [o:], with the main stress of an accent. The accent in such cases is usually a conjunctive, though sporadic cases of disjunctives are attested, e.g. seven cases of בֶן ‘son’ (Gen. 17.17, Lev. 1.5, Lev. 24.10 [disjunctive *yetiv*], Isa. 8.2, Esther 2.5, 1 Chron. 9.21, Neh. 6.18), three cases of תְּ אֵת object marker/‘with’ (Psa. 47.5, Psa. 60.2, Prov. 3.12) and at least two cases of בָּלְ ‘all’ (Psa. 35.10, Prov. 19.7),⁶⁴ e.g.

בֶן יָאֵיר (Esther 2.5 ‘son of Yair’)

אֵת אַרְם נָהָרִים (Psa. 60.2 ‘with Aram-naharaim’)

בָּל אֲחִי־רֹשׁ (Prov. 19.7 ‘all the brothers of a poor man’)

This phenomenon is likely to be due to the fact that, in the Tiberian prosodic chant, words that were originally unstressed in an earlier form of the reading tradition were occasionally assigned an accent. Such prosodic ‘transformations’, according to DeCaen and Dresher (2020), occurred due to the length of a verse and the desire to slow down the chant.

Conversely there are a few sporadic cases of /o/ and /e/ realised with the qualities of [o:] and [e:] in syllables two syllables back from the main stress that may be considered to be the

⁶⁴ These are listed in Masoretic treatises, e.g. *Diqduqe ha-Te'amim* (ed. Dotan 1967, sections 6-8), *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.3.2.5., §II.L.3.2.6. The sources differ regarding the number of cases of בָּל with a main stress. Psa. 87.7, which is one of the three cases cited in *Diqduqe ha-Te'amim*, has a *maqqef* in L [BHS]: בָּל מְעַמֵּנִי (Psa. 87.7 ‘all my springs’).

result of lengthening by a secondary stress (§I.2.8.2.), although this is not always indicated by the accentuation, e.g.

אֹהָלִים [ʔo:hɔ:l'i:im] (Gen. 25.27 ‘tents’); cf. singular **אֹהֶל** /'ohel/ (see §I.2.6. for further details concerning the underlying form)

הַעֲלָה [he:ña'lū:] (Hab. 1.15 ‘he has brought up’) (see §I.2.5.4. for further details concerning the underlying form)

Vowel phonemes without a specified length feature in their underlying form, which have been lengthened through stress or compensatory reduplication (e.g. /haahū/ [ha:'hu:] אֹהָהָה), are vowels that appear to have acquired phonetic length relatively late in the history of the Tiberian tradition. In the Greek transcriptions of the Hexapla of Origen (c. 185–254 C.E.) they are still represented as short where length distinctions could be made in Greek, viz. between the short and long ‘e’ and ‘o’ vowels (Khan 1994). Where Tiberian had lengthened /e/ [e:] and lengthened /o/ [o:], the Hexapla generally has ε and ο respectively, which represented short ‘e’ and ‘o’, as opposed to η and ω, which represented long ‘e’ and ‘o’. Examples:⁶⁵

Verbal forms

ααλλελ (Ambrosiana Palimpsest | L [BHS]: אֹהָלִים Psa. 89.35
‘I will [not] profane’)

ουιεθθεν (Ambrosiana Palimpsest | L [BHS]: אָתָּה Psa. 18.33
‘and he set’)

⁶⁵ Data supplied by Ben Kantor.

οὐβαρεχ (Ambrosiana Palimpsest | L [BHS]: וְבָרֵךְ Psa. 28.9
‘and bless! (ms)’)

*ουκ*σσες* (Ambrosiana Palimpsest | L [BHS]: וְקַצֵּב Psa. 46.10
‘and [he] shatters’)

ιδαββερ (Ambrosiana Palimpsest | L [BHS]: יְדַבֵּר Psa. 49.4
‘[my mouth] will speak’)

ιμαλλετ (Ambrosiana Palimpsest | L [BHS]: טִלְלֵת Psa. 89.49
‘[he] will rescue’)

εχαζεβ (Ambrosiana Palimpsest | L [BHS]: אֶכְזֵב Psa. 89.36
‘I will lie’)

εεζεκ (Ambrosiana Palimpsest | L [BHS]: הַחֲזִיק Psa. 35.2
‘take hold of! (ms)’)

ερδοφ (Ambrosiana Palimpsest | L [BHS]: נְרֹדוֹף Psa. 18.38
‘I chase’)

ιαδομ (Ambrosiana Palimpsest | L [BHS]: מְנַזֵּם Psa. 30.13 ‘[it
will not] be silent’)

ισροφ (Ambrosiana Palimpsest | L [BHS]: נְשֹׁר Psa. 46.10
‘[he] burns’)

ηζχօր (Ambrosiana Palimpsest | L [BHS]: זְכָר Psa. 89.51
‘remember! (ms)’)

*qill and *qull nominal forms

λεβ (Ambrosiana Palimpsest | L [BHS]: בְּלֵב Psa. 32.11
‘heart’)

εμ (Ambrosiana Palimpsest | L [BHS]: פָּנָא Psa. 35.14
 ‘mother’)

βαες (Ambrosiana Palimpsest | L [BHS]: בְּאֵשׁ Psa. 46.10
 ‘with fire’)

οζ (Ambrosiana Palimpsest | L [BHS]: נַעֲזֶה Psa. 30.8
 ‘strength’)

λαχολ (Ambrosiana Palimpsest | L [BHS]: לְכָל Psa. 18.31 ‘for
 all’)

Segolate forms

ιεθερ (Ambrosiana Palimpsest | L [BHS]: רְמִיר Psa. 31.24
 ‘remainder/abundance’)

ρεγε (Ambrosiana Palimpsest | L [BHS]: עָגֵן Psa. 30.6 ‘a
 moment’)

κεσθ (Ambrosiana Palimpsest | L [BHS]: קְשֻׁת Psa. 18.35
 ‘bow of (cstr.)’)

μενεγδ (Ambrosiana Palimpsest | L [BHS]: מְנוֹנָד Psa. 31.23
 ‘from before’)

δερχ (Ambrosiana Palimpsest | L [BHS]: דָּרָךְ Psa. 89.42
 ‘(the) way’)

βεχι (Ambrosiana Palimpsest | L [BHS]: בְּכִי Psa. 30.6
 ‘weeping’)

βοχρ (Ambrosiana Palimpsest | L [BHS]: בְּקָר Psa. 46.6
 ‘morning’)

$\chi\sigma\rho$ (Ambrosiana Palimpsest | L [BHS]: קָרָה Psa. 49.1 ‘Korah’)

Contrast other adjectival and nominal forms, which have η , representing long ‘e’, as the counterpart of Tiberian *sere*, and ω , representing long ‘o’, as the counterpart of Tiberian *holem*, e.g.

$\alpha\gamma\lambda$ (Ambrosiana Palimpsest | L [BHS]: הָאֵל Psa. 18.31 ‘God’)

$\varepsilon\alpha\chi\eta\varsigma$ (Ambrosiana Palimpsest | L [BHS]: שְׁקָעַ Psa. 18.27 ‘crooked’)

$\chi\omega\lambda$ (Ambrosiana Palimpsest | L [BHS]: קֹוֶל Psa. 28.6 ‘voice’)

$\mu\alpha\zeta\mu\omega\rho$ (Ambrosiana Palimpsest | L [BHS]: מִזְמֹר Psa. 31.1 ‘melody/psalm’)

$\phi\epsilon\delta\imath\omega\nu$ (Ambrosiana Palimpsest | L [BHS]: פְּדִיּוֹן Psa. 49.9 ‘the redemption of (cstr.)’)

The counterpart of stressed *sere* and *holem* in most verbal forms that are pausal in the Tiberian tradition are transcribed by the long vowels η and ω respectively in the Hexapla, e.g.

$\theta\eta\lambda\eta\chi$ (Ambrosiana Palimpsest | L [BHS]: תָּלָךְ Psa. 32.8 ‘you go’)

$\iota\eta\sigma\eta\beta$ (Ambrosiana Palimpsest | L [BHS]: יְשַׁבֵּן Psa. 9.8 ‘he sits’)

$\iota\delta\alpha\beta\beta\eta\rho\theta$ (Ambrosiana Palimpsest | L [BHS]: יְדַבֵּר Psa. 35.20 ‘the speak’)

ιαλληλου (Ambrosiana Palimpsest | L [BHS]: יְחַלֵּל Psa. 89.32
 ‘they violate’)

ιεσμωρου (Ambrosiana Palimpsest | L [BHS]: יְשִׁמְרֹו Psa. 89.32 ‘they (do not) keep’)

This evidence supports the assumption that the *sere* and *holem* in such forms are the phonemes /ē/ and /ō/ with a length feature. Segolate nouns and nouns with the historical pattern **qill* and **qull* that are pausal in Tiberian tradition, by contrast, are transcribed in the Hexapla with ε and ο (see the lists above).

There is one possible case in the Hexapla corresponding to forms such as מְקֻנָּה ‘he was comforted’ צְאֹתָה ‘outside’ with ‘virtual doubling’ of the guttural. The case in question is the following:

μερεσθ (Ambrosiana Palimpsest | L [BHS]: מְרַשֶּׁת Psa. 31.5
 ‘from (the) net’)

Here the *resh* has lost its gemination and the transcription represents the preceding vowel as short. This form is interpreted by Kantor (2017, 223) as equivalent to forms with *hireq* in Tiberian such as צְאֹתָה, i.e. the forebear of a hypothetical form תְּמַרְשָׁת. If this is correct, this would be evidence that the vowel before ‘virtual doubling’ that we are proposing was a vowel phoneme without a specified length feature in Tiberian was represented as short in the Hexapla like other vowels of this category.

I.2.4. LONG VOWELS IN CLOSED SYLLABLES

When long vowels with the main stress occur in closed syllables, there is evidence that an epenthetic with the same quality as that

of the long vowel occurred before the final consonant in its phonetic realization, e.g. (syllable boundaries are marked by dots):

קֹול /qōl/ ['qo:.ol] 'voice'

יד /jōd/ ['jɔ:.ɔd] 'hand'

לֶקְוּם /lōqūm/ [lɔ:.ɔum] 'to rise'

הַשִּׁמֵּד /hiʃmīd/ [hiʃ.'mi:.ið] 'he destroyed'

בַּיִת /bēθ/ ['be:.eθ] 'house of'

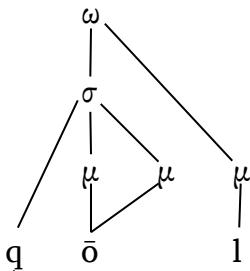
This syllable split on the phonetic level was not represented in the vocalization notation since it did not change the vowel quality. On account of the lack of change in phonetic quality across the syllable boundary the epenthetic syllable could not have been very distinct perceptually.

The most compelling evidence for the insertion of an epenthetic in a closed syllable with a long vowel phoneme is the so-called furtive *patah*, e.g. רוח ['ru:.ah] 'spirit'. This short [a] vowel is to be interpreted as the epenthetic vowel, which has shifted quality through assimilation to the vocal tract configuration of the following laryngeal or pharyngeal. If the whole of the vowel nucleus were a unitary long vowel in the same syllable, one would have expected the assimilation to affect it as a unit.⁶⁶

⁶⁶ The splitting of a long vowel into two syllable nuclei is a phenomenon that is attested in the Samaritan reading tradition, e.g. *rē'os* 'head' (= Tiberian *רָאֹשׁ*), which, according to Ben-Hayyim (2000, 67), developed from **rōoš* with the first nucleus dissimilating.

The occurrence of this epenthesis appears to reflect a constraint against syllables heavier than two morae. An open syllable with a long vowel (C \bar{V}) and a closed syllable with a short vowel (CVC) are bimoraic, i.e. they have two morae in their codas, whereas a closed syllable with a long vowel (C $\bar{V}C$) would have three morae. The constraint causes the C $\bar{V}C$ syllable to be broken into two bimoraic syllables on the phonetic level C \bar{V} .VC.

The underlying syllable structure of a word such as **לִזְבָּח** could be represented thus: /qō.1/, with a stray extrasyllabic consonant. This follows from the assumption that the epenthetic vowel must have been added at the phonetic level and the aforementioned constraint against superheavy syllables must have existed also at the underlying level. Following the analysis by Kiparsky (2003) of Arabic syllable structure, we may say that such unsyllabifiable consonants at the underlying level, or ‘word-level’ according to Kiparsky’s terminology, are licensed by morae adjoined to the higher node of the prosodic word rather than the syllable node. Kiparsky refers to these consonants as ‘semisyllabiles’. In the following tree ω = prosodic word, σ = syllable, and μ = mora:



/qō.1/ ‘voice’

We may postulate that the epenthetic is added at the phonetic level, or ‘post-lexical level’ according to the terminology of lexical semantics used by Kiparsky, to turn the semisyllable into a syllable, i.e. /qō.l/ [qo:.ol], since in Tiberian Hebrew semisyllables were not allowed at the phonetic level. The underlying syllable structure of the other examples given above would, therefore, be /jō.ð/, /lō.qū.m/, /hiʃ.mī.ð/ and /bē.θ/.

It will be argued (§I.2.6.) that in the metrical parsing the epenthetic in the phonetic syllable structure of a word such as ['qo:.ol] belonged together with the preceding long vowel in the same prosodic foot.⁶⁷ This foot would have consisted of a trochaic metrical pattern with a strong syllable followed by a weak epenthetic syllable. This can be represented as follows, where brackets enclose the foot and * = strong beat:

['qo:.ol]

(* .)

In the examples given above of epenthesis the closed syllables have a vowel phoneme with inherent length. There are some words with furtive *patah* in a word-final stressed closed syllable that, according to their etymology, would be expected to have an underlying vowel phoneme without a length specification. This applies to the **qull* noun forms עַר ['rō:aʃ] ‘badness’ (< **ru*‘, root עָרָה) and מַרְבָּן ['mo:rəh] ‘marrow’ (< **muhh*, root מְהֻבָּה). The constraint against syllables heavier than two morae and the splitting

⁶⁷ J. McCarthy (1979, 155) also proposed that such syllables were feet containing ‘two rhyme nodes’, though he did not identify an epenthetic in his framework of analysis.

of the final consonant from the rest of the syllable would have operated here at the phonetic level only after the phoneme had been lengthened at the phonetic level by stress, i.e. /roʃ/ [r̩o:.aʃ]. We should analyse, therefore, the syllable structure of short vowel phonemes that are lengthened by stress in syllables without a furtive *pataḥ* as having epenthetic vowels with the same quality of the vowel on the phonetic level, thus:

רָמֶתֶל /r̩a.mət̫el/ [r̩a:.mə:.aʃel]

מְבָרֵךְ /m̩e.b̩arex/ [m̩e:.b̩are:.ex]

וּזְעֵקָב /u.zəqab/ [u:.zə:.qab]

בְּלֵב /lev/ ['le:.ev]

The existence of the vowel split on the phonetic level in closed syllables with a long vowel is also reflected by the phenomenon of *nesiga*. This is a metrical measure to avoid the clash of two accents, whereby the stress represented by a conjunctive accent in the first of a sequence of two words is retracted when the second word has initial stress (Praetorius 1897; Revell 1983; Yeivin 1980, 236–40). It most regularly occurs when the first word ends in an open syllable or else a closed syllable that contains a vowel phoneme without a length specification, in particular *pataḥ* and *segol*, e.g.

מַלְאָמִים (Psa. 65.10 ‘full of water’)

הַבִּיא לְנוּ (Gen. 39.14 ‘he has brought for us’)

תַּאכְלֵל (Gen. 3.19 ‘you will eat bread’)

וַיִּפְתַּח תְּאֵרֶב (1 Sam. 25.3 ‘beautiful of form’)

לְעָשִׂתֶּם לוֹ (Jud. 9.16 ‘you have done to him’)

The accent is in principle not retracted when it falls on a closed syllable containing a long vowel phoneme, e.g.

לְצַיֵּד צַיֵּד (Gen. 27.5 ‘to hunt for game’)

אֲשִׁיב לְךָ (Zech. 9.12 ‘I will restore to you’)

נִגְמַן יְחִיד (Psa. 74.8 ‘we will oppress them together’)

שְׁרִפּוֹת אָשָׁ (Isa. 1.7 ‘burnt by fire’)

יְשַׁב שָׁ (1 Kings 17.19 ‘he is dwelling there’)

Praetorius (1897, 16) already suggested that the long vowels in stressed closed syllables that fell adjacent to another stressed syllable, as in the examples cited above, had an accent with ‘two peaks’, which tended to split it into a disyllable. According to our formulation, this second syllable can be identified as the result of the insertion of an epenthetic vowel, and this would have acted as a buffer between the two stresses, thus rendering *nesiga* unnecessary:

[לְצַיֵּד צַיֵּד]

Likewise, the accent is not retracted from the final syllable when the epenthetic vowel is clearly discernible in the form of a furtive *patah*, e.g.

לְהַרְיחַ בָּהּ (Exod. 30.38 ‘to smell it’)

We have seen that *nesiga* takes place when a vowel phoneme without a length specification occurs in a final closed syllable, e.g. **לְקַחַם תְּאכַל** (Gen. 3.19). When stressed, such a vowel would be phonetically long and split by an epenthetic, which

would have rendered retraction unnecessary. The fact that *nesiga* does take place is most easily explained as reflecting that the retraction took place at an earlier historical period, when vowels that are phonemes with unspecified length in the Tiberian tradition were still pronounced short when stressed. The position of the accents would have been fixed at this period.

There is a considerable degree of variation in the occurrence of *nesiga* when a word-final closed syllable contains *sere*. Some of this variation reflects the fact that *sere* is the realization either of a long vowel phoneme /ē/ or of the vowel phoneme /e/ of unspecified length that is lengthened by stress. Retraction often takes place when the *sere* belongs to the latter category, as one would expect from the discussion above. This is the case, for example, in verbal inflections. Since the /e/ phoneme is not stressed, it has the allophone [ɛ], which is represented by *segol*, e.g.

לִי אָלַק (Cant. 4.6 ‘I go’)

בְּהֵן יִזְתַּר (Zech. 13.8 ‘it will be left in it’)

בְּהֵן יִכְחַשֶּׁ (Hos. 9.2 ‘it will fail them’)

In some cases, there is retraction of an accent on *sere* in a closed syllable even where it would be expected to be a long /ē/ phoneme. This is found especially in participles, which are nominal forms. When this occurs, the *sere* remains long (generally indicated by a *ga'ya*), since its length is not dependent on stress, e.g.

דָּעַת אֲהֵב (Prov. 12.1 ‘loves knowledge’)

חַרְבַּת שְׁלֵף (Jud. 8.10 ‘drawing a sword’)

לֹמַתְעֵב גָּזִי (Isa. 49.7 ‘one abhorred by the nations’)

Retraction even takes place in such forms where the *sere* occurs before a guttural and has a furtive *patah*, e.g.

בָּזָקָע מִים (Isa. 63.12 ‘cleaving the waters’)

מָנָע בָּר (Prov. 11.26 ‘one who holds back grain’)

This retraction in forms with a long /ē/ phoneme in participles may be due to analogy with the retraction in verbal forms with *sere*, where the *sere* is a realization of the phoneme /e/ without a specified length feature. It is significant to note that the vowel corresponding to the *sere* in the final syllable of participles in the Greek transcriptions of the Hexapla is normally η, which represents a long vowel, but in one case ε, which represents a short vowel, e.g.⁶⁸

αννωθην (Ambrosiana Palimpsest | L [BHS]: הַנּוֹתֵן Psa. 18.48
‘the one who gives’)

νωσηρ (Ambrosiana Palimpsest | L [BHS]: נִצֶּר Psa. 31.24
‘preserving’)

ωζηρ (Ambrosiana Palimpsest | L [BHS]: עִזֶּר Psa. 30.11
‘helper’)

ααφης (Ambrosiana Palimpsest | L [BHS]: ψάχη Psa. 35.27
‘the one who delights’)

μαλαμμεδ (Ambrosiana Palimpsest | L [BHS]: דְּמָלֵם Psa. 18.35 ‘trains (ms)’)

⁶⁸ Data supplied by Ben Kantor.

In the Hexapla, ε is the counterpart of Tiberian šere also in verbal forms (§I.2.3.2.). This isolated use of ε in a participle may likewise reflect the fact that the vowel has undergone partial analogical levelling with that of the verbal inflections.⁶⁹ Other nominal and adjectival forms regularly have η, representing long ‘e’, as a counterpart of šere in the Tiberian tradition, e.g.

αηλ (Ambrosiana Palimpsest | L [BHS]: אֵל Psa. 18.31
‘God’)

εκκης (Ambrosiana Palimpsest | L [BHS]: עֲקָע Psa. 18.27
‘crooked’)

A typological parallel to the hypothesized insertion of an epenthetic vowel in closed syllables containing a long vowel in Tiberian Hebrew existed in Classical Arabic. According to the medieval Arabic grammars and works on the recitation of the Qur’ān, when a long vowel occurred in a closed syllable on account of a subsequent geminated consonant, e.g. šābbatun ‘young woman’, qūṣṣa ‘he was avenged’, the long vowel was pronounced longer than a long vowel in an open syllables.⁷⁰ The grammarian Ibn Jinnī in his work *al-Khaṣā’iṣ* states that this phenomenon arose from the fact that syllables such as šāb and qūṣ contained the inadmissible sequence of two quiescent letters.

⁶⁹ Yuditsky (2017, 153–54) and Brønno (1943, 260) argue that the short vowel is because the form is in construct with what follows. Such an explanation, however, is not totally satisfactory because other nominal forms with final η in the Hexapla transcription do not necessarily shorten in construct (Ben Kantor, personal communication).

⁷⁰ See the sources cited by Roman (1983, 720–21).

In the Arabic grammatical tradition, a long vowel was thought to consist of a short vowel + quiescent letter of extension (*harf al-madd*) or ‘soft’ letter (*harf al-lin*), i.e. šā (ش) would be analysed as šīn + a + quiescent soft ’alif. This theory was introduced into the medieval tradition of Hebrew grammar by Hayyūj. The extra length of the vowel in closed syllables is said by Ibn Jinnī to have occurred ‘as a substitute for the short vowel that is necessitated by the clustering of two quiescent letters’.⁷¹ The Arabist André Roman has proposed that the syllable structure described by Ibn Jinnī should be represented as šaa-ab etc.,⁷² i.e. the overlong syllable is split by an epenthetic vowel of the same quality as the preceding long vowel. This sequence of long vowel + epenthetic would have been perceived as an extra-long unitary vowel. Roman suggests that the onset of the syllable of the epenthetic vowel was constituted by a light constriction of the vocal folds. This form of syllable onset was attested elsewhere as a weak variant of the glottal stop (*hamza*), called by Sibawaihi *hamza bayna bayna* ('sound between *hamza* and zero'). Although the virtually null articulation of the *hamza bayna bayna* was, in effect, simultaneous with the beginning of the subsequent vowel, it formed sufficient division between two vowels for the resultant structure to be scanned as two syllables in poetry.⁷³

It is reasonable to assume that the onset of the phonetic syllable arising from the insertion of the epenthetic after a long vowel in closed syllables in the Tiberian reading tradition of

⁷¹ See Roman (1983, 722-23).

⁷² Roman (1983, 723).

⁷³ For the *hamza bayna bayna* see Roman (1983, 333).

Hebrew was analogous to the Classical Arabic *hamza bayna bayna*, i.e. a very light constriction of the vocal folds. As in Arabic, this would have been hardly perceptible but nonetheless sufficient to mark a syllabic boundary for metrical purposes.

When the epenthetic in such syllables in the Tiberian tradition was a furtive *patah*, the onset of the phonetic syllable containing the epenthetic would have been a glide homorganic with the quality of the preceding vowel. The medieval Karaite lexicographer al-Fāṣī refers to the existence of a bilabial glide in words in which the vowel before the furtive *patah* is *shureq* or *holem*:

Whenever the accent is on the letter before a *vav*, its pronunciation is light, between the lips, as in רוח ‘spirit’ and ניחוץ ‘soothing’.⁷⁴

Glides before furtive *patah* are mentioned also in a Genizah fragment of a Masoretic treatise:

If one of the letters ה, ח or י occurs at the end of a word and under the letter before it there is either א or אָ, then they are separated by אָ (i.e. [ja]), as in וְשָׁמַע ‘and he heard’, שָׁמֵחַ ‘joyful’, פְּרִחַ ‘flourishing’, מְשֻׁמֵּעַ ‘causing to hear’. If אָ is over it, they are separated by וְאָ (i.e. [wa]), as

⁷⁴ *Kitāb Jāmi‘ al-’Alfāz*, ed. Skoss (1936, vol. 2, 451-452): כל יו יכון אללהן: פִי אלחרף אל-לְּזִי קבליה יכון ברורה מכך בין אלשפתיין מתל רוח ניחוץ

in שָׁמֹעַ ‘hearing’, נִיחְחָה ‘fragrant’, and it אָו occurs, cases such as יְהוֹשֻׁעַ ‘Joshua’.⁷⁵

Such a glide is the result of a slight dip in the sonority of the preceding vowel. This can be represented in the phonetic transcription of a word such as רִיחַ thus: [‘ru:wah]. A word with a *hireq* or *shere* before furtive *pataḥ* can be represented with a palatal glide thus: שֵׂיחַ [‘si:jah] ‘plant’.

In most modern reading traditions in Arabic-speaking Jewish communities the glide before the furtive *pataḥ* is geminated (Morag 1952), e.g.

Baghdad

jeso'hejjah (Morag 1977, 55 | L [BHS]: ישׁׁוחַח Isa. 53.8 ‘[who] considers ... ?’)

'ru:wwah (Morag 1977, 55 | L [BHS]: רִיחַ Ecc. 11.4 ‘spirit’)

Jerba

ha're:j.jaʃ (Katz 1977, 87 | L [BHS]: הָרָע Isa. 1.16 ‘doing evil’)

'ruwwah (Katz 1977, 87 | L [BHS]: רִוחַ Deut. 34.9 ‘spirit of’)

In some traditions, the gemination of the glide alternates with the lack of it, e.g.

⁷⁵ CUL T-S NS 301.32: ואן אתפק אבר כלמה חֲרֵף מִן תְּחִלָּה וְכֵן תְּחִתָּה אֶלְחָרֵף אלְדִי קבליה אמא אָו אַ וְפִתְחָה בִּינְהָמָא בַּיִּאָ מִתְלָא שְׁמַע שְׁמַח פָּרָח מְשֻׁמָּע וְאֶדְא כֵּן עַלְיהָ אַ פִּתְחָה בִּינְהָמָא בַּוָּא מִתְלָל שְׁמֹעַ נִיחָח וְאַן אתפק אָו מִתְלָל יְהוֹשֻׁעַ

Yemen

rejjah ~ re:jah (Morag 1963, 134 | L [BHS]: ריח Cant. 2.13
'fragrance')

jadždžijjah ~ jađči:jah (Morag 1963, 134 | L [BHS]: גָּזֵה Isa. 13.10 '[he] will lighten')

n̄wwah ~ n̄:wah (Morag 1963, 134 | נַח 'Noah')

ruwwah ~ ru:wah (Morag 1963, 134 | רוח 'spirit')

In some of the Karaite transcriptions, an Arabic *shadda* sign is written over the glide, indicating that it was read as geminated in some variations of the Tiberian tradition already in the Middle Ages, e.g.

رُوح (BL Or 2555 fol. 23r, 1 | L [BHS]: רוח Ecc. 4.4 'spirit')

مُجِّع (BL Or 2555 fol. 86v, 10 | L [BHS]: מְגַע Ecc. 8.14
'that which reaches')

هُنْرَغَيْع (BL Or 2559, fol. 5v, 13 | L [BHS]: הַנְּרַגֵּע Lev. 22.4
'whoever touches')

It is attested also in some medieval manuscripts of Rabbinic Hebrew, e.g. הַטִּיחָה (Mishnah, *Kelim* 5.10 'the plastering').⁷⁶

The strengthening of the glide by gemination can be regarded as a measure to preserve it. It results in the fortition of the second vocalic mora of the preceding long [u:] or [i:] vowel, thus:

⁷⁶ Epstein (1950), Morag (1952, 236).

[Cuu] > [Cuw], e.g. ['ru:wah] > ['ruwwah]

[Cii] > [Cij], e.g. [mag'gi:jaʃ] > [mag'gijjaʃ]

The geminated [j] would, according to the normal principles of Tiberian pronunciation be realized as [ʃʃ], so a more accurate transcription would be [mag'gijjaʃ].

A similar type of gemination of glides is reflected in other contexts in the standard Tiberian vocalization, e.g. אֲדָמִים (1 Kings 11.17 ‘Edomites’), רַמְּנֵה (Job 13.7 ‘deceit’), וְהַשְׁתִּיתָה (Esther 1.8 ‘and the drinking’). This too is likely to have developed as a measure to preserve the glide. The vulnerability of such glides is shown by gentilic forms such as הַמִּצְרִים (Gen. 12.14 ‘the Egyptians’ < *hammiṣriyim).

In the Samaritan reading tradition, gemination of the glides [w] and [j] is normal between vowels. In many such cases an original guttural has been lost between the vowels (Ben-Hayyim 2000, 38–39), e.g.

muwwâb (מוֹאָב Gen. 19.37 ‘Moab’)

'eluwwâm (אֶלְוָם Gen. 1.1 ‘God’)

ruwwi (רוּחִי) Gen. 6.3 ‘my spirit’)

miyyâdâm (מִיְּדָם Gen. 6.7 ‘from man’)

miyyor (מִיּוֹר Gen. 11.31 ‘from Ur’)

miyyēlâb (מִיּוֹלָב Gen. 49.12 ‘than milk’)

A possible example of the opposite process is the reading by Ben Naftali of the word יִרְאֶה (Exod. 19.13 ‘he will be shot’) as יִרְאָה without gemination of the second yod, which is reported in

Kitāb al-Khilaf (ed. Lipschütz 1965, יְאֵיב). This would reflect an original [Cij] shifting to [Cii].

In modern reading traditions in the Middle East, the furtive *patah* often receives a secondary or, in some cases, a second main stress, e.g.

Jerba

ha're:j:jaf (Katz 1977, 87 | L [BHS]: הָרַע Isa. 1.16 ‘doing evil’)

ho'fe:j:jaf (Katz 1977, 87 | L [BHS]: הָפַע Deut. 33.2 ‘he shone forth’)

This phenomenon is reflected already in some Karaite transcriptions, in which the furtive *patah* is represented by *mater lectionis* *'alif*, e.g.

اعْلَمْنَاهُ (BL Or 2551 fol. 42r, 7 | L [BHS]: אָלַמְנָה Psa. 81.15 ‘I shall subdue’)

חֹבֶחֶת (BL Or 2551 fol. 66r, 3 | L [BHS]: חֹבֶחֶת Lev. 19.17 ‘you shall surely rebuke’)

It is likely that the purpose of this measure was to preserve the furtive *patah*.

In some manuscripts with Non-Standard Tiberian vocalization, a furtive *patah* is not marked before a guttural where it occurs in standard Tiberian vocalization, e.g.

Genizah manuscripts

פָתַח (T-S A11.1, Blapp 2017, 48 | L [BHS]: פָתַח Job 39.5 ‘he has loosened’)

מֹכִיחַ (T-S A11.1, Blapp 2017, 47 | L [BHS]: מֹכִיחַ Job 40.2 ‘he who reproves’)

מַדְעַע (T-S A12.1, Blapp 2017, 71 | L [BHS]: מַדְעַע Ruth 2.10 ‘why?’)

בְּזָרֶעַ (T-S A13.18, Blapp 2017, 125 | L [BHS]: בְּזָרֶעַ Psa. 89.11 ‘with an arm of’)

European manuscripts

וְלִנְטֵעַ (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: וְלִנְטֵעַ Jer. 18.9 ‘and to plant’)

יְגִיעָה (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: יְגִיעָה Isa. 13.10 ‘it (does not) shine’)

פָתַח (ASCAMO 57.2 v, Pilocane 2004, 29 | L [BHS]: פָתַח 2 Sam. 9.13)

As can be seen, in some cases a *shewa* is marked on the final guttural, which is a common practice in Non-Standard Tiberian manuscripts (§I.1.8., §I.1.16.). The vocalization, however, reflects the absence of furtive *patah*. A furtive *patah* is absent also in many manuscripts with Palestinian vocalization.⁷⁷

It is also omitted in some modern reading traditions of the Mishnah, e.g.

⁷⁷ Morag (1959, 233), Katz (1977, 87), Bauer and Leander (1922, 112–13).

Yemen

pe:he:h (Morag 1963. 128 | פְּחַד מִשְׁנָה Mishnah, *Megillah* 4.6,
 ‘clad in rags (ms)’)

The development of the furtive *patah* after close ([i:], [u:]) and close-mid ([e:], [o:]) long vowels before gutturals in the Tiberian tradition was the result, as remarked above, of giving the epenthetic after the long vowel a quality that is compatible with the vocal tract configuration of the guttural. This is likely to have had the orthoepic motivation of increasing the perceptibility of the guttural in order to ensure that it was preserved in the reading. The reading traditions that lacked furtive *patah* were more lax in the measures they took to preserve the gutturals in this respect. It is significant to note that the Samaritan tradition, which in its modern form has lost a large proportion of the gutturals, does not reflect the historical presence of a furtive *patah* (Ben-Hayyim 2000, 38–39), e.g.

wrū (BHS: וַיְרַא Gen. 1.2 ‘and the spirit of’)

zā'ru (BHS: עֲזָרָן Deut. 33.20 ‘arm’)

šū (BHS: שֹׁׁעֶה Gen. 38.2 ‘Shua’)

maz'rī (BHS: מִזְרֵץ Gen. 1.11 ‘producing seed’)

‘arqi (BHS: עָרְקֵץ Gen. 1.6 ‘expanse’)

I.2.5. SHEWA AND HATEF VOWELS

I.2.5.1. Principles of Phonetic Realization and Graphical Marking

I.2.5.1.1. Default Realization of *Shewa*

The *shewa* (אַוָּ) sign (א) in the Tiberian vocalization system was read either as a vowel or as zero.⁷⁸ When *shewa* was read as vocalic, its quality in the Tiberian tradition was by default the same as that of the *pataḥ* vowel sign, i.e., the maximally low vowel [a], e.g.

תִּכְסֶה [t^haχas'se:] ‘you (ms) cover’ (Job 21.26)

מִדְבָּרִים [maðabba'ri:im] ‘speaking’ (mpl) (Esther 2.14)

This [a] vowel is the outcome of a type of vowel reduction. Vowel reduction processes cross-linguistically usually result in

⁷⁸ Various other terms are used in the early sources to refer to the *shewa* sign, such as the Arabic terms *nuqtaṭayn* *qā'imayn* ‘two dots standing upright’ and *jazm* ‘cutting off’, both found in the works of Saadya. Moreover in some sources the word *shewa* is spelt with a *bet* (שָׁבָא). For details see Dotan (1953), Allony (1973, 105, n.165). In the early medieval sources a terminological distinction was made between *shewa* and the vowels, the latter being referred to by Hebrew terms such as מלכים ‘kings’, סימנים ‘signs’, תנויות ‘melodies’, נעימות ‘movements’ or Arabic terms such as *mulūk* ‘kings’, *naghmāt* ‘melodies’, *muṣawwītāt* ‘sounding forms’, *harakāt* ‘movements’ and *'anħā* ‘inflections’. See, for example, *Hidāyat al-Qāri'*, Long version, edition in vol. 2 of this book, §II.L.2.1., also Allony (1963), Posegay (2020).

loss of prominence, involving centralization and truncating duration. It has been recognized, however, that in some languages reduction involves pushing the vowels to the edges of the vowel space.⁷⁹ In some documented cases, this involves lowering vowels to [a], which is the vowel quality with the highest sonority.⁸⁰ This can be regarded as a strategy for preventing loss of prominence and maintaining duration. Such a strategy would be compatible with the conservative nature and orthoepic tendencies of the Tiberian tradition.

Other pre-modern traditions of Hebrew generally exhibit a less sonorous realization of vocalic *shewa*.

In the Greek and Latin transcriptions, it is frequently represented as an [e] quality, e.g.⁸¹

Septuagint

Γέραρα (Göttingen Septuagint | L [BHS]: גָּרָרָה Gen. 26.1 ‘to Gerar’)

Νετόφα (Göttingen Septuagint | L [BHS]: נֵטֶף Ezra 2.22 ‘Netopha’)

Origen

⁷⁹ See, for example, Crosswhite (2000; 2001; 2004).

⁸⁰ E.g. in the unstressed syllables of Belarussian: 'kol 'pole' > ka'la 'pole' (genitive); 'sept 'whisper' > ſap'tatsj 'to whisper'. This phenomenon is discussed in the context of Tiberian Hebrew by Himmelreich (2019), although he does not apply it to the vocalic *shewa*.

⁸¹ Data supplied by Ben Kantor.

γεδουδ (Ambrosiana Palimpsest | L [BHS]: גָּדוֹד Psa. 18.30 ‘a troop’)

σερουφα (Ambrosiana Palimpsest | L [BHS]: צְרוּפָה Psa. 18.31 ‘refined’)

Jerome

bethula (Commentary on Isaiah, ed. Gryson, III.16.21 | בֵּתּוֹלָה ‘virgin’ [comments on Isa. 7.14])

mecchenaph (Commentary on Isaiah, ed. Gryson, VIII.7.11 | L [BHS]: מַכְנָעָה Isa. 24.16 ‘from the edge of’)

In Origen, there is sometimes no vowel where Tiberian has a vocalic *shewa*, e.g.

βδαμι (Ambrosiana Palimpsest | L [BHS]: בְּדָמִי Psa. 30.10 ‘in my blood’)

φλαγαυ (Ambrosiana Palimpsest | L [BHS]: פְּלָגָע Psa. 46.5 ‘its streams’)

In medieval Palestinian vocalization, an [e] (represented below by ئ) or [i] vowel (represented below by ئ) is often used where Tiberian and vocalic *shewa*, e.g.⁸²

ח[ئ]م[ئ]ن (T-S NS 249.6, Dietrich 1968, 78* | L [BHS]: חֲמַנְעָה 1 Chr 6.16 ‘of the resting of’)

يُسَبَّبَه (T-S 12.195, Kahle 1930, 84 | L [BHS]: יְסַבֶּבֶה Psa. 55.11 ‘they will go round’)

⁸² Data supplied by Shai Heijmans.

The older layers of the Babylonian vocalization tradition appear to reflect a tendency to have zero where Tiberian has vocalic *shewa*. This can be inferred, for example, from a vocalization such as the following (Yeivin 1985, §8.13):

טָוֹךְ [i:so:ð] (Yeivin 1985, §8.13 | L [BHS]: טָוֹךְ Lev. 4.25
'the base of')

Here the *yod* is vocalized with *hireq*, which appears to have arisen due to the fact that this initial consonant clustered with the second consonant without an epenthetic [jso:ð] > [i:so:ð].

A few modern reading traditions realize vocalic *shewa* as the sonorous [a] vowel, as in Tiberian, e.g.

Yemen

[rāfɔ.'im] (Ya'akov 2013, 1014 | L [BHS]: רָפָאִים Isa. 26.19
'shades')

[lā'mañi] (Ya'akov 2013, 1014 | L [BHS]: לְמַעַלָּה Ezra 9.6
'higher/above')

Western Kurdistan

Šalomo (Sabar 2013, 480 | שלמה 'Solomon')

našāma (Sabar 2013, 480 | נשמה 'soul')

Eastern Kurdistan

tafillim (Sabar 2013, 481 | תַּפִּלִּים 'phylacteries')

barit mila (Sabar 2013, 481 | ברית מִילָה 'circumcision')

Kerala (festive reading)

[ga:do:'lo:] (Forsström 2013, 462 | L [BHS]: גָדוֹלָה 'large (fs)'
Esther 8.15)

[ta'xe:le:ðe:] (Forsström 2013, 462 | L [BHS]: תְּכַלָּת 'blue'
Esther 8.15)

In most Sefardi reading traditions vocalic *shewa* is realized higher in the region of [e], e.g.

Baghdad

ʃmət̪te'mol (Morag 1977, 67 | L [BHS]: מִתְמָל Exod. 21.29
'from yesterday')

Jerba

?əg,gedo'la: (Katz 1977, 101 | L [BHS]: הַגְּדָלָה Exod. 14.31
'the big (fs)')

Aleppo

ʃe'ne: (Katz 1981, 54 | L [BHS]: שְׁנֵי Gen. 48.1 'years of')

Tripoli

še'lumu (Artom 1922, 6 | L [BHS]: שֶׁלֶם 'Solomon')

Tunisia

werox'bu (Henshke 2013, 864 | L [BHS]: וְרָכֶבֶן Exod. 15.1
'and its rider')

Karaite traditions (Lithuania, Poland, Ukraine, Crimea and Istanbul)

b̄e-torat (Harviainen 2013, 457 | L [BHS]: בְּתֹרַת 'in the teaching of' Psa. 119.1)

Italy

metunim (Ryzhik 2013, 363 | L [BHS]: מְתוּנוּם 'moderate' (mpl))

Kerala (regular reading)

[ʃefi'pon] (Forsström 2013, 461 | L [BHS]: שְׁפִּין ‘adder’
Gen. 49.17)

In Morocco, vocalic *shewa* is frequently realized as the high vowel [i], e.g.

hagidulá (Akun 2010, 186 | L [BHS]: הָגִידְלָה Exod. 14.31 ‘the big (fs)’)

Ashkenazi reading traditions often have zero where Tiberian has a vocalic *shewa*, e.g.

Northeastern Ashkenazi

[krej'vɔ] (Katz 1993, 74 | קַרְזֵבָה ‘close’)

[gvul] (Katz 1993, 74 | גַּבּוֹל ‘border’)

In some traditions, it is often realized as the central vowel [ə], e.g.

Mideastern Ashkenazi

[mədi:'nu] (Glinert 2013, 194 | מִדְיָנָה ‘country’)

Central Ashkenazi

[mədi:'no:] (Glinert 2013, 196 | מִדְיָנָה ‘country’)

I.2.5.1.2. Contextually-Conditioned Realization of *Shewa*

In the Tiberian tradition, when vocalic *shewa* occurs before a guttural consonant or the letter *yod*, it was realized with a different quality through an assimilatory process. Before a guttural (i.e.

אֲהַחְתָּא) it was realized as a short vowel with the quality of the vowel on the guttural,⁸³ e.g.

בְּעֶרֶבְךָ [be'neRk'h'a'χɔ:] ‘by your evaluation’ (Lev. 5.15)

וְהִיָּה [voχɔ:'jɔ:] ‘and it became’ (Gen. 2.10)

בְּאֵרָרָר [be'e're:rər] ‘well’

מְאֹוד [mo'ʔo:oð] ‘very’

מְהִיר [mi'hi:iR] ‘price’

וְחִיךְ [vihiik'h'e:ex] ‘and your palate’ (Cant. 7.10)

מְעוֹכָה [muwɔ:χɔ:] ‘pressed’ (1 Sam. 26.7)

Before *yod*, it was realized as a short vowel with the quality of short *hireq* [i],⁸⁴ e.g.

⁸³ *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.2.12.1, short version, edition in vol. 2 of this book, §II.S.5.1. Some Non-Standard Tiberian manuscripts substitute a vowel sign for the *shewa* in such contexts, explicitly marking the assimilation in quality, e.g. קָאָמְرָתָךְ (T-S AS 68.100 | L [BHS]: *קָאָמְרָתָךְ* Psa. 119.76 ‘according to your promise’), יְהִי־לְבִי (T-S AS 68.100 | L [BHS]: *יְהִי־לְבִי* Psa. 119.80 ‘let my heart be’), וְאָשָׁמָרָה (T-S AS 68.100 | L [BHS]: *וְאָשָׁמָרָה* Psa. 119.88 ‘and I will keep’), בְּעִנְיָן (T-S AS 68.100 | L [BHS]: *בְּעִנְיָן* Psa. 119.92 ‘in my affliction’) (Outhwaite 2020).

⁸⁴ *Hidāyat al-Qāri'*, short version, edition in vol. 2 of this book, §II.S.5.2. Saadya, *Kutub al-Lugha* (ed. Dotan 1997, 468–72). *Treatise on the Shewa* (CUL Or 1080.13.3.2, fol. 2v.). Some Non-Standard Tiberian manuscripts explicitly mark this pronunciation before *yod* by vocalizing with a *hireq*, e.g. בַּיּוֹם (T-S AS 44.35 | L [BHS]: *בַּיּוֹם* Lam. 3.57 ‘on the day’) (Outhwaite 2020).

בַּיּוֹם [bi'jo:om] ‘on the day’ (Gen. 2.17)

לִישְׁרָאֵל [lijisr̥ɔ:cɔ:?'e:el] ‘to Israel’ (Gen. 46.2)

הַתְּקִישׁים [hatt̥ijɔ:cɔ:ʃi:im] ‘the goats’ (Gen. 30.35)

תִּדְמִין [tʰaðammi'ju:un] ‘you liken’ (Isa. 40.18)

According to the introduction to *Kitāb al-Khilaf*, where Ben Asher vocalized a preposition ה or ב followed by *yod* thus לִישְׁרָאֵל ‘to Israel’, Ben Naftali vocalized the first letter with *hireq* with no vowel on the *yod*, i.e. לִישְׁרָאֵל (Lipschütz 1965, 18). The pronunciation of the reading of Ben Asher was [lijisr̥ɔ:cɔ:?'e:el], the *shewa* being pronounced as [i] before the *yod*. In the reading of Ben Naftali, the sequence [iji] was contracted to a long vowel. As we shall see below, long vowels in syllables closed by a *shewa* must have had an epenthetic of the same quality, as was the case with long vowels in closed syllables in word-final position (§I.2.5.6.). Ben Naftali’s reading, therefore, can be represented [li:isr̥ɔ:cɔ:?'e:el].

Among the early model manuscripts, C frequently exhibits the type of reading of *shewa* before *yod* attributed to Ben Naftali. Such vocalizations are common also in manuscripts with Non-Standard Tiberian vocalization after the prefixed particles ל, ב and י, i.e. types of vocalization such as לִישְׁרָאֵל, בִּישְׁרָאֵל, יִשְׁרָאֵל.⁸⁵

⁸⁵ For this type of vocalization in Non-Standard Tiberian manuscripts see Ginsburg (1897, 578), Kahle (1930, 58*), Morag (1959, 233–34), Blapp (2017, 40–41, 76, 204).

I.2.5.1.3. *Hatef* Signs

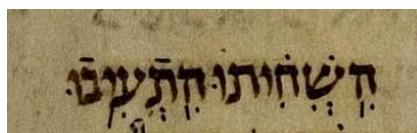
The *shewa* sign is combined with some of the basic vowel signs to form the so-called *hatef* signs. In the standard Tiberian vocalization these compound signs include:

<i>hatef patah</i>	(אָ)	[a]
<i>hatef segol</i>	(אֵ)	[ɛ]
<i>hatef qames</i>	(אֶ)	[ç]

In such signs the vocalic reading of the *shewa* is made explicit and also its quality.

In the Aleppo Codex (A) there are sporadic examples of a *hatef hireq* sign,⁸⁶ e.g.

A: בַּשְׁרִירָה הַשְׁמִינִית (Psa. 14.1 ‘they have acted corruptly and have done abominable deeds’ | L [BHS]: הַשְׁמִינִית)



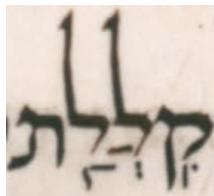
In *hatef* signs the *shewa* sign is normally placed to the right of the vowel sign. There are, however, some isolated variant forms of *hatef* signs in the early manuscripts in which the *shewa* sign is placed under or above the vowel sign. When the

⁸⁶ There are five cases of this sign in A; cf. Yeivin (1968, 21). *Hatef hireq* is attested also in some manuscripts with Non-Standard Tiberian vocalization.

component signs are stacked in this way, one of the components is sometimes placed inside the open space of the letter under which it is marked. Variants of this nature are attested, for example, in A (Yeivin 1968, 17). In L several of the *hatef patah* signs are the result of later corrections of an original simple *shewa* sign by the scribe of L, Samuel ben Jacob, or a later hand. In many such cases, the *hatef* sign is misshapen with the vowel sign component often squeezed into the space above the *shewa* sign (Phillips 2020).



A: הַתְפִירָה ‘it was rent asunder’ (Isa. 24.19)



L: קָלַל ‘the curse of’ (Jud. 9.57)

The stacking of *shewa* above the vowel sign and writing inside the letter, especially *het* and *he*, is common in Non-Standard Tiberian manuscripts.⁸⁷

The default pronunciation of vocalic *shewa* with the quality of [a] was equivalent to that of the *hatef patah* sign (ং). Both the

⁸⁷ Kahle (1930, 58*), Díez Macho (1963, 37) and Blapp (2017, 79).

vocalic *shewa* and the vowels expressed by *hatef* signs were short vowels that, in principle, had the same quantity as short vowels in closed unstressed syllables, which were represented in standard Tiberian vocalization by a simple vowel sign. So, the vocalic *shewa* in a word such as תְּכַשֵּׁה ‘you cover’ (Job 21.26) would have been read with the same quality and quantity as the *pataḥ* in the closed syllable that follows it: [t^haχas'se:]. Likewise, the *hatef pataḥ* in הַמֶּלֶךְ [ha'me:leχ] ‘interrogative + king’ would have been read with the same quality and quantity as the *pataḥ* in הַמֶּלֶךְ [ham'me:leχ] ‘the king’. Evidence for this is found in the *Treatise on the Shewa* published by K. Levy:

It is an established fact that every letter that has a ‘light’ (i.e. short) vowel requires a *shewa* unless this is precluded by a *dagesh* (in the following letter), as we exemplified at the beginning of our treatise, הַמֶּלֶךְ—הַמֶּלֶךְ, or by a *shewa* that is adjacent to it, i.e. after it, as in אָבָרָהָם; the *'alef* has a short vowel, and were it not for the *shewa* that comes after it, we would have given it a *shewa*.⁸⁸

The author of this treatise did not feel that there was a quantity difference between the vowel written with the *hatef* sign and the vowel represented by the full vowel sign. In his view, it was the syllable structure that necessitated the notational distinction and not the quantity of the vowel segment. The

⁸⁸ ותבת אן כל מכפֶּף פלא בד לה מין שוא בטה אלא אן ימנעה אלdagsh כמא מחלנא פי אל קולנא הַמֶּלֶךְ או ימנעה שוא יכוון אליו גאנבה עני בעודה בקולך אָבָרָהָם אלאלך כפה ולולא אלשואaldi בעודה געלנא לה שוא (כה, ed. Levy (1936, 26). The lacunae in Levy's text can now be supplied from the Geniza manuscript, CUL Or 1080.13.3.2, fol. 2v; cf. Yeivin (1981, 46), Eldar (1988, 127).

shortness of the vowel in a closed syllable was indicated by the *dagesh* or *shewa* on the subsequent consonant. For the sake of economy of notation, no additional sign was added to the vowel sign.

Further evidence for the quantitative equivalence of *shewa* and *hatef* vowels, on the one hand, and short vowels represented by full vowel signs in closed unstressed syllables, on the other, can be found in the use of the *hatef* signs and *shewa* in a variety of Non-Standard Tiberian manuscripts from the Cairo Genizah. These manuscripts sometimes represent short vowels in closed unstressed syllables with a *hatef* sign and represent short [a] in a closed unstressed syllable by a *shewa* sign, e.g.

לְאַבְרָהָם (T-S A21.14, Khan 1991, 863 | L [BHS]: **לְאַבְרָהָם** Gen. 35.12 ‘to Abraham’)

הַפְעָם (T-S A2.30 | L [BHS]: **הַפְעָם** Exod. 9.27 ‘this time’)⁸⁹

תֹּאמֶר אַתָּה (CUL Or 1080.A3.21 | L [BHS]: **תֹּאמֶר אַתָּה** Num. 6.2 ‘and you will say’)

בָּשָׂנָה (T-S AS 67.133 | L [BHS]: **בָּשָׂנָה** Deut. 14.28 ‘in the year’)

In manuscripts with vocalization, both those in the Genizah and those written in Europe, a *hatef qames* sign is frequently marked on a closed syllable, e.g.

⁸⁹ The data for this and the following two examples were supplied by Estara Arrant.

Genizah manuscripts

חַכְמָה (T-S A13.18, Blapp 2017, 125 | L [BHS]: חַכְמָה Psa. 90.12 ‘wisdom’)

וּרְבָּם (T-S A13.18, Blapp 2017, 125 | L [BHS]: וּרְבָּם Psa. 90.10 ‘their strength’)

European manuscripts

נָכְרִי (Codex Reuchlinianus, Morag 1959, 230 | L [BHS]: נָכְרִי 2 Sam. 15.19 ‘foreigner’)

חוֹגֵלָה (ASCNON B.I.1r, Pilocane 2004, 29 | L [BHS]: הַחֹגֶלָה Num. 27.1 ‘Hoglah’)

Even some of the Standard Tiberian Masoretic codices contain a few cases of *hatef* signs and *shewa* in closed unstressed syllables,⁹⁰ e.g.

בְּחִרְטָמִם (L [BHS], Exod. 9.11 ‘on the magicians’)

הַעֲרָבִים (L [BHS], Exod. 30.8 ‘the evening’)

יְחִזּוּקָה (L [BHS], 2 Sam. 10.11 ‘they are strong’)

יְשִׁבְרָךְ (L [BHS], Josh. 7.25 ‘he brings trouble on you’)

וְתַהֲרֹגֵנוּ (L [BHS], Jud. 16.2, ‘and we will kill him’)

לְמֹלֵךְ (B | L [BHS]: לְמֹלֵךְ Lev. 20.3 ‘to Molech’)

The *hatef qames* representing a short *qames* in a closed syllable occurs in a number of imperatives in the model manuscripts in forms that could be confused with suffix conjugation forms with a long *qames*. In such cases, the use of the *hatef* in a closed

⁹⁰ Yeivin (1968, 18), Dotan (1985).

syllable clearly has orthoepic motivations. *Hatef qameṣ* signs are marked frequently in this context in A (Yeivin 1968, 19), e.g.

וְשַׁדַּדוֹ (A | L [BHS]: וְשַׁדַּדוֹ Jer. 49.28 ‘and destroy!’)

מִשְׁכָּנוֹ (A | L [BHS]: מִשְׁכָּנוֹ Ezek. 32.20 ‘drag away!’)

זִכְרָה (A | L [BHS]: זִכְרָה 2 Chron. 6.42 ‘remember!’)

They are found occasionally in L, e.g.

שְׁמַרְתָּה (L | A: שְׁמַרְתָּה 1 Chron. 29.18 ‘keep!’, Masora parva in L and A: לְחֻנָּה ‘unique with short [qameṣ]’)

According to a medieval source, the Rabbanite authority Hai Gaon (tenth–eleventh centuries) recommended the use of *hatef qameṣ* in such words to ensure that the vowel was read correctly with a short vowel (Harkavy 1970, 24).

In the Masoretic literature, the root *h-t-p* is, in fact, is employed not only to describe short vowels in open syllables but also those in closed syllables, e.g.

כָּל לֶשׁוֹן יְרָאָה גַּעֲיָא כָּל לֶשׁוֹן רַאיָּה חַטָּף

Whenever the verb is from the root ‘to fear’, (the prefix) has a long vowel (e.g. יְרָאָו [ji:R'ʔu:] ‘they fear’), whenever it is from the root ‘to see’, (the prefix) has a short vowel (e.g. יְרָאָו [jiR'ʔu:] ‘they see’).⁹¹

Furthermore, in medieval Judaeo-Arabic texts with Tiberian vocalization, *shewa* and *hatef pataḥ* are used to represent Arabic short /a/ in both open and closed syllables, e.g.

⁹¹ Baer and Strack (1879, 31); cf. Ben-David (1957a, 14–15).

אַלְדוּד [?aldu:d] ‘the worm’ (T-S Ar. 8.3, fol. 16v, Khan 1992a, 107)

כְּלָקְתָּנִי [χalaqtani:] ‘you created me’ (T-S Ar. 8.3, fol. 16v, Khan 1992a, 107)

The use of *hatef* signs to indicate short vowels in unstressed closed syllables was the regular practice in the so-called ‘compound system’ of Babylonian vocalization. In this variety of Babylonian vocalization, short vowels in both open and closed syllables were regularly represented by different signs from those used to indicate long vowels. Most of the signs marking short vowels were formed by combining a vowel sign with the Babylonian *hitfa* sign, equivalent to Tiberian *shewa*, and so were formally equivalent to the Tiberian *hatef* signs. The *hitfa* sign was placed over the vowel sign in unstressed syllables closed by *dagesh* in Tiberian or under the vowel sign in unstressed syllables closed by *shewa* in Tiberian or by a word-final consonant,⁹² e.g.

הָבִיט (Tiberian: הָבִיט [hib'bi:it̫] ‘he watched’)

שָׁמֹר (Tiberian: יְשָׁמֹר [jif'mo:or] ‘he guards’)

In such compound Babylonian vocalization, the consonant following the vowel is typically not marked by a *dagesh* sign or *shewa* sign (*digsha* and *hitfa* in Babylonian terminology). The compound Babylonian system, therefore, marked on the vowels what the Tiberian system marked on the following consonant,

⁹² For further details see Yeivin (1985, 364–69) and the summaries in Khan (2013f) and Heijmans (2016).

one of the purposes of both being to indicate the shortness of the vowel.

I.2.5.2. Syllabification and Metrical Structure

In the Tiberian Masoretic literature a consonant with a vocalic *shewa* or a *hatef* vowel sign was not considered to stand independently, but was said to be bound to the following consonant. Thus the word תִּסְפַּר ‘you shall count’ (Lev. 23.16) was considered to have been composed of two prosodic units [tis–paru:]. The sources refer to these prosodic units by the Arabic term *maqta‘* (literally: ‘point of cutting off’), which is used in the Arabic grammatical literature to refer to a syllable. The treatise *Hidāyat al-Qāri‘*⁷ notes that syllables thus formed have the status of words, i.e., they can stand independently:

‘Another of its [i.e. the *shewa*’s] features is that it divides a word into (units) that have the status of words. This is because every letter at the end of a word is quiescent when it is deprived of an accompanying vowel and this letter that is deprived of a vowel is the stopping point (*mahatt*) of the word and its place of division (*maqta‘*), as in בְּרָאשֵׁית, in which the *tav* is the stopping point of the word, and אֹור, in which the *resh* is the stopping point of the word, and so forth. A quiescent *shewa* in the middle of a word has the same status, for it is in a sense a stopping point on account of its quiescence, for example וְהַחֲשִׂידְרִפְנִים ‘and the satraps’ (Esther 9.3), הַמְצַפְּנִים ‘those who chirp’ (Isa. 8.19). Each

of these two expressions has the status of three words (*kalim*) on account of the quiescent *shewa*'.⁹³

In various passages in *Hidāyat al-Qāri'* there are references to the fact that a vocalic *shewa* or *haṭef* vowel is read more quickly than a following full vowel sign, e.g. 'The *shewa* makes a letter mobile and causes it to be uttered quickly, so that one cannot tarry on that letter',⁹⁴ 'The *shewa* moves quickly forwards'.⁹⁵ By contrast, a vowel is read more slowly, e.g. 'A vowel has an indissoluble feature, namely slowness and steadiness'.⁹⁶ A vocalic *shewa* was considered to be in a subordinate relationship to a following vowel. In some Masoretic treatises, the *shewa* is referred to as a *khādim* 'servant' and the vowels are *mulūk* 'kings'.⁹⁷ This would be analogous to the relationship of a conjunctive accent, also referred to in the treatises as a *khādim*, with a following disjunctive accent.

These descriptions can be interpreted as referring to the rhythmic structure of the prosodic unit consisting of a vocalic *shewa* followed by a vowel whereby this unit is a prosodic foot

⁹³ *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.2.10.3.

⁹⁴ *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.2.12.4.2.: אלשוֹא ייחָרֵךְ אֶלְחָרֵף וַיִּסְרַע בְּנִטְקָה חֲתִי לֹא יִמְכַן אֶחָד אֵן יִלְבַּת בְּדָלֶךְ: אלְחָרֵף.

⁹⁵ *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.2.12.4.2.: אלשוֹא יִתְחַרֵּךְ בְּסֻרְעָה אֵלִי קְדָם.

⁹⁶ *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.2.12.7.: לְלִמְלָךְ עַלְהָ לֹא תְפַאֲרָקָה וְהִיא אֶלְתַּבָּאֵטִי אֶלְתַּבָּאָתִ:

⁹⁷ E.g. CUL T-S NS 301.84.

consisting of an iambic metrical pattern with a weak syllable followed by a strong syllable. This can be represented thus: (. *), where the brackets enclose the syllables of the foot, the star * represents the strong prominent syllable and the dot the weak syllable. On a prosodic level, therefore, the phonetic realization of a word such as תְּסִפְרִי would consist of three syllables parsed into two feet:⁹⁸

[(t^his.) (p^ha.^{*}ru:)]
 (*) (. *)

A number of features reflect the prosodic weakness of the syllable of a vocalic *shewa*. One feature is the neutralization of the original vowel quality (see below). Another feature is the occasional loss of gemination of a consonant with vocalic *shewa*. This applies in particular to sibilants, sonorants (*yod*, *lamed*, *mem*, *nun*) and *qof*, which constitute relative weak consonants. The omission of the *dagesh* in such forms varies across the medieval manuscripts, e.g. in L:

- הַשְׁלָבִים ‘the frames’ (1 Kings 7.28, < הַשְׁלָבִים)
- וַיֹּאמֶר ‘and he spoke (Gen. 8.15, etc. < וַיֹּאמֶר)
- הַמִּדְבָּר ‘the one speaking’ (Gen. 45.12, etc. < הַמִּדְבָּר ‘the one speaking’)
- בְּנֵחֶשֶׁתִּים ‘with bronze fetters’ (Jud. 16.21 < בְּנֵחֶשֶׁתִּים)

⁹⁸ Even though he was unaware of the medieval sources described here, J. McCarthy (1979, 162) recognized that the vowel of *shewa* was not shorter in quantity than other short vowels but rather was prosodically weak due to its being bound to the following vowel in a foot.

הַלְלוּ ‘sing praise’ (Jer. 31.7, < הָלֹל)

יִבְקַשׁוּ ‘let them seek’ (1 Sam. 16.16, < בְּקַשׁ)

The Masoretic notion of *maqta'*, therefore, can be equated with the notion of foot in the prosodic hierarchy rather than syllable.

In the representation above of the prosody of the תְּסִפְרִי it will be noticed that the first syllable by itself has the status of a foot, i.e. [(^htis.) (p^ha.'ru:)], where feet are marked by rounded brackets. This is in conformity with the current state of research on the typology of the metrical phonology of the world's languages. The foot (p^ha.'ru:), as remarked, is iambic, i.e. it consists of two syllables, of which the second is the stronger. It is a binary foot consisting of a light syllable with one mora, viz. CV, and a heavy syllable consisting of two morae, viz. CVV. In many languages with metrical phonology with binary feet, the feet may be binary either in the number of their syllables, as in the foot (CVCVV), which is known as a syllabic foot, or in the number of their morae, known as a moraic foot. This means that a heavy syllable with two morae, viz. CVV or CVC, normally represented in metrical phonology by (*), could function as a foot in the metrical scansion of a word alongside a syllabic foot.⁹⁹ The metrical parsing of תְּסִפְרִי [t^his.p^ha.'ru:] would, therefore, be [(*), (. *)].

The CVC syllable with a vowel [t^his], which constitutes an independent foot, would be metrically stronger than the first syllable of the foot (. *), which is represented by a *shewa* sign. This

⁹⁹ For the typology of feet in iambic metrical systems see Hayes (1985; 1995), Kager (1993, 383; 2007, 200–201).

would conform to the medieval descriptions cited above, which state that a vowel has the feature of ‘slowness and steadiness’ whereas a *shewa* ‘moves quickly forwards’. The CVC syllable [t^his] would, however, be lesser in prominence than the final CVV syllable with the main stress ['ru:']. These differences in prominence can be represented by a metrical grid.¹⁰⁰ In the grid the relative prominences are marked by differences in heights of columns of index marks:

Level 3			x
Level 2	x		x
Level 1	x	x	x
	(*)	(.)	('*)
	(t ^h is)	(p ^h a.)	('ru:)

As can be seen, the syllable with the main stress is the most prominent. This stress occurs on the strong syllable of the (.) (*) foot.

The foot is of relevance for some phonological processes in the Tiberian pronunciation tradition, such as the conditioning of the allophones of *resh* (§I.1.20.) and the retraction of stress (§I.2.6.). This is a key justification for the reality of such metrical constituents (Nespor and Vogel 2012).

¹⁰⁰ For hierarchical arrangement of linguistic rhythm on a grid see, for example, Liberman and Prince (1977), Hayes (1995, 26–31) and Halle and Vergnaud (1987). In a study of the metrical phonology of Tiberian Hebrew, Hovav (1984, 87–211) argues for the need to combine foot structures with grids.

As remarked, the phonetic realization of a word such as נִקְּךְ ['qo:.ol] should be parsed metrically as a single trochaic foot consisting of a strong syllable and a weak epenthetic syllable, which can be represented (*.). The weak syllable [ol] is bimoraic, so, in terms of its morae should be classified as heavy. It is somewhat unusual for a moraically heavy syllable to be the weak syllable of a binary foot (Kager 2007), but it is preferable to consider it as belonging together with the preceding syllable in the same foot constituent. The epenthetic syllable [VC] is weak and never stressed. Moreover, there is evidence from the distribution of the allophones of *resh* (§I.1.20.) and the pattern of the retraction of accents (§I.2.6.) for the parsing of two heavy syllables together as a single trochaic foot (*.). As for the occurrence of a trochaic foot in the foot inventory of Tiberian Hebrew together with the iambic foot (. *), it should be noted that the moraic foot consisting of CVV or CVC, which is a very frequent foot, is, in fact, best analysed as trochaic, although by convention it is normally represented (*). This is because the main prominence is on the first vowel mora, which is the most sonorous segment of the syllable, i.e. C¹V, C¹C (Kager 1993). A word-final syllabic sequence such as ['qo:ol] can be preceded by a vocalic *shewa*, e.g. נִקְּךְ ‘with a voice’, which should be analysed metrically as an amphibrach (. *.).

I.2.5.3. Phonological Principles

In the vast majority of cases, vocalic *shewa* and *hatef* vowels can be regarded as having the synchronic status of epenthetic vowels. Very often, vocalic *shewas* in the Tiberian reading tradition occur

where historically there were originally lexical vowels. These vowels were of different qualities, e.g.

יְכַתּוּבָה [yixt^ha'vu:] ‘they (m) write’ (< *yaktubū)

סִפְרִים [safo:r'iim] ‘books’ (< *siparīm)

דְּבָרִים [davɔ:r'iim] ‘words’ (< *dabarīm)

The vocalic *shewa*, however, does not preserve the quality of the historical lexical vowel; rather, the *shewa* is a vowel with a neutralized quality, i.e., the maximally open vowel [a], in some circumstances modified by assimilation to its phonetic environment. As remarked, before a guttural, it was realized as a short vowel with the quality of the vowel on the guttural and before *yod* it was realized as a short vowel with the quality of short *hireq* [i]. Shortness and non-rounded vowel quality and also the copying of the quality of an adjacent vowel are characteristic features of epenthetic vowels (Hall 2011, 1581). In examples such as those cited for the reduction of lexical vowels to epenthetic vocalic *shewa*, the motivation for the vowel is no longer lexical but rather phonotactic, in that it breaks illicit clusters of consonants on the phonetic level. Lexical vowels can be reduced to zero in contexts where licit sequences of consonants are the result, e.g.

מֶלֶךְ [malχe:] ‘kings of’ (< *malakē)

לְשֹׁמוֹןֵל [liʃmu:'?e:el] ‘to Samuel’ (< *la-Šamū'ēl)

According to this analysis of vocalic *shewa*, it would have to be assumed that the original vowel is absent at some underlying level of the phonological derivation of words and an

epenthetic vowel is introduced at the phonetic surface level. A /CC/ cluster at the onset of a syllable in word-initial position is broken by an epenthetic and this can be represented thus:¹⁰¹

/mqō.mō/	[ma.qo:.mo:]	'his place'	מִקְוָמָוּ
/yīχ.tvū/	[yīχ.ta.vu:]	'they write'	יִכְתְּבּוּ
/sfī.rī.m/	[sa.fī:.rī:.im]	'books'	סִפְרִים
/dvā.rī.m/	[da.vā:.rī:.im]	'words'	דְּבָרִים

The only exception was the *shewa* in forms of the feminine numeral שְׁתִּים / שְׁתִּי ‘two’ and the first component in שְׁתִּים / שְׁתִּי ‘twelve’, which was silent [ʃta:jim] / [ʃte:] / [ʃte:em]. It is for this reason that in many medieval manuscripts the accent *yetiv* is written on these words, e.g.

L: שְׁתִּים (Lev. 23.17)

L, A: שְׁתִּים (Ezek. 1.11, 41.24)

The rule of the accent *yetiv* is that it occurs on a vowel that is in the first syllable of a word. If the accent syllable is preceded by another vowel, including vocalic *shewa*, *yetiv* cannot occur but is replaced by *pashta*, e.g. בְּזַאת ‘with this’ (Num. 16.28) (Yeivin 1980, 198–99). According to some sources, the word was pronounced by the Tiberian Masoretes with a prosthetic vowel:

¹⁰¹ Such underlying representations without the epenthetic vowel are adopted in analyses of Tiberian Hebrew made within the framework of generative phonology and optimality theory, e.g. Prince (1975), Greenstein (1992), Malone (1993), Coetzee (1999), Edzard (2013).

[?εʃ'tʰa:jim],¹⁰² although this vowel is not written in the manuscripts. According to the author of *Hidāyat al-Qāri'* old and reliable codices (*al-maṣāḥif al-‘utuq al-jiyād*) mark *pashṭa* (טַחְשָׁ) rather than *yetiv* (טִימָשָׁ) on this word,¹⁰³ and this is occasionally found in the extant early codices, e.g.

C: טַחְשָׁ (Ezek. 1.11)

This can be interpreted as reflecting that the word was read with a prosthetic vowel, on account of which the accented vowel was not the first vowel of the word.

An anonymous Masoretic treatise indicates that there was variation in the way the word was read:

As for טַחְשָׁ, some people read this word with a mobile *shin* (i.e. a mobile *shewa* on the *shin*) on account of the necessity (of doing so) due to the fact it occurs in initial position and with strengthening of *tav* (i.e. with *dagesh*). Some people do not permit the reading of the *shin* as mobile and add a *hamza* (i.e. glottal stop, 'alef) before pronouncing it, although it is not written, in order to be able to pronounce the *shin* as quiescent (i.e. pronounce the *shewa* on the *shin* as quiescent). This (latter) is our reading.¹⁰⁴

¹⁰² Cf. the *Treatise on the Shewa* and the other sources discussed by Levy (1936, 31–33), also *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.2.12.5, and an anonymous Masoretic treatise CUL T-S NS 301.21.

¹⁰³ Long version, MS II Firkovitch, Evr.-Arab II 418, fols. 21r–21v.

¹⁰⁴ II Firkovitch, Evr.-Arab II 365, fol. 6r: שתים הדה אלכלה מן אלנאס מן יקראה בתחריך אלשין לשורה אלאבתדא ומע תשדיד אלתא ומהם מן לא יסתני

The silent *shewa* in שְׁתִים / שְׁתִי could be explained by the analysis of the *shin* as extrasyllabic and not part of the onset of the syllable. Moreover, if the cluster /ʃt^h/ were considered an onset, this would violate the normal principle of rising sonority of syllable onsets (Ewen and Hulst 2001, 136–41, 147–50; Hoberman 1989):

/ʃ.t^he:/ [ʃ.'t^he:] שְׁתִי

By contrast, in the imperative verbal form שַׁתָּה ‘drink (ms)!’ (Gen. 24.14) the *shin* and the *tav* form the onset of a syllable and are split by an epenthetic: /ʃθe:/ [ʃa.'θe:].

The variant reading of שְׁתִים / שְׁתִי reported in the aforementioned Masoretic treatise could be regarded as an epenthetic that was introduced late the transmission of the reading tradition after the rule of fricativization of post-vocalic consonants had ceased to operate.¹⁰⁵

When the preposition מִ ‘from’ is prefixed to the word שְׁתִים and the *nun* is assimilated to the *shin*, two processes are attested. In Jud. 16.28. the *shin* is geminated and the *shewa* is read vocalic, resulting in the pronunciation of the *tav* as a fricative:

L, A: נִקְם-אֶתְתָּ מִשְׁתִּי עַנִּי [mijʃa'θe:] ‘avenge of one of my eyes’
(Jud. 16.28)

תחריך אלשין פיזיד המזה קיבל ינטק בהא ולא תכתב ליטל בלבד אליו תסכן אלשין והדה. ה.י קראתנה.

¹⁰⁵ For this phenomenon after guttural consonants see §I.2.5.4. below.

In Jonah 4.11 the *shin* remains ungeminated and the *hireq* of the prefixed preposition is lengthened in compensation. The lengthening is indicated by a *ga'ya*:

L: הרָבָה מִשְׁתַּים־עֲשָׂרָה רַבּוֹ
‘more than twelve myriads’ (Jonah 4.11)

The author of the aforementioned anonymous Masoretic treatise states that in the tradition he is familiar with the *shewa* of the *shin* in מִשְׁתַּים is silent. He indicates, however, that some people read the *shewa* here vocalic and maintain the *dagesh* in the *tav*.¹⁰⁶

In word-internal position, the sequence /CCC/ is in principle syllabified /C.CC/, i.e. the second consonant is syllabified as an onset, and the cluster of the second and third consonants at the onset of the second syllable are split by a vocalic *shewa*, e.g.,

/yix.tʰvū/ [yix.tʰa.'vu:] יִכְתְּב֔וּ

‘They write’

A *shewa* under a geminated letter with *dagesh* within a word was likewise vocalic, e.g.

/ham.mlɔ̄.χī.m/ [ham.ma.lɔ̄.χi.im] הַמְלָכִים

‘The kings’ (Gen. 14.17)

I.2.5.4. *Hatef* Signs on Guttural Consonants

The discussion above concerning the epenthetic vocalic *shewa* has been concerned so far with cases in which it has developed

¹⁰⁶ II Firkovitch, Evr.-Arab. II 365, fol. 21r.

from a historical lexical vowel. Another motivation for an epenthetic vowel was to introduce an ahistorical vowel between two consonants for orthoepic purposes. This applies in particular to the frequent insertion of an epenthetic after a guttural consonant (**הענָא**) where there was no historical lexical vowel in a sequence where the guttural originally closed a syllable in word-medial position and was in contact with a following consonant. These epenthetics are regularly written with *hatef* signs in the standard Tiberian tradition. The process can be analysed as involving the following stages.

- (i) The historical syllable structure reflects the morphological pattern of the grammatical form in question, e.g. the prefix conjugation verb **לִעַלְוּ** ‘they go up’ would have the historical syllable structure *jaʃ.lū, in line with, for example, **לִשְׁבַּעַ** ‘they drink’. This can be regarded also as the underlying phonological syllable structure /jaʃ.lū/.
- (ii) A short epenthetic is added after the guttural. This creates a short open phonetic syllable [CV], viz. [ja.ʃa.lu:].
- (iii) The vowel in the syllable preceding the guttural is lengthened, viz. [ja:.ʃa.lu:]. This is likely to have come about due to a metrical constraint on having a sequence of a light CV syllable and a following weak epenthetic syllable.

In such syllabifications involving gutturals in word-medial position the epenthetic copies the quality of the preceding vowel:

/jaʃ.lū/ > [ja:.ʃa.'lu:] **לִעַלְוּ** ‘they go up’

/heʃ.lɔ:/ > [he:.ʃe.'lɔ:] **הִלְעַזְבֵּן** ‘he brought up’

/t^foh.rō/ > [t^fɔ:.hɔ.'rɔ:] הָרְחַץ ‘cleansing’

A similar process applies to sequences in which a monoconsonantal preposition is attached to a word beginning with a guttural, e.g.

/be?.ðō.m/ > [be:.?ɛ.'ðo:.om] בְּדוֹם

‘in Edom’ (Gen. 36.32):

The fact that an underlying short /e/ and short /o/ in forms such as /hef.lū/ and /t^foh.rō/ surface in the phonetic form with a *segol* and *qames* quality respectively, rather than as *sere* and *holem*, suggests that the lengthening was a late rule, both diachronically and synchronically, in the derivation. The derivation can be posited to be as follows:

/hef.lū/ > (i) [he.ɛ.ʃe.'lu:] > (ii) [he:.ɛ.ʃe.'lu:]

/t^foh.rō/ > (i) [t^fɔ.ɔ.ʃe.'rɔ:] > (ii) [t^fɔ:.ɔ.ʃe.'rɔ:]

The short vowel phonemes /e/ and /o/ are normally realized with the quality of [ɛ] and [ɔ] respectively when they are short and [e:] and [o:] when they are lengthened in syllables with the main stress, e.g. בֵּל /lev/ ['le:.ev] ‘heart’, שֵׁוֹן /ʃo:.on/ ['ʃo:.on] ‘strength’ (§I.2.3.2.). In a few sporadic cases the /e/ and /o/ vowels before gutturals are realized as [e:] and [o:], e.g.

נִשְׁלַח (Hab. 1.15 ‘he has brought up’)

נִשְׁלַח (Jud. 6.28 ‘it was offered up’)

Here the epenthetic *hatef* on the guttural has its default quality of [a], since a *hatef* does not have the qualities of *holem* or *sere*. These forms could be interpreted as reflecting a grammaticalization of the phonetic syllable structure in the environment

of gutturals with a lengthened vowel before the guttural, whereby it is encoded in the underlying phonological form as a long vowel phoneme, viz.

/hē.ɻlū/ [he:.ɻa.'lu:]

/hō.ɻlō/ [ho:.ɻa.'lɔ:]

Manuscripts with Babylonian vocalization exhibits many forms in which stage (ii) posited above for the development of most Tiberian forms (e.g. /heɻ.lū/ > (i) [he.ɻɛ.'lu:] > (ii) [he:.ɻɛ.'lu:]) does not seem to have taken place, with the result that the vowel before the guttural remained short or was elided. This is reflected in the following pattern of vocalization of guttural consonants (Yeivin 1985, 313). Such a syllabification was allowed because in the Babylonian tradition there was no constraint on the sequence of two weak CV syllables or on clusters of consonants in syllable onsets (Khan 2019):

נָשָׁרָה [nəʃa'ra:] or [naʃa'ra:] ‘young woman’ (1 Kings 1.3 | L [BHS]: נָשָׁרָה)

עִמְלָעֵד [jʃa'mi:ð] or [jaʃa'mi:ð] ‘He will build up’ (Prov. 29.4 | L [BHS]: עִמְלָעֵד)

In the metrical scansion of medieval Hebrew poetry in Spain, the vowel before a guttural with a *hatef* vowel is, likewise, treated as a short vowel, e.g. הַשְׁעָרָה is scanned as CVCVC[̄] (Delgado 2020).

The Greek transcriptions in Origen’s Hexapla also reflect a pronunciation in which the lengthening of the vowel before the

guttural had not taken place. This is seen in the following examples, in which epsilon reflects a short vowel:¹⁰⁷

εετηθ (Ambrosiana palimpsest | L [BHS]: הַעֲלִית Psa. 89.46
‘you wrapped’)

εελιθ (Ambrosiana palimpsest | L [BHS]: הַעֲלִית Psa. 30.4
‘you lifted up’)

εεμεδεθ (Ambrosiana palimpsest | L [BHS]: הַעֲמָדָת Psa. 31.9
‘you established’)

This suggests that the late lengthening of the vowel before the guttural is a feature specific to the careful reading of the Tiberian tradition.

The motivation for the introduction of the epenthetic between a guttural and a following consonant was orthoepic. Gutturals were weak consonants in the reading tradition and efforts were made to ensure that they were not slurred over. Acoustically the epenthesis made the gutturals more perceptible when separated from the following consonant¹⁰⁸ and this facilitated their preservation in the reading.

Although there is a tendency for gutturals to be followed by epenthetic vowels where parallel forms have silent *shewa*, this is not a universal rule. It is sometimes possible to identify additional phonotactic and metrical factors that appear to have conditioned the occurrence of the *hatef* vowels in certain forms with gutturals in contrast to other forms that have silent *shewa*.

¹⁰⁷ Data supplied by Ben Kantor.

¹⁰⁸ Cf. Hall (2011, 1577–78), who discusses this function of epenthesis in languages.

As shown by DeCaen (2003) and Alvestad and Edzard (2009), one factor that conditions the occurrence of *hatef* vowels on gutturals, at least on *het*, is sonority of the following consonant. They have shown that a *hatef* vowel tends to occur when the following consonant is high in sonority, e.g. in יְחִרְשָׁוּ ‘he ploughs’ (Hos. 10.11), where the consonant is a sonorant rhotic, but exhibits a greater tendency to be omitted when the following consonant is lower in sonority, e.g. יְחַזֵּל ‘he ceases’ (1 Sam. 9.5). This is motivated by the principle that 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 (Vennemann 1988, 40), and so the contact with a following weak sonorous onset is eliminated by an intervening *hatef* vowel.

Variations, however, occur in inflections of the same verb, where the same consonants are involved, e.g. יְחַשְׁבָּו ‘they consider’ (Isa. 13.17) vs. יְחַשְׁבָּוּ ‘they consider’ (Psa. 35.20). In such cases the *hatef* appears to have been motivated by a metrical factor, namely the disfavouring of a rhythmic clash. This is seen in a metrical grid representation of the two forms. In these grids feet are marked in the first row. It will be assumed that feet after the main stress are extrametrical (marked with angular brackets < >). Evidence for this extrametricality is presented below.

Level 3		x	
Level 2	x	x	x
Level 1	x	x	x
Feet:	(*)	(*)	< * >
	jah.	'ʃo:.	vu:

Level 3				x
Level 2	x		x	x
Level 1	x	x	x	x
Feet	(*)	(.)	(*)	(* .)
	ja:.	ha	ʃo:.	'vu:.
				un

The grid representation displays the varying degrees of the relative prominence of syllables. These include epenthetic syllables, syllables containing a vowel without the main accent, and syllables with the main accent (represented as levels 1, 2 and 3 respectively in the grids above). It is likely that the insertion of the syllable with the *hatef* vowel in the second form was favoured since it created grid euphony by repairing a potential rhythmic clash caused by two syllables of the same prominence before the stress,¹⁰⁹ as shown in the following grid:

Level 3			x	
Level 2	x	x	x	
Level 1	x	x	x	x
Feet	(*)	(*)	(*)	(.)
	*jah.	ʃo:.	'vu:.	un

In the standard Tiberian tradition a *shewa* is in principle silent on a guttural when the syllable of the guttural receives the main accent and it is followed by another syllable, e.g.

שָׁמַעֲנָנוּ [ʃɔ:.'ma:.aŋ.nu:] ‘we heard’ (Deut. 5.24)

¹⁰⁹ A clash is the occurrence of two adjacent metrically strong elements with the same prominence. A lapse is the occurrence of two adjacent metrically weak elements; cf. Prince (1983), Selkirk (1984).

שָׁלַחֲתִי [ʃalħaħ.tħi:] 'I sent' (Num. 22.37)

If the accent moves forward after the attachment of a suffix in such forms, however, a *hatef* appears, e.g.

שָׁמַעְנָנוּ [ʃa.ma.ffa.'nu:hɔ:] 'we heard it' (Psa. 123.6)

These phenomena can also be explained on metrical grounds if we posit, as remarked above, that syllables after the main accent are extrametrical and unfooted.¹¹⁰ The word שָׁמַעְנָנוּ can be represented thus (extrametrical syllables in angular brackets):

ʃɔ:. 'ma:. aħ. nu:
 (*) (* .) <*>

Here, since the syllable following the guttural is extrametrical and unfooted there is no rhythmic motivation for a *hatef*, which is a weak syllable that is obligatorily footed and metrically bound to a following strong syllable.

The metrical structure of שָׁמַעְנָנוּ is:

ʃa. ma:. fa. 'nu:. hɔ:
 (. *) (. *) <*>

¹¹⁰ For extrametrical syllables at the right periphery of words see Kager (2007, 204).

Here the accent on the syllable after the guttural licenses the *hatef* in that it can be footed and bound metrically to this strong footed syllable.¹¹¹

Apparent exceptions to this are cases where a conjunctive accent are retracted by *nesiga* onto a syllable before a *hatef* vowel, e.g.

מַה־גָּעַשְׁתָּךְ (Jonah 1.11, ‘what shall we do to you?’)

רֹחֶקֶת מִנִּי (Job 21.16, ‘it is far from me’)

This could be explained by a hypothesis of rule-ordering, whereby the syllabification and foot structure is fixed on the prosodic word level before the main stress retraction on the prosodic phrase level.

In many cases where a guttural occurs after the main stress in forms with an unstressed suffixed directive *he* particle the guttural does not have a *hatef*, e.g.

הַשְׁעָרָה (Deut. 25.7 ‘to the gate’; contrast **שַׁעֲרֵי** Neh. 13.19 ‘the gates of’)

לִמְעָלָה (Exod. 25.20 ‘above’; contrast **מֵעֶלֶת** Lev. 11.5 ‘it brings up’)

וּמְעָלָה (Exod. 38.26 ‘and upward’)

מֵעֶלֶת מֵעֶלֶת (Deut. 28.43 ‘above and higher’)

¹¹¹ According to J. McCarthy (1979, 164) the *hatef* vowel on a guttural is bound prosodically with the preceding syllable rather than the following syllable. The descriptions in the medieval sources and the process described here constitute counterevidence to such an analysis.

- הַעֲרָה** (Josh. 17.15 ‘to the forest’, silent *shewa* also with stressed suffix, e.g. **עֲרָה** Jer. 46.23 ‘her forest’)
- נַחַלָה מִצְרַיִם** (Num. 34.5 ‘to the brook of Egypt’)
- יְהָזָה** (Num. 21.23 ‘to Jahaz’)

There are, however, two exceptions to this, in both cases the stressed vowel is *holem*:

- צָעָרָה** (Gen. 19.23 ‘to Zoar’)
- הַאֲהָלָה** (Gen. 18.6 ‘into the tent’)

There is general agreement across the model Standard Tiberian manuscripts regarding the marking of *hatef* signs on gutturals. The reason a composite *hatef* sign was written rather than a *shewa* is likely to have been that the Masoretes considered that readers would have had greater difficulty predicting the realization of *shewa* under gutturals than in other contexts. As we have seen, there were differences conditioned by variations in the sonority of the consonant following the guttural. There were also variations within forms of the same root, e.g. in different inflections of verbal forms such as

- וַיִּחְבֹּשׁ** [v̥a:j.ja:.ha.'vo:.oʃ] (Gen. 22.3 ‘and he saddled’) —
וַיִּחְבֹּשׁוּ [vaj.jah.ba.'ʃu:] (1 Kings 13.13 ‘and they saddled’)
- יְחַשֵּׁבּוּ** [jah.'ʃo:vu:] (Isa. 13.17 ‘they consider’) — **יְחַשֵּׁבּוּ** [ja:.ha.ʃo:.vu:.un] (Psa. 35.20 ‘they consider’)

There were variations also across different grammatical categories, such as the distinction between the verb **יַקְרֵבּ** ‘he supplants’ (Jer. 9.3) and the proper name **יַעֲקֹב**.

The quality of the epenthetic vowel on gutturals deviates from the normal rules, which likewise motivated the addition of a vowel sign to the *shewa*. A *shewa* on a guttural, for example, retained the quality of [a] even if it preceded a guttural that was followed by a vowel of a different quality, e.g. יְמַנָּה [jim.ha.?u:] ‘they clap’ (Psa. 98.8). Moreover, as we have seen, an epenthetic vowel on a guttural became assimilated to the quality of a preceding *segol* or *qames*, e.g. הַמְעִיד [he:.?e.'mi:.i?d] ‘he set up’, הַמְעִיד [he:.?e.'ma:.a?d] ‘it was set up’.

In some extant manuscripts with Non-standard Tiberian vocalization, simple *shewa* is frequently marked on a guttural where standard Tiberian vocalization has a *hatef* sign, e.g.

חֲנִית (T-S A11.1, Blapp 2017, 44 | L [BHS]: חֲנִית Job 39.23
‘spear’)

קַשְׁעַ (T-S A11.1, Blapp 2017, 44 | L [BHS]: קַשְׁעַ Job 40.23
‘it will oppress’)

אַשְׁרֵי (T-S A11.1, Blapp 2017, 43 | L [BHS]: אַשְׁרֵי Job 40.5 ‘I will answer’)

אַלְכִּי (T-S A13.18, Blapp 2017, 124 | L [BHS]: אַלְכִּי Psa. 90.5
‘it passes away’)

This could be regarded as reflecting a more primitive stage of the development of the Tiberian vocalization system, in which the reading of a *shewa* on a guttural was not marked explicitly as vocalic by the addition of a vowel sign next to the *shewa* sign. In the standard Tiberian system a vestige of a more primitive stage of development can be identified in the vocalization of the *qere* of the Tetragrammaton with *shewa* corresponding to the *hatef*

vowel on the *'alef* in the standard vocalization of the words representing the *qere* יהוה (יְהוָה = אֱלֹהִים). One can compare this to the continuing use of the early Hebrew script to write the Tetragrammaton in Qumran manuscripts that are otherwise written in square script (Tov 2012, 205).¹¹²

In L a *hatef segol* is sporadically written on the Tetragrammaton when the *qere* is אֱלֹהִים. This is marked on the first two cases where it has this reading (Gen. 15.2, 15.8) and thereafter is vocalized with *shewa*:

L: אֱלֹהִים יְהוָה (Gen. 15.2)

L: אֱלֹהִים יְהוָה (Gen. 15.8)

In some Standard Tiberian manuscripts the Tetragrammaton is vocalized with *hatef segol* when the *qere* is אֱלֹהִים more regularly than in L, e.g. I Firkovitch Evr. I B 52.

In some Non-Standard Tiberian manuscripts the Tetragrammaton is vocalized with a *hatef patah* (יְהוָה) when the *qere* is אֱלֹהִים, e.g. II Firkovitch Evr. II B 3. Likewise, in Non-Standard Tiberian manuscripts, *hatef segol* is written on the Tetragrammaton more frequently than in L when the *qere* is אֱלֹהִים (Blapp 2017, 151).¹¹³

Conversely, in some Non-Standard Tiberian manuscripts a *hatef* sign is marked on a guttural where the standard Tiberian tradition has a silent *shewa*, e.g.

¹¹² Also in early manuscripts of Greek translations of the Hebrew Bible the Tetragrammaton is written in Hebrew script, in some cases even in the early type of script (Roberts 1951, 173–174).

¹¹³ Some manuscripts with Babylonian vocalization represent the initial vowel of the *qere* on the Tetragrammaton (Yeivin 1985, 912).

Genizah manuscripts

סְחִירָה (T-S A12.1, Blapp 2017, 71 | L [BHS]: סְחִירָה Prov. 31.18 ‘her merchandise’)

בְּעַלְתָּה (T-S A12.1, Blapp 2017, 71 | L [BHS]: בְּעַלְתָּה Prov. 31.23 ‘her husband’)

תְּרֻמָּתָה גְּגַוְתָּה (T-S A12.1, Blapp 2017, 71 | L [BHS]: תְּרֻמָּתָה גְּגַוְתָּה Prov. 27.6 ‘and excessive’)

אֲהֵה (T-S A12.1, Blapp 2017, 74 | L [BHS]: אֲהֵה Ruth 2.13 ‘I will be’)

תְּשַׁבְּעַנְהָה (T-S A12.1, Blapp 2017, 71 | L [BHS]: תְּשַׁבְּעַנְהָה Prov. 27.20 ‘will [not] be satisfied’)

European manuscripts

שְׁמַעְנָה (Codex Reuchlinianus, Morag 1959, 224 | L [BHS]: שְׁמַעְנָה Josh. 1.17 ‘we heard’)

מְאֹפֶלְתָּה (Codex Reuchlinianus, Morag 1959, 224 | L [BHS]: מְאֹפֶלְתָּה Jer. 2.31 ‘darkness’)

מְעַטְנִים (BL Add MS 21161, fol. 160v | L [BHS]: מְעַטְנִים Psa. 104.10 ‘springs’)

The occurrence of a *dagesh* in the letter after the *hatef* in forms such as **תְּרֻמָּתָה גְּגַוְתָּה** and **הַיְלֵלָה מְאֹפֶלְתָּה** indicates that the guttural must originally have been vowelless and the epenthetic *hatef* vowel was inserted at a late period after the rule of fricativization of בְּגִדְכְּפָתָה consonants following vowels had ceased to operate. The same applies to the occurrence of the Non-Standard

Tiberian *dagesh* in the *nun* of נַעֲמֵשׁ, which would normally occur only after a vowelless letter (§I.3.3.).

In manuscripts with Babylonian vocalization, there are several attested cases of the phenomenon of late insertion of an epenthetic and preservation of a plosive בְּגִכְפָּת in word-internal position marked by *dagesh* (a miniature *gimel* over the letter) (Yeivin 1985, 342), e.g.¹¹⁴

הַעֲמִיקִים [hi?i:t^hi:qu:] ‘they moved away’ (L [BHS]: Job 32.15)

מַעֲלֵתֶיךָ [m?aglo:t^hc:w] (L [BHS]: מַעֲלֵתֶיךָ Prov. 5.21 ‘his paths’)

אֶרְבָּעָתָךְ [?arbaFa:t^hc:m] (L [BHS]: אֶרְבָּעָתָךְ Dan 1.17 ‘the four of them’)

I.2.5.5. *Hatef* Signs on Non-Guttural Consonants

Hatef signs are occasionally marked on non-guttural consonants in the Standard Tiberian vocalization. Many of these are epenthetic vowels, which had the purpose of disambiguating the reading of a *shewa* under a non-guttural consonant, i.e. to indicate explicitly that it was vocalic and to indicate its quality. This was an orthoepic measure to ensure correct reading. The model manuscripts differ as to the number and distribution of *hatef* signs on non-guttural consonants, and the Masoretic treatises refer to differences in this regard among the Tiberian Masoretes. The existence of these differences can be interpreted as indicating that *hatef* signs on non-guttural consonants emerged

¹¹⁴ Data supplied by Shai Heijmans.

at a later stage in the development of the Tiberian vocalization system than *hatef* signs on guttural consonants.

The main difference in the marking of *hatef* signs on non-guttural consonants is the extent to which the vocalic *shewa* with its default pronunciation of [a] was replaced by a *hatef patah* sign. The Aleppo Codex (A) exhibits a particularly advanced tendency to mark *hatef patah* in such contexts, and there are many examples where A has *hatef patah* but L and other manuscripts have simple *shewa*, e.g.

- A: חַרְצָח (L [BHS]: 2 Kings 6.32 ‘the murderer’)
- A: לִמְתָּהִים (L [BHS]: Job 33.22 ‘to those who bring death’)
- A: בְּמַלְתִּים (L [BHS]: 1 Chron. 16.5 ‘with the cymbals’)
- A: הַנְּקָלָה בְּעִינֵיכֶם (L [BHS]: 1 Sam. 18.23 ‘does it seem to you a little thing?’)
- A: וַיְשַׁלַּח (L [BHS]: 2 Kings 9.17 ‘and send’)
- A: הַתְּמִלֵּךְ (L [BHS]: Jer. 22.15 ‘are you a king?’)
- A: לְקָקֹו (L [BHS]: 1 Kings 21.19 ‘they licked’)

The manuscript L marks *hatef patah* in place of vocalic *shewa* in a number of cases, e.g.

- L: וְהַתְּבִרְכּו (Gen. 22.18 ‘they shall bless themselves’)
- L, A: רַטְפֵּשׁ (Job 33.25 ‘his flesh became fresh’)
- L, A: וַיְשַׁבֵּה (Jud. 5.12 ‘and take captive!’)

In some model manuscripts, however, *hatef patah* never occurs on non-gutturals, e.g. MS Sassoон 507 (S) (Shashar 1983, 20).

The Masorete Pinhas Rosh ha-Yeshiva is reported in the *Diqduqe ha-Te'amim* to have added a *patah* sign to many instances of vocalic *shewa* under non-guttural consonants, some of which have simple *shewa* in L (ed. Dotan 1967, §20), e.g.

שְׁכָבִים (Exod. 25.20 ‘covering’ | L [BHS]: שְׁכָבִים)

הַתְּפֻרְרָה (Isa. 24.19 ‘it has been rent asunder’ | L [BHS]: הַתְּפֻרְרָה)

קָשֵׁי (Deut. 9.27 ‘stubbornness’ | L [BHS]: קָשֵׁי)

There are also differences in the manuscripts and among the Masoretic authorities with regard to the replacement of a vocalic *shewa* by a *hatef* sign on a non-guttural consonant before a guttural consonant with the purpose of indicating the quality of the *shewa*. This is referred to in *Diqduqe ha-Te'amim*, which states that there was no consistency among the Tiberian Masoretes in the marking of *hatef qames* in words such as (ed. Dotan 1967, §19):

וְנִפְתַּחֲהָ (L [BHS]: וְנִפְתַּחֲהָ Gen. 43.21 ‘and we opened’)

שְׁמֹעָה (L [BHS]: שְׁמֹעָה Psa. 39.13 ‘hear’)

וְנִקְרָאָה (L [BHS]: וְנִקְרָאָה Zech. 8.3 ‘and it will be called’)

This was a measure to ensure that the *shewa* was read with the quality of the *qames* after the guttural rather than its default

pronunciation with the quality of *patah*.¹¹⁵ Here L generally exhibits the more conservative practice of leaving the words with simple *shewa* with the expectation that the reader would know the correct pronunciation. There are, however, some cases of *hatef qames* in this context in L, e.g.

שָׁמַחַתּוּ (Jer. 20.15 ‘he made him happy’)

The Aleppo Codex exhibits a greater tendency to use a *hatef* sign in these circumstances (Yeivin, 1968, 35), e.g.

A: קֹהֲתִי (L [BHS]: Josh. 21.4 ‘the Kohathite’)

As we have seen, A even uses an innovative *hatef hireq*. The purpose of this was to mark explicitly that a *shewa* was vocalic and that, since it was followed by a guttural with a *hireq*, the *shewa* was to be read with the quality of *hireq* (Yeivin 1968, 21), e.g.

הַתְּעִיבָוּ [hi:.θi.'v̥i:vu:] (L [BHS]: Psa. 14.1 ‘they have done abominable deeds’)

Some Non-Standard Tiberian manuscripts use the simple vowel sign *hireq* in place of the *shewa* sign where the *shewa* has the pronunciation of short [i] before a guttural with *hireq*, e.g.

¹¹⁵ Compare the remarks of David Qimḥi (*Sefer Mikhlol*, ed. Rittenberg, 1862, 138b): “וכן על קמץ חטף כמו ומגער בערך קריית הגימל נוטה ל�מץ חטף מפני העיין ויש ספרים מדויקים שהגימל נקודה בקמץ חטף ‘Likewise with *hatef qames*, as in Isa. 54.9, the reading of the [vowel on] the *gimel* is similar to *hatef qames* on account of the ‘ayin. There are accurately vocalized codices in which the *gimel* is vocalized with *hatef qames*.’”

שִׁאֵן (T-S A12.1, Blapp 2017, 75 | L [BHS]: שִׁאֵן Prov. 29.13
‘and a man’)

In Non-Standard Tiberian manuscripts *shewa* before *yod*, which is pronounced as [i], is frequently replaced by *hireq*, e.g. Genizah manuscripts

נְיָרַחַת (T-S A12.1, Blapp 2017, 75 | L [BHS]: נְיָרַחַת Prov. 31.20
‘and her hands’)

לְמַתָּן (T-S A13.20, Blapp 2017, 151 | L [BHS]: לְמַתָּן Psa. 69.4
‘waiting’)

European manuscripts

יְסֹרֶרֶת (Codex Reuchlinianus, Morag 1959, 234 | L [BHS]:
יְסֹרֶרֶת Josh. 6.26 ‘he will found it’)

לְיָלִיל (Codex Reuchlinianus, Morag 1959, 234 | L [BHS]: לְיָלִיל Isa. 15.2 ‘wails’)

I.2.5.6. Silent *Shewa* after a Long Vowel

When *shewa* occurred within a word after a long vowel, it was as a general rule silent,¹¹⁶ e.g.

יְשֻׁבָּה [je:eʃ'vu:] (Gen. 47.6 ‘let them dwell’)

יְצָרָה [jɔ:cɔ:ðə] (Gen. 49.8 ‘your hand’)

שְׁמַרְיוֹן [ʃɔ:mɔ:n̩] (Jud. 2.22 ‘they guarded’)

שְׁמָרִים [ʃɔ:om'r̩e:] (2 Kings 25.18 ‘the guards of’)

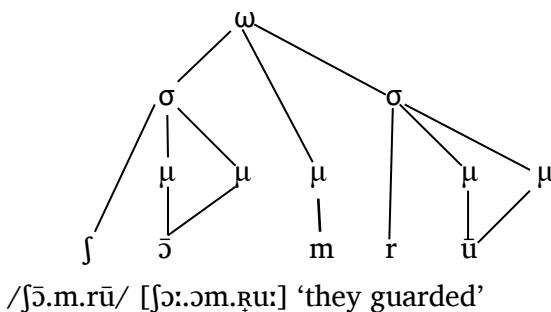
¹¹⁶ The evidence for this in the various medieval sources is discussed in Khan (1987, 54–55).

As can be seen in the transcriptions above, we should assume that an epenthetic vowel of the same quality of long vowel occurred before the consonant with the silent *shewa* after the long vowel. The presence of the epenthetic in such word-medial syllables is demonstrated by the fact that the first syllable can take a secondary stress in the form of a conjunctive accent, e.g.

כְּעַטֵּף [k^ho₁yo₂:ot³] ‘like one wrapped’ (Cant. 1.7)

A secondary stress cannot clash with the main stress but must, in principle, be separated from it by intervening syllable on the phonetic level.

This phenomenon may be compared to the insertion of an epenthetic after a long vowel in a closed syllable at the end of a word, e.g. קֹל [qo:ol] ‘voice’ (§I.2.4.). The underlying syllable structure of words such as שָׁמַרְתִּי [ʃɔ:.ɔm.'ruti:] could, therefore, be represented /ʃɔ.m.rū/, with a stray extrasyllabic consonant, just as it has been proposed to posit the existence of an extrasyllabic consonant in word-final position, viz. /qō.l/. Following the analysis by Kiparsky (2003) of Arabic syllable structure, we may say that such unsyllabified consonants, which he terms ‘semisyllables’, are licensed by moras adjoined to the higher node of the prosodic word rather than the syllable node:



On the phonetic level the extrasyllabic consonant was syllabified by means of an epenthetic. There was a constraint against word-final short epenthetic vowels in open syllables [CV], since such syllables had to be combined in an iambic foot with a following bimoraic syllable, i.e. a syllabification such as [qo:.la] or [ro:.fa] was not licit. So the epenthetic came before the consonant, forming a closed syllable [VC]: ['qo:.ol], which constituted a trochaic foot (*.) metrically. In principle, the word-internal consonants in a sequence such /C \bar{V} CC \bar{V} /, as in מִשְׁׁרָת, could have been syllabified /C \bar{V} .CC \bar{V} / with an epenthetic breaking the cluster in the onset of the second syllable /CC \bar{V} / on the phonetic level, thus [(CV:).(CV.CV:)], with the feet indicated by the round brackets. This is because a short open syllable [CV] is licit in this position. Such a syllabification, indeed, occurs in some words (see below). The normal syllabification of word-internal sequences such as /C \bar{V} CC \bar{V} / and /C \bar{V} CCVC/ as /C \bar{V} .C.C \bar{V} / and /C \bar{V} .C.CVC/ rather than /C \bar{V} .CC \bar{V} / and /C \bar{V} .CCVC/ is likely to have developed by analogy with the obligatory syllabification /C \bar{V} .C/ in word-final position.

The metrical parsing of a form such as [ʃɔ:.ɔm.ʁu:] would be [(*.) '(*.)], i.e. [(ʃɔ:.ɔm).('ʁu:)]. As remarked already, the second syllable in the trochaic foot (*.) is heavy since it is bimoraic, but it would have been of relatively low prominence. The relative differences in prominence can be reconstructed on a metrical grid as follows:¹¹⁷

¹¹⁷ J. McCarthy (1979, 157) also proposed that such word-internal syllables were feet containing ‘two rhyme nodes’, though he did not identify an epenthetic in his framework of analysis.

Level 3			x
Level 2	x		x
Level 1	x	x	x
Feet	(*)	(.)	(*)
	׃כָּיִם	ׁכְּמִים	ׁבְּרַעַם

I.2.5.7. Vocalic *Shewa* after a Long Vowel

I.2.5.7.1. On Guttural Consonants

In certain cases, a *shewa* after a long vowel in word-internal position was pronounced vocalic. This applies to all cases where the consonant after the long vowel is a guttural. In such cases, as is the rule with gutturals, the vocalic reading is explicitly indicated by *hatef* signs, e.g.

כְּהָנִים [k^ho:ha'ni:im] ‘priests’

צְעַקִּים [s^go:n'a'qi:im] (Gen. 4.10 ‘crying out’)

לְחֹצֵץ [lo:ha's^ri:im] (Exod. 3.9 ‘pressing’)

פְּאַבְּדִים [k^ho:2a'vi:im] (Gen. 34.25 ‘being in pain’)

Hypothetically it could have been possible for a type of furtive *pataħ* vowel to have been inserted before the guttural, i.e. [lo:wah's^ri:im], by analogy with gutturals in word-final position, as in, for example, [mo:wah] מָה ‘marrow’. The insertion of the epenthetic after the guttural had an orthoepic motivation. It was a more optimal position to make the guttural maximally perceptible before the following consonant. This also put the guttural in the onset of a syllable, which is a stronger position than the syllable coda and thus more optimal from an orthoepic point of

view. The placement of the epenthetic before the guttural in word-final position, i.e. furtive *patah*, is due to the fact that the constraint on word-final, unfooted CV syllables outranked the orthoepic principle of putting the guttural in onset position. The Babylonian reading tradition did not have such a constraint on word-final CV syllables and placed furtive *patah* after a guttural in word-final position. This is attested where the final consonant is ‘ayin (Yeivin 1985, 327–28), e.g.¹¹⁸

‘גַּיְנָה [jag'gi:fə] (L [BHS]: גִּינָה Isa. 8.8 ‘it will reach’)

‘מַדְעָה [mad'du:fə] (L [BHS]: מַעֲדָה Jer. 2.14 ‘why?’)

I.2.5.7.2. On Non-Guttural Consonants

The Masoretic sources list a number of cases where the *shewa* on non-guttural consonants after a long vowel is vocalic rather than silent according to the general rule. The early Tiberian Masoretic manuscripts vocalize many of these cases with *hatef patah* to indicate that the *shewa* should be read as vocalic (§I.2.5.1.). As remarked above, some manuscripts vocalize in this way more frequently than others and it is particularly common in A.

I.2.5.7.3. Long Vowel before Two Identical Consonants

One notable case is a *shewa* under the first of a pair of identical consonants, which was vocalic if the preceding vowel was long, e.g.

L: לְקַרְבָּן [ləq̚r̚b̚n] ‘they licked’ (A: לְקַרְבָּן, 1 Kings 21.19)

¹¹⁸ Data supplied by Shai Heijmans.

- L: סִבְבָּוֹת [sibba'vu:] ‘they surrounded’ (A: סִבְבָּוֹת, Josh. 6.15)
- L: שׁוֹרְטַנְאָה [ʃo:t'a:t'u:] ‘run to and fro!’ (A: שׁוֹרְטַנְאָה, Jer. 5.1)
- L: עַלְלָוָת [ʔal'ləvət] ‘gleanings’ (A: עַלְלָוָת, Jud. 8.2)
- L: חֲקָקִי [ħo:qa'qi:] ‘one who carves’ (A: חֲקָקִי, Isa. 22.16)
- L: בְּתוּכֶם [baθorχa'χε:em] ‘in your presence’ (Gen. 23.9)
- L: הַלֵּיכָה [ho:li:χa'χɔ:] ‘he caused you to go’ (Deut. 8.2)

The insertion of the epenthetic between the consonants was most likely favoured since it made the two identical consonants more perceptible and so ensured that they were not slurred together and contracted in the reading. The vocalic *shewa*, therefore, here has an orthoepic motivation. In a CVC sequence one repair strategy of the overlong syllable CVC would have been to elide the consonant in the coda. This would have been easier where there was a sequence of two identical lexical consonants.

If the preceding vowel was short, the *shewa* was silent.¹¹⁹ This was due to the fact that the syllable CVC with a short vowel was bimoraic and not subject to any change to optimalize its weight, e.g.

- L: הִנֵּנִי [hin'ni:] ‘behold me’ (Gen. 6.17)

¹¹⁹ *Diqduqe ha-Te'amim* (ed. Dotan, 1967, §5), Saadya, *Kutub al-Lugha* (ed. Dotan 1997, 466–67). *Treatise on the Shewa* (ed. Levy 1936, ၃၁၅).

L, A: הַרְרִיָּקְדָם [haRRE:] ‘the mountains of old’ (Deut. 33.15)

L, A: רְבָבֹת אֶפְרַיִם [riv'vo:oθ] ‘the ten thousands of Efraim’ (Deut. 33.17)

L, A: חֲקָקִים אֵין [hiqqe:] ‘decrees of iniquity’ (Isa. 10.1)

L, A: יְלַלְלָה [jillca:'θəca:h] ‘its wailing’ (Isa. 15.8)

L: וְשִׁזְׁרוֹן [vaʃɔ:ʃ'ðu:] ‘and devastate!’ (A: וְשִׁזְׁרוֹן, Jer. 49.28)

Note that in the last example, A indicates the shortness of the vowel in the closed syllable by *hatef qameš* sign.

In six words, however, *shewa* on the second of two identical letters after a long vowel is silent, in all of which the long vowel has the main stress. These are the following:¹²⁰

L, A: יְמַצְאָנִי [jimsɔ:c:'?u:unni:] ‘they (m) will find me’ (Prov. 8.17)

L, A: יְשַׁחֲרָנִי [jaʃa:ha'rɔ:u:unni:] ‘they seek me’ (Hos. 5.15)

L, A: יְכַבְּדָנִי [jaχabba'ðɔ:u:unni:] ‘he honours me’ (Psa. 50.23)

L, A: יְקַרְאָנִי ... יְשַׁחֲרָנִי ... יְמַצְאָנִי ...

jaʃa:ha'rɔ:u:unni: va'lɔ: jimsɔ:c:'?u:unni:] ‘they call me ... they seek me but do not find me’ (Prov. 1.28).

This can be explained on metrical grounds in the same way as the difference between שְׁמֻעָנוּת and שְׁמֻעָנוּ (§I.2.5.4.) The occurrence of vocalic *shewa* after the main accent in יְמַצְאָנִי is not optimal since the final syllable after the accent is extrametrical and unfooted and a vocalic *shewa* is a weak syllable that is obligatorily footed and metrically bound to a following strong syllable.

¹²⁰ *Diqduqe ha-Te'amim* (ed. Dotan, 1967, §5), the *Treatise on the Shewa* (ed. Levy, 1936, ۱۵).

When the accent on a word is retracted by *nesiga* onto a long vowel before two identical consonants, A marks the *shewa* on the first consonant as vocalic by *hatef patah* in virtually all cases, e.g.

- L: בָּזָע [bɔ:zazu: 'ba:az] ‘they took plunder’ (A: בָּזָע, Isa. 33.23)
- L: בְּזַהֲסָה [no:sasə: 'vo:] ‘it drove it on’ (A: נְזַהֲסָה, Isa. 59.19)
- L: וְסֻבְבוּ עִיר [vi:'so:vavu: 'fi:iR] ‘and they go around the city’ (A: וְסֻבְבוּ, Psa. 59.7)
- L: צְדָקָה [jo'ho:qaqu: 'sɛ:ðeq] ‘they decree what is just’ (A: צְדָקָה, Prov. 8.15)

In one case that is extant in A, however, a *shewa* is written rather than a *hatef patah*. The consonant following the retracted accent here is the sonorant *nun*:

- L: תִּתְבֹּונָנוּ בָּה [tit:bɔ:nnu bə] ‘you will understand it’ (A: תִּתְבֹּונָנוּ, Jer. 23.20)

It is clear from the vocalization in A of the majority of examples that the retraction of the accent did not cause the *shewa* to become silent.¹²¹ As noted above (§I.2.5.4.), in the sequence of rules of derivation, the retraction of an accent appears to have taken place after the syllable structure had been established. With regard to תִּתְבֹּונָנוּ (Jer. 23.20), in which A has a simple *shewa* sign, it is likely that here too the *shewa* was read as vocalic, since the *Treatise on the Shewa* states that the *shewa* on the first of two

¹²¹ This is contrary to the claim of Dotan in his notes to his edition of *Diqduqe ha-Te'amim* (1967, vol. 2, 192) that the *shewa* was silent in all these cases.

identical letters after the vowel *holem* was read in all cases without exception as vocalic (ed. Levy 1936, ۲۷-۲۸).

I.2.5.7.4. Long Vowel in a Prefixed Particle before Resh

According to the *Treatise on the Shewa* published by Levy (1936), if *resh* with *shewa* is the first letter of a noun and is preceded by a prefixed grammatical particle that is vocalized with *qameṣ* or *sere*, the *shewa* was pronounced vocalic. The relevant passage is as follows (Levy 1936, ۲۷-۲۸):

Rule concerning the *resh* that causes *shewa* to be vocalic:
 Whenever *resh* has *shewa* under it and is the second letter of the word, the *shewa* is always pronounced like *pataḥ*, as in **חֹזֶלֶלֶל** (Job 26.5 ‘the shades tremble’), and as in **מִרְכּוֹשׁ** (Psa. 1.4, etc. ‘the wicked’), (2 Chron. 35.7 ‘from the possession of’), **בִּרְכּוֹשׁ** (Ezra 1.6 ‘with goods’), **בִּרְחוֹב** (Gen. 19.2, etc. ‘in the street’), **בִּרְחוֹבוֹת** (Prov. 7.12, etc. ‘in the streets’), **בִּרְמָחָטִים** (Neh. 4.15 ‘[held] onto the spears’), **וּבִרְמָחָטִים** (Neh. 4.10 ‘and the spears’), and other cases. Know that this rule applies only when it [i.e. *resh*] is preceded by *qameṣ* or *sere* [lit. two dots]. If it occurs without these two signs (preceding it), it is never pronounced like *pataḥ*, as in **יַרְדֵּן** (Jud. 9.37 ‘coming down’), **מְרַקְבִּים** (Neh. 2.19 ‘rebelling’), **בִּרְחוֹב** (Ezra 10.9, etc. ‘in the open square of’), **בִּרְצֹן** (Esther 1.8 ‘according to the will of’), **לִרְצֹן** ‘for the will of’ (cf. Lev. 1.3), **מְרַדְּךָ** (1 Sam. 23.28, etc. ‘from pursuing’), **תְּרַנְּךָ** (Deut. 16.20, etc. ‘you shall pursue’). The whole of Scripture follows this rule. The words that I have just shown you, under which

the *shewa* is vocalic, are only nouns. Do not mix these with verbs and fall into error.¹²²

The intention of the statement that the *shewa* is pronounced as *pataḥ* (*yuftah*) is that the *shewa* was pronounced vocalic. This was the default pronunciation of vocalic *shewa* and was the pronunciation of most of the cases cited, e.g. הַרְשָׁעִים [hə:rɔʃ'ayim], מְרֻכּוֹשׁ [me:rɔku'ʃu:uʃ]. In some of the cases cited in the *Treatise on the Shewa*, however, the vocalic *shewa* occurs before a guttural and so one would expect that it would have had the quality of the vowel after the guttural, e.g. בָּרְחוֹבּ [bə:rɔħo:ov]. In some cases in the early manuscripts, the quality of the vocalic *shewa* before the guttural is made explicitly by a *hatef* sign, e.g. בָּרְהָטִים [bə:rɔħat'im] (L [BHS] Gen. 30.38 ‘in the troughs’).

The reading of the *shewa* as vocalic in these forms appears to have had a morphological motivation. It was a strategy to keep the morpheme boundary perceptually distinct, aligning the prosody with the morphology by creating a foot boundary between the grammatical affix and the stem of the word:

הָכָ. (*)	רָא. (.	סָכָ. *)	'יְמִ. (*)	יִם .)
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¹²² שרט אלריש אלדי יחרץ אלשווא: כל ריש תחתה שווא פאלחרף אלתאני מן אלכלמה
יפתח אלשווא לעולם ממל הרכאים יהוללו הרשעים וממל מרכוש ברוחוב ברכחובות
ברמחים והרמחים גוירהמא. וועלם אן שרטהא אן יכון קבלהא קמץ או שתי נקודות פקט.
ונמא אן כאן בגיר הדין אלסימני פלא יפתח אבדא ממל יוזדים מוזדים ברוחב ברכזון
לרכזון מרדזף תרדזף. עלי הדא אלשרט כל אלמקרה והדא אלכלאנס אלדי אורינאך מן
קבלה אן אלשווא יתחרץ תחתה הוא אסמא פקט פלא תכלט מעה אלאפעעל פתבעט.

In the same phonological conditions, i.e. *resh* preceded by long *qames* or *sere*, in other contexts the *shewa* was generally silent and the *resh* footed with the preceding syllable, e.g. in the following verbal forms (feet indicated by round brackets):

יָרְדוּ [(jɔ:.ɔR).('ðu:)] ‘they went down’ (Exod. 15.5)

יָרֹדוּ [(je:.eR).('ðu:)] ‘they (m) will come down’ (1 Sam. 13.12)

יָזְרֹדִים [(jo:.oR).('ði:.im)] ‘coming down (mpl)’ (Jud. 9.37)

The statement at the end of the passage from the *Treatise on the Shewa* implies that the reading of the *shewa* as vocalic after a prefixed grammatical particle only applied to nouns, suggesting that in forms such as מִרְאַת (Isa. 21.3 ‘from seeing’), מִרְעָשׂות (Ezek. 34.10 ‘from feeding’), מִרְקָה (Gen. 46.3 ‘from going down’) the *shewa* would be silent, viz. [me:eR'ʔo:oθ], [me:eR'ʕo:oθ], [me:eR'ðɔ:)]. In the Hebrew Masoretic treatise §11 in Baer and Strack’s (1879) corpus, however, it is stated that the *shewa* in מִרְאַת (Isa. 21.3) and מִרְעָשׂות (Ezek. 34.10) is read vocalic.

The strategy of reading the *shewa* as vocalic to mark the morpheme boundary only applied to cases where the particle had a vowel phoneme with inherent length, i.e. long *qames* /ɔ/ or long *sere* /ē/. In such cases, the reading of an epenthetic after the *resh* would be achieved by syllabifying the *resh* in the onset of the initial syllable of the noun, e.g. מִרְכּוֹשׁ /mē.rχū.ʃ/ [me:-rā.'χu:.uʃ]. When the particle had a short vowel phoneme, e.g. בִּרְחוֹב, the syllabification of the *resh* in the onset would require compensatory lengthening by the replication of the short pho-

neme to fill the slot of the *resh*, i.e. /bir.ḥō.v/ > /biī.r̠hō.v/. Evidently, there was a constraint against this additional adjustment of the syllable structure.

The *Diqduqe ha-Te'amim* (ed. Dotan 1967, §20) includes some cases of constructions consisting of a prefixed particle with *qameš* or *ṣere* before *resh* as examples of the practice of the Masorete Pinhas Rosh ha-Yeshiva to use *hatef patah* to indicate that a *shewa* on a non-guttural consonant was vocalic, viz.

מִרְפִּידִים ‘from Rephidim’ (L [BHS]: מִרְפִּידִים, Exod. 19.2)

הַרְוֹתָה ‘the respite’ (L [BHS]: הַרְוֹתָה, Exod. 8.11)

הַרְבִּיעֵי ‘the fourth’ (L [BHS]: הַרְבִּיעֵי, Gen. 2.14, etc.)

1 הַרְכּוֹשׁ ‘the property’ (L [BHS]: הַרְכּוֹשׁ Num. 16.32,
Chron. 27.31, 2 Chron. 21.17)

הַרְשָׁעִים ‘the bad ones’ (L [BHS]: הַרְשָׁעִים, Exod. 9.27, etc.)

With the exception of *הַרְבִּישׁ* (Num. 16.32), L vocalizes all cases of *resh* in these constructions with a simple *shewa*. Even in Num. 16.32 the *hatef patah* is misshapen and the *patah* appears to have been added during a later revision. As one would expect, A marks a *hatef patah* in many cases to indicate explicitly that the *shewa* was vocalic. The extant examples include:

הַרְבִּיעִית ‘the fourth’ (L [BHS]: הַרְבִּיעִית, 1 Kings 6.37)

וְהַרְכָּסִים ‘and the rough places’ (L [BHS]: וְהַרְכָּסִים Isa. 40.4)

וְהַרְשָׁעִים ‘and the wicked’ (L [BHS]: וְהַרְשָׁעִים Isa. 57.20)

בְּרַשְׁעִים ‘(do not envy) the wicked’ (L [BHS]: בְּרַשְׁעִים, Prov. 24.19)

הַרְשָׁעָה ‘the evil (way)’ (L [BHS]: הַרְשָׁעָה, Ezek. 3.18)

לִרְזֹוּה ‘to relief’ (L [BHS]: לִרְזֹוּה, Psa. 66.12)

הַרְבָּוֹשׁ ‘the property’ (L [BHS]: הַרְבָּוֹשׁ, 1 Chron. 27.31)

הַרְכּוֹשׁ ‘the property’ (L [BHS]: הַרְכּוֹשׁ, 2 Chron. 21.17)

מִרְכּוֹשׁ ‘from the property of’ (L [BHS]: מִרְכּוֹשׁ, 2 Chron. 35.7)

It is significant to note, however, that a proportionally larger number of cases of these constructions are vocalized in A with simple *shewa*. Some selected examples include:

הַרְבִּיעֵי ‘the fourth’ (Josh. 19.17 + 20 other cases)

בְּרַבִּיעֵי ‘on the fourth’ (Ezek. 1.1)

הַרְבִּיעָה ‘the fourth’ (1 Kings 6.1, + 8 other cases)

הַרְשָׁעִים ‘the evil ones’ (Zeph. 1.3 + 3 other cases)

לִרְשָׁעִים (Isa. 48.22 + 1 other case)

מִרְשָׁעִים ‘from wicked ones’ (1 Sam. 24.14 + 5)

These include cases in which a preposition is attached to a verbal infinitive and so, judging by the statement in the *Treatise on the Shewa*, one would expect the *shewa* to be read as silent:

מְרֹאֹת (Isa. 21.3 + five other cases)

מְרֻעֹות (Ezek. 34.10)

It is possible that the use of simple *shewa* in A before many nominal forms is due to inconsistency of the marking of *hatef patah* on non-guttural consonants. There are also a number of cases in A in which a vocalic *shewa* would have had the quality

of [o] before guttural with *holem*. In such cases, there was no available *hatef* sign to represent this quality, e.g.

הַרְחֹקִים ‘the distant ones’ (Isa. 46.12, 66.19)

וּבָרֶכֶתּוֹת ‘and in the squares’ (Cant. 3.2)

מִרְקָטָב ‘from the square of’ (2 Sam. 21.12)

Some of the Karaite transcriptions use the Arabic *sukūn* symbol to mark explicitly that a *shewa* is silent. It is significant that examples can be found in the manuscripts of the *sukūn* marked on the transcription of *resh* where, according to the rule in the *Treatise on the Shewa* just described, one would expect the *shewa* to be vocalic, e.g.

وْبَارْحُوبُوتْ [wuvvɔ:ɔRħħo:vo:oθ] (BL Or 2554 fol. 56v, 9 | L

[BHS]: וּבָרֶכֶתּוֹת Cant. 3.2 ‘and in the squares’)

This indicates that in some streams of the Tiberian tradition the *shewa* was not consistently pronounced vocalic after a long vowel of a prefixed particle.

I.2.5.7.5. *Shewa in Inflections of Specific Verbal Roots*

A *shewa* on the medial radical of the verbal roots שׁ ‘to drive out’, לׁ ‘to eat’, אֵבֶד ‘to bless’, דׁ ‘to go down’, and הֵלֶךְ ‘to go’ is vocalic after a long vowel in certain circumstances, according to Ben Asher. In some of the cases where Ben Asher read the *shewa* as vocalic, Ben Naftali read it as silent.

In forms with *shewa* on the *resh* following a long vowel from the root בָּרַךְ ‘to bless’,¹²³ if the accent is on the *bet*, the *shewa* is silent. This applies to cases where the accent has been retracted by *nesiga*, e.g.

- L: בָּרוּךְ יְהוָה וְתִבְרְכֻוּ [vihɪθ' bə:ʁɔχu: 'vo:] ‘they will bless themselves in him’ (A: וְתִבְרְכֻוּ, Jer. 4.2)
- L: בָּרוּךְ יְהוָה וְתִבְרְכֻוּ [vijɪθ' bə:ʁɔχu: 'vo:] ‘and may they bless themselves in him’ (A: וְתִבְרְכֻוּ, Psa. 72.17)
- L: בָּרוּךְ יְהוָה בָּרְכֵנוּ [bə:ʁɔχu: bə:ʁe:ni] ‘bless!’ (A: בָּרְכֵנוּ, 1 Chron. 29.20)

If, however, the accent is on the *kaf*, the *shewa* after a long vowel is vocalic.¹²⁴ The manuscript A regularly indicates the vocalic realization by a *haṭef pataḥ* sign and this is frequently the case also in L, e.g.

- L: בָּרְכָנִי [bə:ʁə:na'χe:ni:] ‘bless (ms) me!’ (Gen. 27.34)
- L: בָּרְכֵי יְהוָה [bə:ʁe:ni'χu: 'vo:] ‘bless the Lord’ (A: בָּרְכֵי יְהוָה, Psa. 103.20)
- L: בְּעֵבֶר תִּבְרְכֵנִי נְפָשָׁךְ [tavɔ:ʁa'χa:anni:] ‘in order that your soul blesses me’ (Gen. 27.19)
- L: בָּרְכֵי יְהוָה [bə:ʁe:ni'χu: 'vo:] ‘bless the Lord’ (Jud. 5.2)

¹²³ For this rule see *Diqduqe ha-Te'amim* (ed. Dotan 1967, §21), *Treatise on the Shewa* (ed. Levy, 1936, ל-ט).

¹²⁴ According to *Diqduqe ha-Te'amim* (ed. Dotan, 1967, §21) the only exception in the Bible is the Aramaic form בָּרְכָת ‘I blessed’ (Daniel 4.31), in which the accent falls on the syllable beginning with the *kaf* but the *shewa* is silent.

The marking of *hatef patah* is not completely regular in L and, moreover, many cases seem to be corrected from an original simple *shewa* sign. Other manuscripts written by the scribe of L, Samuel ben Jacob, mark the *hatef patah* more regularly, such as the manuscript known as L17:¹²⁵

- L: וְבָרְכֶּךָ [wuvɔ:ra'χu:] ‘and bless’ (L17, A בָּרְכֶּךָ, 2 Sam. 21.3)
- L: לֹא תִּבְרַכֵּנִי [θavɔ:ra'χe:nu:] ‘do not bless him’ (L17, A תִּבְרַכֵּנִי, 2 Kings 4.29)

The *shewa* was vocalic also when a secondary accent occurred on the syllable beginning with the *bet*. This is the case, for example, in the following form, although it is written with a simple *shewa* in L:¹²⁶

- L: מְבָרֵךְךָ [ma,va:ra'χe:χɔ:] ‘and I will bless those that bless you’ (Gen. 12.3)

According to Masoretic sources,¹²⁷ Ben Asher read a *shewa* on the *resh* in forms from the root נָגַר “to drive out” as vocalic

¹²⁵ The manuscript in the I Firkovitch collection labelled L17 by Yeivin (1968) has recently been identified by Phillips (2017) as being written by Samuel ben Jacob. See Phillips (2020) for a study of distribution of *hatef patah* in L, L17 and other manuscripts attributed to Samuel ben Jacob.

¹²⁶ This is confirmed by *Hidāyat al-Qāri'*, which states that נָגַר ‘has two accents and the *shewa* is vocalic’ (Long version, edition in vol. 2 of this book, §II.L.3.2.7.).

¹²⁷ Baer and Strack (ed. 1879, §52), *Kitāb al-Khilaf* (ed. Lipschütz 1965, 17).

when the third radical has *segol* before a suffix with a geminate *nun*, i.e. in the following three forms:

L: לֹא אָגַרְשֵׁנּוּ [?aRa'ʃe:nnu:] 'I will not drive them out' (Exod. 23.29)

L: אָגַרְשֵׁנּוּ [aRa'ʃe:n.nu:] 'I will drive them out' (Exod. 23.30)

L: וְאָגַרְשֵׁנּוּ [?aRa'ʃe:en.nu:] 'and I will drive them out' (Num. 22.6)

Elsewhere Ben Asher read a *shewa* on the *resh* of forms from this root as silent, e.g.

L: וַיִּגְרֹשׁוּ [vajRa'ʃu:] 'and they drove out' (Jud. 11.2)

L: גַּרְשֹׁנִי [ke:er'ʃu:ni:] 'they have driven me out' (1 Sam. 26.19)

There was one exception, in which Ben Asher read the *shewa* as vocalic (indicated by *hatef patah* in L and A):

L, A: וַיִּגְרֹשֵׁהוּ [va:jRa'ʃe:hu:] 'and he drove him out' (Psa. 34.1)

By contrast, Ben Naftali read the *shewa* in all forms of the root גַּרְשָׁנָה as silent.¹²⁸

The same applies to the root נַבְּאָן.¹²⁹ Ben Asher read the *shewa* as vocalic in forms in which the third radical has *segol* before a suffix with geminate *nun*. These amount to 24 cases in total in the Hebrew Bible. All cases that are extant in A are

¹²⁸ *Kitāb al-Khilaf* (ed. Lipschütz 1965, 17, ג, מה).

¹²⁹ *Diqduqe ha-Te'amim* (ed. Dotan 1967, §22), *Treatise on the Shewa* (ed. Levy, 1936, נ).

vocalized with a *hatef patah*. In L the marking of *hatef patah* is not systematic. The *hatef* sign is found in only 14 cases out of 24, and in some of these the *hatef* appears to be a later modification of an original simple *shewa* sign:¹³⁰

L: תְּאַכְלָנָה [t^ho:rχa:lε:enno:] ‘you shall eat it’ (Gen. 3.17)

L: יְאַכְלָנָה [jorχa:lε:enno:] ‘he may eat it’ (Lev. 6.11)

L: תְּאַכְלָנוּ [t^ho:rχa:lε:ennu:] ‘you may eat it’ (Num. 18.10)

L, A: תְּאַכְלָנָה [t^ho:rχa:lε:enno:] ‘you (ms) shall eat it’ (Ezek. 4.12)

Examples from L with simple *shewa*:

L: יְאַכְלָנוּ [jorχa:lε:ennu:] ‘he may eat it’ (Lev. 7.6)

L: וְנִאֲכַלְנָה [vanorχa:lε:ennu:] ‘that we may eat him’ (A: וְנִאֲכַלְנָה, 2 Kings 6.28)

L: וְנִאֲכַלְנָה [vanorχa:lε:ennu:] ‘that we may eat him’ (A: וְנִאֲכַלְנָה, 2 Kings 6.29)

In other contexts, Ben Asher read the *shewa* as silent. In L and the extant portions of A a simple *shewa* sign is regularly marked in such cases:

L: תְּאַכְלֵוּ [θo:oχ'lu:] ‘you shall [not] eat’ (Deut. 14.21)

L: תְּאַכְלֵוּן [t^ho:oχ'lu:.un] ‘you shall [not] eat’ (Num. 11.19)

L, A: וְנִאֲכַלֵּוּ [vajjo:oχ'lu:] ‘and they ate’ (Jos. 5.11)

L, A: יְאַכְלֵוּ [jo:oχ'lu:] ‘they will eat’ (1 Kings 21.23)

¹³⁰ Cf. Phillips (2020), who notes that simple *shewa* is marked in these forms in the extant portions of other manuscripts written by Samuel ben Jacob, the scribe of L.

The sources indicate that also in the following form, where the *lamed* has *segol* but is not followed by a geminated *nun*, Ben Asher read the *shewa* as silent:

L: אֲזֶבְלִיהָ [?o:oχ'lə:b:hɔ:] ‘those (m) who eat it’ (Ecc. 5.10)

By contrast, Ben Naftali read the *shewa* as silent in all forms of the root לְבַל, including those that are followed by a suffix with *segol* and geminated *nun*.¹³¹

According to *Diqduqe ha-Te'amim* (ed. Dotan 1967, §25), when forms from the roots יַ'ר ‘to come down’ and הַלְ ‘to go’ are in *dehiq* constructions (§I.2.8.1.2.) and are followed by a word beginning with a consonant with *dagesh*, then a *shewa* on the medial radical is vocalic. In L all of the cases are vocalized with *hatef patah*, but most of these are the result of later corrections from an original simple *shewa* sign,¹³² e.g.

L: אָרַדְהָנָא [?e:rədəh-nɔ:] ‘I will go down’ (Gen. 18.21)

L: אָלַכְהָנָא [?'e:la.χɔ:nɔ:] ‘let me go’ (Exod. 4.18)¹³³

L: אָלַכְהָנָא [ne:laχɔ:nɔ:] ‘let us go’ (Exod. 3.18)

In the extant portions of A and in L17 (written by the scribe of L) they are regularly vocalized with *hatef patah*, e.g.

¹³¹ *Kitāb al-Khilaf* (ed. Lipschütz 1965, 17, 彖). Phillips (2020) suggests that the frequent lack of *hatef patah* in this verb in L where Ben Asher read the *shewa* as vocalic may reflect that the scribe of L intended the vocalization to reflect a tradition corresponding to that of Ben Naftali.

¹³² Dotan (1967, 276), Phillips (2020).

¹³³ In BHS the word is vocalized אָלַכְהָנָא according to the vocalization of the first hand in the manuscript.

- L, A: וְגַלְכָה־לָנוּ (1 Sam. 26.11)
- L, A: גַלְכָה־גַא (2 Kings 6.2)
- L, A: אֲלֹכֶה נָא ‘I shall go’ (Jer. 40.15)¹³⁴
- L, A, L17: גַלְכָה שָׁם ‘let us go there’ (1 Sam. 9.6)
- L, A, L17: אֲלֹכֶה נָא ‘I shall go’ (אֲלֹכֶה נָא, 2 Sam. 15.7)

Diqduqe ha-Te‘amim only mentions these two verbs in this rule. Saadya, however, in his *Kutub al-Lugha* gives the general rule that *shewa* after a long vowel is always vocalic when the vowel two syllables after it is stressed and is preceded by *dagesh* (ed. Dotan 1997, 464–69). In addition to forms of the verb הָלַךְ, he cites the following examples:

- L: נִירְשָׁה לָנוּ [nirša:nu:] ‘let us take possessions for ourselves’ (A: נִירְשָׁה, Psa. 83.13)
- L: נוֹתְרָה־בָּה [no:θar'-vbbca:ch] ‘there is left in it’ (A: נֹתְרָה-בָּה, Ezek. 14.22)
- L: לֹוּ יְרֻעָה [lo:yu:ra:] ‘[his soul] trembled’ (A: יְרֻעָה, Isa. 15.4)

Only the first of these examples is vocalized with *hatef patah* in A. Saadya also cites the following Biblical Aramaic form as a case that follows the rule and so has vocalic *shewa* after the long vowel. This form is not a *dehiq* construction, but has a *dagesh* in a suffix:

¹³⁴ In BHS the word is vocalized אֲלֹכֶה according to the vocalization of the first hand in the manuscript.

L: יְשִׁיבָנָךְ [jaʃe:zavin] 'he will deliver you' (Dan. 6.17)

There are numerous other cases attested in the Hebrew Bible with the structure that according to Saadya's formulation of the rule would be expected to have a vocalic *shewa*, although he does not refer to them explicitly. In all such cases, both L and A have a simple *shewa* sign, suggesting that these manuscripts reflect a reading with silent *shewa*, e.g.

L, A: עֲשַׂקְהֶלְיָ 'it has oppressed me' (Isa. 38.14)

L, A: עֲשַׂתְהָזָאתָ 'it did that' (Isa. 41.20)

L, A: נְשֻׁבָה בּוֹ 'it breathed upon it' (Isa. 40.7)

L, A: עֲרַבָּה לֵי 'it was pleasant to me' (Jer. 31.26)

Some Karaite transcriptions explicitly mark the *shewa* as silent in such forms by an Arabic *sukūn* sign, e.g.

عَاسْنَا زُوْث (BL Or 2548 fol. 50v, 7 | L [BHS]: עֲשַׂתְהָזָאתָ Isa. 41.20 'it did')

The manuscripts L and A sporadically mark a *hatef patah* in place of *shewa* after a long vowel in forms that are not mentioned in the Masoretic sources, e.g.

L, A: אָקְרַבְנָא 'I would approach him' (Job 31.37)

L, A: וְתִמְרוֹת 'columns' (Joel 3.3)

A: אָזְולָת דַּ 'the power has gone' (L [BHS]: אָזְלָת דַּ, Deut. 32.36)

In most cases where the *shewa* is vocalic in the forms cited in this section, one of the consonants involved is a sonorant *r* /r/ or *l* /l/. The general rule given by Saadya, however, would

potentially include cases where the sequence of consonants does not include a sonorant, and he indeed cites one such example from Biblical Aramaic (ישִׁבְנָךְ Dan. 6.17). The consonants in potential contact here, nevertheless, are still relatively weak (fricatives). The distribution of *hatef patah* in A, on the other hand, appears to indicate that *shewa* was frequently read as silent in the context that Saadya claims would have a vocalic *shewa*, including several cases where one of the consonants is a sonorant.

There was variation with regard to the reading of the *shewa* in these contexts in various streams of the Tiberian tradition, as shown, for example, by the differences between Ben Asher and Ben Naftali in this regard that are referred to in *Kitāb al-Khilaf*. Saadya presents a type of reading in which the *shewa* was more regularly read as vocalic than in the traditions of Ben Asher and Ben Naftali and the evidence reflected by the early Bible codices.

The result of the reading of the *shewa* as vocalic was to break the contact between two consonants. This would have ensured that each consonant was flanked by vowels. The motivation for this may have been to increase the salience of the sonorants, which were weak consonants and vulnerable to loss or inadequate realization in certain circumstances.

In many of the forms discussed above, the *shewa* is read as vocalic where the form in question contains a geminated consonant in a suffix (e.g. תַּאכְלֵנָה Gen. 3.17) or a following word to which the first word is bound prosodically by *maqqef* or *dehqiq* (גָּלְכָה־נָא 2 Kings 6.2, אֶלְכָה נָא Exod. 4.18). This may have induced a quicker reading of the syllables and so increased the potential weakness of the sonorants. The *Hidāyat al-Qāri'* refers to the

quick reading and compression of vowels in constructions with *dagesh* associated with *dehqiq* (see §I.2.8.1.2.). Furthermore, long vowels in closed syllables in words read with a quick tempo were particularly vulnerable to contract due to their suboptimal structure. In the Karaite transcriptions, for example, a long vowel in a closed syllable in a word bound by maqqef to what follows is sometimes transcribed without a *mater lectionis*, reflecting the shortening of the vowel, e.g.

הָלֵךְ (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הָלֵךְ Psa.

111.3 ‘majesty’)

הַמִּן (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הַמִּן Psa.

112.3 ‘wealth’)

This potential contraction would have been prevented by reading the *shewa* as vocalic.

In forms with suffixes such as תְּאַבְּלֵנָה it could be hypothesized that the prolonged timing of the gemination resulted in a corresponding quickening of reading of the rest of the word.

With regard to the rules relating to the reading of forms from the root בְּרַךְ, in a form without the stress before the *resh* such as בְּרַכְנוּ (Gen. 27.34) the *resh* may have been weaker than in a form in which the stress is placed before the *resh*, such as בְּרַכְתָּנוּ (Jer. 4.2), and this motivated a reading with vocalic *shewa* that made the sonorant *resh* more salient in the first type of form.

I.2.5.7.6. Eliphelehu

In A a *hatef patah* is written on the *pe* after a long vowel in the proper name אֵלִיָּפָתָח [vε:?'εli:fa'le:hu:] ‘and ‘Eliphelehu’ (לְאֵלִיָּפָתָח, 1 Chron. 15.18). This indicates that the *shewa* was read as vocalic although it is preceded by a long vowel. The etymology of this name is not fully clear (possibly: ‘God distinguishes him’ < אל + פָתָח). The vocalic *shewa* evidently reflects the interpretation of the name as a compound with a morphological division after the initial element אֵלִי.

I.2.5.8. Vocalic *Shewa* after Short Vowel Phonemes

A *shewa* in the middle of a word on a consonant without *dagesh* after a short vowel is normally silent and syllabified with the consonant that precedes it, e.g.,

מַמְרֵא [mam.'re:] (Gen. 13.18) ‘Mamre’

In some circumstances, however, a consonant with *shewa* after a short vowel is syllabified in the onset of the following syllable. In such cases, the preceding short vowel is lengthened in compensation. This applies to the following cases.

I.2.5.8.1. The Definite Article

When the definite article is attached to a word beginning with the sonorant consonant *mem* with *shewa*, the gemination of the *mem* expected after the article is often lost, but the *mem* is syllabified with what follows, e.g.

הַמִּדְבָּר [ha:maðab'be:er] ‘the one speaking’ (Gen. 45.12)

As can be seen, the *patah* of the article is lengthened by compensation. This can be analysed as the replication of the short /a/ phoneme to take the place of /m/, i.e.

/ham.mðab.bē.r/ > /haa.mðab.bē.r/

This compensatory lengthening is regularly marked by a *ga'ya* sign in the manuscripts. Yeivin (1980, 257–264) refers to the *ga'ya* in his context as a ‘phonetic *ga'ya*’, i.e. it reflects lengthening for the sake of resyllabification rather than musical cantillation. A *patah* in an unstressed syllable followed by *shewa* would otherwise be read as a short vowel in a closed syllable. As with the case of a *shewa* on *resh* after the article (§I.2.5.7.4.), here also the motivation for this syllabification is morphological. Placing the *mem* in the syllable following that of the article creates a prosodic division between the article and the stem of the word following it. The compensatory lengthening, moreover, makes the article bimoraic and so brings it into line with its normal weight in other contexts, i.e. [hVC] or [hVV].

This resyllabification and compensatory lengthening do not take place in all cases where the gemination in *mem* is lost after the article. According to *Hidāyat al-Qāri'*, the length of the word is a conditioning factor:

In words containing not more than five letters the *shewa* is vocalic, as in *הַמְסֻפֵּת תְּרוֹמֶה* ‘he who is impoverished in respect to offering’ (Isa. 40.20), *הַמִּדְבָּר* ‘the one speaking’ (Gen. 45.12, etc.), except for one case, namely *הַמְשֻׁגָּעַ הַזֶּה* ‘this madman’ (2 Kings 9.11).¹³⁵

¹³⁵ Long version, edition in vol. 2 of this book, §II.L.2.13.1.

In all such words in L a *ga'ya* occurs on the *patah* after the *he*, with the exception of **הַמְשֻׁעָם** (2 Kings 9.11). In A the vocalic *shewa* in such forms with an article is represented by *hatef patah*, e.g. **הַמִּזְבֵּחַ** (Isa. 40.20), but in **הַמְשֻׁעָם** (2 Kings 9.11) simple *shewa* is marked, reflecting the fact that it was read as silent.

Hidāyat al-Qāri' was referring to cases where the article is not preceded by a prefixed preposition. There are more exceptions among forms that have such prepositions before the article, e.g.

L, A: **בְּמַצֵּד** ‘in the stronghold’ (1 Chron. 11.7)

L, A: **לְמַצֵּד** ‘to the stronghold’ (1 Chron. 12.9)

L, A: **לְמַנְצֵחַ** ‘to the choirmaster’ (Psa. 4.1, and *passim*)

L, A: **לְקֹנִי** ‘for destiny’ (Isa. 65.11)

As in **הַמְשֻׁעָם**, the *shewa* in these words without *ga'ya* was silent. The passage in *Hidāyat al-Qāri'* continues:

As for words beginning with *he* and *mem* that have more than five letters, ... when the accent is on the fourth letter, the *shewa* is vocalic, for example, **הַמְחַקִּים** ‘those who wait’ (Job 3.21), **הַמְנֻדִּים**, ‘those who remove’ (Amos 6.3), and the like.¹³⁶

Again A has *hatef patah* in the cited words (**הַמְחַקִּים**, **הַמְנֻדִּים**). In the medieval manuscripts words fitting the description in this passage have *ga'ya* and vocalic *shewa* (indicated by *hatef patah* in the extant sections of A), with only a few exceptions, e.g. **הַמִּילְאָת**

¹³⁶ Long version, edition in vol. 2 of this book, §II.L.2.13.1.

'the midwife' (Gen. 35.17) and, if the vowel letter is ignored, 'the singer' (L and A, 1 Chron. 6.18), which do not have *ga'ya* and so the *shewa* was silent.

With regard to longer words, *Hidāyat al-Qāri'* states the following:

As for words beginning with *he* and *mem* that have more than five letters, the rule concerning these is that if the accent is on the fifth letter or later, the *shewa* is silent, for example *הַמְּדֹבְּרִים* 'those who speak' (Exod. 6.27), *הַמְּאֻרְךִּים* 'those that curse' (Num. 5.19), apart from some exceptions that deviate from this rule, for example *הַמְּבָקְשִׁים* 'those who seek' (Exod. 4.19, etc.).¹³⁷

In a form such as *הַמְּדֹבְּרִים* the *ga'ya* reflects the lengthening of the *patah* after the *he* but the *shewa* on the *mem* is silent. The key factor that conditions the reading of the *shewa* as silent emerges more clearly from *Diqduqe ha-Te'amim* (ed. Dotan 1967, §14), where a more detailed list of forms with silent *shewa* on the *mem* is given. The full list of these forms with silent *shewa* is as follows:¹³⁸

- L: *הַמְּדֹבְּרִים* [ha·mðabba'ri:im] 'those who speak' (Exod. 6.27)
- L: *הַמִּלְאָדָת* [ha·mjalla'ðo:oθ] 'the midwives' (Exod. 1.17)
- L, A: *הַמְזֻמְרֹת* [ha·mzamma'rø:oθ] 'the snuffers' (2 Kings 25.14),
הַמְזֻמְרֹות (Jer. 52.18)

¹³⁷ Long version, edition in vol. 2 of this book, §II.L.2.13.1.

¹³⁸ A similar list is cited in the treatise on the *shewa* (ed. Levy 1936, כט).

- L, A: **הַמְקֻטָּרִים** [ha·mqatt^ra'ri:im] ‘those who burn incense’ (2 Kings 23.5)
- L: **וְהַמְהֻלִּים** [va,ha·mha:la'li:im] ‘those who praise’ (A, 2 Chron. 23.12)
- L, A: **הַמְבָשְׁלִים** [ha·mvassja'li:im] ‘those who cook’ (Ezek. 46.24)
- L, A: **הַמְשֻׁחָקוֹת** [ha·msa:ha'qo:oθ] ‘the ones (fpl) playing’ (1 Sam. 18.7)
- L, A: **הַמְחַלֵּל** [ha·mħul'l] ‘the one profaned’ (Ezek. 36.23)
- L, A: **הַמְבָשָׂרוֹת** [ha·mvassa'ro:oθ] ‘those who bear tidings’ (Psa. 68.12)
- L: **הַמְעִשְׁרִים** [ha·mʃassar'i:im] ‘those who collect tithes’ (Neh. 10.38)
- L: **הַמְאָרְרִים** [ha·m?ɔ:ra'i:im] ‘those that curse’ (Num. 5.19)
- L: **הַמְשֻׁרָּגִים** [ha·mʃo:ra'i:im] ‘the singers’ (Ezra 2.41)
- L, A: **הַמְצַפְּפִים** [ha·ms^rafs'a'fi:im] ‘those who chirp’ (Isa. 8.19)
- L, A: **הַמִּישְׁרָרִים** [ha·mjassja'ri:im] ‘those who make straight’ (Prov. 9.15)
- L, A: **הַמְשֻׁקֶּה** [ha·mʃukke:] ‘the oppressed’ (Isa. 23.12)
- L, A: **הַמְקֻבְּרִים** [ha·mqabba'r'i:im] ‘those who bury’ (Ezek. 39.15)
- L: **הַמְהֻלְּכִים** [ha·mhalla'χi:im] ‘those who move’ (Ecc. 4.15)
- L, A: **הַמְקֻטָּרוֹת** [ha·mqatt^ra'ro:oθ] ‘(altars) for burning incense’ (2 Chron. 30.14)

As can be seen, A, in the portions that are extant, always marks the *mem* with a simple *shewa* sign.

The vast majority of the forms in this list have the syllable structure that is associated with the so-called minor *ga'ya*. This is a musical secondary stress that occurs predominantly in words with disjunctive accents on a short vowel in a closed syllable. It occurs predominantly on a syllable that is separated from the stressed syllable by another closed syllable, which in turn is followed by vocal *shewa* or by an open syllable followed by a *hatef* with an identical quality. These syllabic patterns may be represented thus: מִתְקַטְּלִים, מִתְפַּלְּלִים and מִתְפַּעֲלִים. Examples of each of these are:

הָרְמֵלִית [ha·kk^har·ma'lī:iθ] ‘the woman of Carmel’ (1 Sam. 27.3)

נְתַחֲכֹמָה [ni·θhakk^ha'mɔ:] ‘let us deal wisely’ (Exod. 1.10)

הַמְּמֻנָה [ha·mma:ha'nε:] ‘the camp’ (Gen. 50.9)

מְשַׁתְּחִוִים [mi·ʃt^ha:ha'vexim] ‘prostrating (mpl) themselves’ (Gen. 37.9).¹³⁹

There is evidence that the duration of the vowel lengthened by minor *ga'ya* was less than that of a long vowel in an open syllable or of a vowel in a syllable with the main stress (§I.2.8.2.). It appears not to have been fully bimoraic and did not induce the insertion of an epenthetic vowel or resyllabification of the consonant in the coda with the next syllable. For this reason, the vowel is transcribed with the IPA symbol for half-long [CV·C].

¹³⁹ Yeivin (1980, 244–245). For more details concerning the minor *ga'ya* see §I.2.8.2.2.

Minor *ga'ya* also occurs less consistently on a range of other closely related structures, e.g.

מִתְפָּעַלִים הַכָּנְעָנִית (with vocalic *shewa* additional to the pattern) ‘the Canaanite woman’ (1 Chron. 2.3)

וַיַּחֲמֹן (with a vowel of different quality before the *hatef*) ‘and they fought’ (Josh. 10.36)

It very rarely occurs on a syllable that is separated from the accent by only one syllable, e.g.

נִמְצָא־לִשְׁר ‘a conspiracy is found’ (Jer. 11.9).

Most of the cases where the *shewa* on the *mem* is silent after the *ga'ya* that are cited in *Diqduqe ha-Te'amim* have the syllabic patterns that are suitable for minor *ga'ya*, e.g. המצְפִּים [ha'm-s'afs'a'fi'im] ‘those who chirp’ (Isa. 8.19), המדְבָּרִיט [ha'mðab-ba'r'i'im] ‘those who speak’ (Exod. 6.27) and as המשְׁחַקּוֹת [ha'm-sa:ha'qo:oθ] ‘the ones (fpl) playing’ (1 Sam. 18.7). In such cases, therefore, it can be assumed that the *ga'ya* is the musical minor *ga'ya*. The reading with musical minor *ga'ya* in such forms evidently outranked the morphologically motivated syllabification that conditioned the reading of the *shewa* as vocalic.

Two of the forms cited by *Diqduqe ha-Te'amim* as cases with silent *shewa* under the *mem* have conjunctive accents, viz. המזְמֻרֹת (L and A) ‘the snuffers’ (2 Kings 25.14), המקְטֻרִים (L and A) ‘those who burn incense’ (2 Kings 23.5). As remarked, minor *ga'ya* does not commonly occur on forms with conjunctive accents and so they must be considered to be not fully optimal for it. Some of the cited forms, moreover, have syllable structures that are not fully optimal for minor *ga'ya*, e.g. המְאַרְרִים (L) ‘those that curse’

(Num. 5.19), **הַמִּשְׁרָקִים** (L) ‘the singers’ (Ezra 2.41), in which the vowel in the second open syllable is not of the same quality as the following vocalic *shewa*. Two of the cited cases have a syllable structure that deviates more radically from the one that is optimal for minor *ga'ya*, viz. the *pu'al* participles **הַנֹּעֲשֶׂה** (L and A) ‘the oppressed’ (Isa. 23.12) and **הַמַּחְלָלֶל** (L and A) ‘the one profaned’ (L and A, Ezek. 36.23). By contrast, the *pu'al* participle **הַמְּקֻדְשֶׁשׁ** ‘the consecrated’ (A: **הַמְּקֻדָּשָׁה**, Ezek. 48.11), which is identical in syllable structure to **הַמַּחְלָלֶל**, has a vocalic *shewa*.

Forms cited by *Diqduqe ha-Te'amim* as cases that have vocalic *shewa* include a construction with a disjunctive accent that has the main accent on the fifth letter but has a syllable structure that is not optimal for minor *ga'ya*, viz. **הַמְבַקְשִׁים** (L) ‘those who seek’ (Exod. 4.19), in which the *shewa* on the *qof* is silent. An analogous case is **וְהַמְמַלְאִים** (L) ‘and those who fill’ (A: **וְהַמְמַלְאִים**, Isa. 65.11). The cited forms with vocalic *shewa*, confirmed by the occurrence of *hatef patah* in the extant portions of A, include also cases that have a syllable structure optimal for minor *ga'ya* but have a conjunctive accent, which is not optimal for minor *ga'ya*, e.g.

L: **הַמְדִבְרִים** ‘those who speak’ (A: **הַמְדִבְרִים** 2 Chron. 33.18)

L: **הַמְשִׁלְחוֹת** ‘those that send’ (A: **הַמְשִׁלְחוֹת** 2 Chron. 32.31)

L, A: **הַמַּתְּעָבִים** ‘the ones abhorring’ (Mic. 3.9)

Also cited is **הַמַּצְרָעִים** (L) ‘the lepers’ (A: **הַמַּצְרָעִים** 2 Kings 7.8), which has a conjunctive accent and a syllable structure that is not optimal for minor *ga'ya*. The list of forms with vocalic *shewa* includes **הַקְלָקִים** ‘those who lap’. A version of the rule

specifies **המלךים בידם וחברו**, which indicates that the two occurrences of this word in Jud. 7, (verses 6 and 7) are intended.¹⁴⁰ In L and also L17, written by Samuel ben Jacob, the scribe of L (Phillips 2020), marks a *hatef patah* on both occurrences, but A marks *hatef patah* only on the form in Jud. 7.7:

L, L17 **המלךים** (A **המלךִים**, Jud. 7.6)

L, L17, A: **המלךִים** (Jud. 7.7)

In Jud. 7.6 the form has a conjunctive accent and in Jud. 7.7 a disjunctive. It has a syllable structure that is suitable for minor *ga'ya* but has vocalic *shewa* even when it has a disjunctive accent. It is not clear why A vocalizes the form in Jud. 7.6 with a simple *shewa* sign.

A similar case is the following pair:

L: **המְרַגֵּלים** ‘those who spy’ (A: **המְרַגָּלִים**, Josh. 6.22)

L: **המְרַגָּלִים** (A **המְרַגְּלִים**, Josh. 6.23)

These both have a structure optimal for minor *ga'ya* but the *shewa* is vocalic in both occurrences even though the second occurrence (Josh. 6.23) has a disjunctive accent.

In conclusion, there is no absolute rule or consistency relating to places where the *shewa* under the *mem* was read as silent. The somewhat arbitrary distribution of forms with silent *shewa* was fixed in particular streams of the Tiberian tradition. The *ga'ya* on such forms should be identified as a musical minor

¹⁴⁰ *The Treatise on the Shewa* in the Genizah manuscript CUL Or 1080.13.3.2, fol. 2r; cf. Yeivin (1968, 27).

ga'ya, since the majority of forms have a structure that is optimal for minor *ga'ya*. The minor *ga'ya* was a secondary accent and so the short vowel was lengthened by stress rather than by the augmentation of the syllable at an underlying level. For this reason, the *shewa* was silent. The underlying syllabic structures of הַמִּזְבֵּר ‘the one speaking’ (Gen. 45.12) and הַמִּדְבָּרִים ‘those who speak’ (Exod. 6.27) can be represented thus:

/haa.mðab.bē.r/ [ha:maðab'be:er]

/ham.ðab.bri.m/ [,ha'mðabba'ri:im]

Some words beginning with the article + *mem* with *shewa* (הַ) that consist of more than five letters and are stressed on the fifth letter or later are not marked with a *ga'ya* in the manuscripts, suggesting that the *patah* was pronounced short and the *shewa* was silent, e.g.

- L: הַמְקֻשְׁרֹת [hamquʃʃɔ:'ro:oθ] ‘the ones bound’ (Gen. 30.41)
- L: הַמְּדֻרְמִים [ham?ɔ:ddɔ:'mi:im] ‘those dyed red’ (Exod. 39.34)
- L: הַמְּאַרְרִים [ham?ɔ:ra'ri:im] ‘the cursing’ (Num. 5.22)
- L: הַמְּאַרְשָׁה [ham?ɔ:rɔ:ʃɔ:] ‘the betrothed one’ (Deut. 22.25)

According to *Kitāb al-Khilaf*, there were differences between Ben Asher and Ben Naftali regarding the reading of words beginning with הַ with minor *ga'ya*. In Exod. 6.27, for example, it is reported that Ben Asher read הַמִּדְבָּרִים without minor *ga'ya* whereas Ben Naftali read this הַמִּדְבָּרִים with minor *ga'ya* (ed. Lipschütz 1965, 1). In this case, L corresponds to the reading of Ben Naftali (הַמִּדְבָּרִים ‘the ones who speak’). Ben Asher read the *shewa* on the *mem* in the word הַמְּגַלִּים in Josh. 6.22 and Josh. 6.23 as

vocalic, but Ben Naftali regularly read it as silent (ed. Lipschütz 1965, 20, 20). **כְּ**

When the *patah* of the article before **נַ** has *ga'ya*, the Karaite Arabic transcriptions generally represent it as long by transcribing it with *mater lectionis* **'alif**, e.g.

هَامِزَمَاثَا [ha:mazimmo:θā:] (BL Or 2549 fol. 82r, 7 | L
[BHS]: **הָמִזְמָתָה**, A, **הָמִזְמָתָה**, Jer. 11.15 ‘the wickedness’)

هَامِقَشِيمْ [ha:mavaq'si:im] (BL Or 2544, fol. 111v, 12 | L
[BHS]: **הָמִקְשִׁים** Exod. 4.19 ‘those who seek’)

هَامِيلْدُوت [ha:mjalla'ðo:oθ] (BL Or 2542, fol. 43v, 6 | L
[BHS]: **הָמִילְדוֹת** Exod. 1.17 ‘these, who help to give birth’)

In the manuscript BL Or 2555, a vocalic *shewa* is explicitly marked with a *patah* sign and so forms with vocalic and silent *shewa* are distinguished. This corresponds to the distribution of vocalic and silent *shewa* discussed above, e.g.

هَامِشَلَّاش [ha:maʃul:lāš] (BL Or 2555 fol. 29r, 3 | L [BHS]:
هَامِشَلَّاش phonetic *ga'ya* and vocalic *shewa*, Ecc. 4.12 ‘the threefold’)

هَامِهَلْخِيمْ [ha:mhalla'χi:im] (BL Or 2555 fol. 33r, 3 | L
[BHS]: **הָמִהְלָכִים** minor *ga'ya* and silent *shewa*, Ecc. 4.15
'those who move')

It is significant that in some manuscripts a phonetic *ga'ya* on מְ is neither marked in the manuscript nor represented in the transcription where it occurs in L and A, e.g.

הַמְּהָלֵךְ [hamhal'le:ex] (BL Or 2551 fol. 78v, 6 | L [BHS]:

הַמְּהָלֵךְ, A: הַמְּהָלֵךְ, Psa. 104.3 ‘he who walks’)

הַמְּנִסְלֵיחַ [hamsal'le:aχ] (BL Or 2551 fol. 81v, 3 | L [BHS]:

הַמְּנִסְלֵיחַ, A: הַמְּנִסְלֵיחַ, Psa. 104.10 ‘he who sends’)

This evidently reflects other variant streams of the Tiberian tradition in which the *shewa* was pronounced silent without lengthening of the *pataḥ* in these forms. Further evidence for this can be found in manuscripts with Babylonian vocalization that reflect a reading that has converged very closely with the Tiberian tradition. Of particular relevance is the manuscript I Firkovitch Evr. I B 3, containing the Latter Prophets, which distinguishes length of vowels in closed syllables by means of the compound Babylonian sign system (§I.2.5.1.).¹⁴¹ Where L and A have *ga'ya* on the *pataḥ* of the definite article, the *pataḥ* in I Firkovitch Evr. I B 3 is sometimes represented as long. In several cases, however, the *pataḥ* is represented as short (Yeivin 1985, 413), e.g.

הַמְּלֻאָה [hamle:?'a:] ‘the one full’ (L: הַמְּלֻאָה, A: הַמְּלֻאָה, Amos 2.13)

¹⁴¹ Named the Codex Babylonicus Petropolitanus in the facsimile edition by Strack (1876).

הַמְבָקְשִׁים [hamvaq'si:im] ‘those who seek’ (L: הַמְבָקְשִׁים, A: המבוקשים, Jer. 11.21)

הַמְתֻעְבִּים [hamθa:fə'vi:im] ‘the ones abhorring’ (L, A: המתעבים, Mic. 3.9)

Such manuscripts with Babylonian vocalization, the Karaite transcriptions and the lists of differences between Ben Asher and Ben Naftali provide evidence of degrees of variation in the Tiberian tradition both within the Tiberian school and outside of the inner circles of the Tiberian Masoretic school. The variation relating to the particular feature in question appears to have been arbitrary. Also within the inner Tiberian tradition, as we have seen, there was some degree of arbitrariness in the distribution of the vocalic and silent *shewa* in this feature. A particular distribution containing some apparently arbitrary inconsistency (e.g. the silent *shewa* in עֲמֹשָׂא 2 Kings 9.11) became fixed in the tradition.

The gemination of a *mem* with *shewa* after the definite article is retained in numerous cases, e.g.

הַמֶּלֶכִים ‘the kings’ (Gen. 36.31)

הַפְּזִזְעָנִת ‘the doorposts’ (Exod. 12.7)

הַמְּנוּרָה ‘the lampstand’ (Exod. 25.31)

הַפְּצַדָּע ‘the leper’ (Lev. 14.2)

The vocalization of the definite article exhibits different patterns before other consonants that have a tendency to lose gemination when vocalized with *shewa*, i.e. the sonorants *nun*, *yod*, *lamed*, the sibilants and *qof*.

Gemination is occasionally lost in *nun* and the *patah* is marked with *ga'ya*, e.g.

L: וְהַנְשָׁמֹת [vaha:nəʃam'mo:oθ] ‘and the desolated ones’ (A וְהַנְשָׁמֹות Ezek. 36.35)

The vocalization with *hatef patah* in A demonstrates that the *shewa* was vocalic.

The lengthening of the *patah* in such cases is represented by *mater lectionis* *'alif* in the Karaite transcriptions, even when a *ga'ya* sign is not marked in the transcription manuscript, e.g.

هَانِشَمُوتْ [ha:nəʃam'mo:oθ] (BL Or 2549 fol. 106v, 15 | L

[BHS]: הַנְשָׁמֹות, A הַנְשָׁמֹות, Jer. 33.10 ‘those that are desolate’)

In בְּנֵשֶׁתִּים ‘with bronze fetters’ (Jud. 16.21) both L and A have simple *shewa*, so the reading of the *shewa* is not clear. In many cases the gemination is retained, e.g.

הֲנָעָרִים ‘the young men’ (Gen. 14.24)

הַנְּפָلִילִים ‘the Nephilim’ (Gen. 6.4)

Gemination is sometimes lost in *yod*, but the *shewa* is silent and there is no compensatory lengthening, e.g.

הַיּוֹלְדִים ‘the children’ (Gen. 33.5)

הַיְבוֹסִי ‘the Jebusite’ (Josh. 15.8, etc.)

לִישְׁרִים ‘for the upright’ (Psa. 112.4)

בִּירִיעָה ‘on the curtain’ (Exod. 26.5)

In several places the gemination is retained, e.g.

הַעֲלִים ‘the wild goats’ (1 Sam. 24.3)

הַיְהוּדִים ‘the Jews’ (2 Kings 25.25)

הָיּוּנִים ‘the Greeks’ (Joel 4.6)

Lamed loses gemination after the definite article in the frequent phrase הַלְוִיִּם ‘the Levites’ (Exod. 6.25, etc.) without compensatory lengthening. Elsewhere the *lamed* is geminated, e.g.

הַלְבָנָה ‘the frankincense’ (Lev. 6.8)

הַלְבָנָן ‘Lebanon’ (Josh. 9.1)

The sibilants generally have gemination after the article. It is lost in a few words. In some such cases, the *shewa* is vocalic and there is compensatory lengthening, e.g.

L: בְּסֻרָה [ba:ca:ca:] ‘by the whirlwind’ (A 2 Kings 2.1, 11)

L: לְשָׁפָנִים [la:safan'ni:im] ‘for the badgers’ (A Psa. 104.18)

L: וְהַשְׁפָתִים [vaha:safat'thi:im] ‘and the hooks’ (A, Ezek. 40.43)

In other cases the *shewa* is silent and there is no compensatory lengthening, e.g.

L, A: הַשְׁלֵבִים ‘the frames’ (1 Kings 7.28)

L: הַזָּקְנִים ‘the elders’ (A: 1 Kings. 21.8)

L: בְּשֹׁאָת ‘in the swelling’ (Lev. 13.10)

As for the word ‘the frogs’ (Exod. 8.9, etc.), a surviving fragment of A of Exod. 8.9 has a *hatef patah* under the *sade* of this

word (הַצְפָּרָךְ עִם), indicating that the *shewa* was vocalic despite the fact that its structure is appropriate for minor *ga'ya*.

Qof generally retains gemination, e.g.

הַקְדֵּשָׁה ‘the harlot’ (Gen. 38.21)

הַקְרְשִׁים ‘the boards’ (Exod. 26.15)

There are a few exceptions, e.g.

L: מְקֻטָּנִים ‘the small ones’ (A הַקְטָנִים Isa. 36.9)

L, A: בְּקָרֶב ‘in the battle’ (2 Sam. 17.11)

L, A: לְקָרֶב ‘for the battle’ (Psa. 144.1).

I.2.5.8.2. Interrogative *He*

When interrogative *he* is prefixed to a word beginning with a letter with *shewa*, the interrogative *he* is often vocalized with *patah* and the *shewa* is silent, e.g.

הַמּוֹעֵט [ham'qa:at] ‘Is it a small matter?’ (Gen. 30.15)

הַמּוֹעֵת פְּרָצִים תִּהְיֶה הַבַּיִת הַזֶּה [ham'qa:ra:aθ] ‘Has this house become a den of robbers?’ (Jer. 7.11)

הַכּוֹזֶה יִשְׂשָׁה אֶת-אֲחֹתֵינוּ [haχzo:nc:] ‘Should he treat our sister as a harlot?’ (Gen. 34.31)

הַלְּהִרְגֹּנִי אַתָּה אָמַר [halhɔr'ge:ni] ‘Do you intend to kill me?’ (Exod. 2.14)

הַלְּיִרְשֶׁנוּ קְרָאתָם לְنִי [haljɔr'se:nu] ‘Have you invited us here to impoverish us?’ (Jud. 14.15)

הַבָּסֹוד אֱלֹהָה תִּשְׁמַע [hav'so:oð] ‘Have you listened to the council of God?’ (Job 15.8)

הַבָּעֵד עַרְפֵּל יִשְׁפֹּז [hav'fa:a:ad] ‘Can he judge through the deep darkness?’ (Job 22.13)

On some occasions, a phonetic *ga'ya* is marked on the *patah* and the *shewa* is read as vocalic. One such case is listed in §14 of *Diqduqe ha-Te'amim*:

- L: המְצַאֲתָנִי [ha:mas'c:.θa:ni:] ‘have you found me?’ (A: המְצַאֲתָנִי 1 Kings 21.20)

As is the case with the phonetic *ga'ya* on the definite article, the purpose of this is likely to be to create a syllabic division between the interrogative particle and the following word in order to mark a clear morphological division. When the initial consonant of the word is syllabified in the onset of the following syllable, the *patah* is lengthened by compensation:

/ham.s^ō.θō.nī/ > /haa.ms^ō.θō.nī/ [ha:.ma.s^ōc:.θa:.ni:].

In the extant portions of A, the vocalic reading of the *shewa* is made explicit by a *hatef* sign. Further examples:

- L: הַמְכַפֵּה אָנִי [ha:maχa'se:] ‘Shall I hide?’ (Gen. 18.17)
- L: הַבְּרִכָּה אֶחָת [ha:vareχ:c:] ‘one blessing?’ (Gen. 27.38)
- L: הַנְּקָלָה הַנְּקָלָה [ha:naqal'lō:] ‘Is it a little thing?’ (A: הַנְּקָלָה 1 Sam. 18.23)
- L: הַשְׁכַּחַתְּמָן [ha:ʃaχah't^ōε:em] ‘Have you forgotten?’ (A: הַשְׁכַּחַתְּמָן Jer. 44.9)
- L: הַתְּקִשָּׁר [ha:θaqas'ʃe:er^ō] ‘Can you bind?’ (A: הַתְּקִשָּׁר Job 38.31)

L: חַתְשָׁלָח [ha:θaʃal'la:ah] ‘Can you send forth?’ (A: חַתְשָׁלָח Job 38.35)

L: חַתְמָלָא [ha:θamal'le:] ‘Can you fill?’ (A: חַתְמָלָא Job 40.31)

In a few cases where *ga'ya* is marked on interrogative *he* both L and A have a simple *shewa* on the following consonant:

L, A: הַלְעֹזֶל מִים יִגְנַח | אֲדֹנֵי ‘Will the Lord spurn forever?’ (Psa. 77.8)

L, A: חַתְשָׁקְבּוֹ ‘Will you play with him?’ (Job 40.29)

In the first case, the lack of a *hatef* in A is most likely due to the fact that there was no suitable *hatef* to represent the short [o] quality of the *shewa* before the guttural: [ha:lo-fo:lɔ:mi:im].

The lengthening of the *patah* of the interrogative particle is reflected by *mater lectionis* 'alif in the Karaite Arabic transcriptions, e.g.

هَا ثَقْسِير [ha:θaqasʃ'e:r] (BL Or 2552 fol. 81r, 15 | L [BHS]:
هَا تَكْشِر, A: חַתְקָשָׁר, Job. 38.31 ‘will you bind?’)

هَا ثَمْلِي [ha:θamal'le:] (BL Or 2552 fol. 85r, 9 | L [BHS]:
هَا تَمْلَأ, A: חַתְמָלָא, Job. 40.31 ‘will you fill?’)

هَا شَنَا حَقْ-بُو [ha:θasa:həq-'bo:] (BL Or 2552 fol. 84v, 11 | L
[BHS], A: חַתְשָׁקְבּוֹ, Job. 40.29 ‘will you play with him?’)

The early Tiberian biblical codices exhibit some degree of variation, e.g.

- L: **הַמְעַרְתָּה פְּרִצְלִים הָיָה הַבַּיִת הַזֶּה** without *ga'ya* [ham̩ɔ:ʃ̩ra:aθ] ‘Has this house become a den of robbers?’ (A: **הַמְעַרְתָּה** [ha:m̩ɔ:ʃ̩ra:aθ], Jer. 7.11)

Some variation is found also in the Tiberian tradition reflected by manuscripts with Babylonian vocalization, such as I Firkovitch Evr. I B 3, containing the Latter Prophets, which distinguishes length of vowels in closed syllables by means of the compound Babylonian sign system:

- L: **הַשְׁכַּחֲתָם** [ha:ʃ̩axah̩'t̩ε:em] ‘Have you forgotten?’ (A: **הַשְׁכַּחֲתָם**, I Firk. Evr. I B 3 **הַשְׁכַּחֲתָם** [haʃ̩kah̩'t̩a:am], Jer. 44.9)

Another strategy to mark clear a morphological division between the interrogative particle and what follows is to geminate the consonant following the particle (§I.3.1.8.), e.g.

הַכְּצֻעָקָתָה [hakkʰas'a:fəqɔ:θɔ:χ] ‘whether it according to its outcry’ (Gen. 18.21)

הַכְּרִזֵּא הַכְּתֹנֶת בְּנֵךְ הוּא [hakkʰa'θo:nɛθ] ‘acknowledge now whether it is your son's robe’ (Gen. 37.32)

הַבְּמִחְנָנִים [habbam̩a:ha'ni:im] ‘is it in camps?’ (Num. 13.19)

הַכְּמִכְתָּמָה [hakkʰamak'kʰa:aθ] ‘Has he struck him as the one who struck him?’ (Isa. 27.7)

הַרְאִיתָם [harri'i:i:'θε:em] ‘Have you seen?’ (1 Sam. 10.24)

I.2.5.8.3. Two Identical Consonants

As remarked in §I.2.5.7.3., a *shewa* that occurs on the first of two identical consonants after a short vowel was read as silent in the Tiberian tradition, e.g.

L: הִנֵּי [hin'ni:] ‘behold me’ (Gen. 6.17)

On many occasions, however, the vowel before the identical consonants in such forms is lengthened and the *shewa* is read as vocalic. The lengthening of the vowel is, in principle, marked by a *ga'ya* sign in the early codices. In the extant portions of A, the vocalic reading of the *shewa* is generally indicated explicitly by marking a *hatef patah* sign. A *hatef patah* is sometimes found also in L, but most of these are misshapen and are clearly the result of a later correction, e.g.

L, A: צָלָלוֹ [s^fi:la'lō:] ‘his shade’ (Job 40.22)

L, A: קְلַלְתָּה [qi:la'lō:oθ] ‘the curse of’ (Jud. 9.57)

L: מִלְלָיִ גִּלְלָי [mi:la'la:j gi:la'la:j] ‘Milalai, Gilalai’ (Neh. 12.36)

The main motivation for reading the *shewa* as vocalic was doubtless to ensure that the two identical letters in contact were given their full articulation and not slurred together. The insertion of a vowel between them would have made each more salient. This was achieved by augmenting the preceding syllable with a vowel mora, which would have conditioned a resyllabification. The *ga'ya* can be identified with what Yeivin calls a phonetic *ga'ya*. This was, in essence, a mark of ‘mora-augmenting’ lengthening:

/s^fil.lō/ > /s^fii.llō/ [s^fi:lalo:]

The normal practice in L, however, is for a phonetic *ga'ya* to be marked on the vowel and a simple *shewa* sign on the first of the identical consonants. In the extant portions of A, a *hatef patah* is usually marked in such cases, e.g.

- L: רְבָבֹות [ri:və'vo:oθ] ‘the ten thousands of’ (Num. 10.36)
- L: בְּרַבְבּוֹת [baṛi:va'vo:oθ] ‘with ten thousands of’ (A: בְּרַבְבּוֹת, Mic. 6.7)
- L: בְּחַצֵּן תָּמֶר [baḥa:s^fa's^fo:on t^hc:^fmc:R] ‘in Hazazontamar’ (Gen. 14.7)
- L: וּפְלִלוֹן [wufi:la'lō:] ‘and he will mediate for him’ (A: וּפְלִלוֹן, 1 Sam. 2.25)
- L: חַלְלֵי [ha:la'le:] ‘the slain of’ (A: חַלְלֵי, 1 Sam. 17.52)
- L: בְּקַלְלֵוֹן [baqa:la'lō:] ‘when he cursed’ (A: בְּקַלְלֵוֹן, 2 Sam. 16.7)
- L: מַה-תִּתְהַלֵּל [ma:-ttiθha:la'lī:] ‘why do you boast?’ (A: מַה-תִּתְהַלֵּל, Jer. 49.4)
- L: בְּגַלְלֵי [baθe:la'le:] ‘the dung of’ (A: בְּגַלְלֵי, Ezek. 4.12)
- L: שְׁמַמּוֹת [ʃi:ma'mo:oθ] ‘devastations of’ (A: שְׁמַמּוֹת, Ezek. 35.9)
- L: יְלֻלָּת [ji:la'la:aθ] ‘the howling of’ (A: יְלֻלָּת, Zech. 11.3)
- L: בְּעַנְנֵי [bafa:na'ni:] ‘when I bring clouds’ (A: בְּעַנְנֵי, Gen. 9.14)
- L: חֲנַנְנֵי [ħa:na'ne:ni:] ‘be gracious to me’ (A: חֲנַנְנֵי, Psa. 9.14)

In a few cases, a *ga'ya* is marked but a simple *shewa* is written instead of *hatef patah* in both L and A, e.g.

L, A: **לְחַנּוּ** [leħə:nū'cō:h] ‘in order to favour it (fs)’ (Psa. 102.14)

L, A: **הָלֹוּ** [ha:la'lū:] ‘praise’ (Jer. 20.13)

L, A: **וְהַחֲפִלּוּ** [vihiθp^ha:la'lū:] ‘and pray’ (Jer. 29.7)

L, A: **הָלֹוּיָה** [ha:lalu:-'jɔ:cō:h] ‘praise the Lord’ (Psa. 106.48)

Sporadically the *ga'ya* is omitted, though A has a *hatef patah*, e.g.

A: **נוֹגֵשׁוּ** [nəgə:ʃu:] ‘we grope’ (L: **נוֹגֵשׁ**, Isa. 59.10)

L: **גָּלְלָיוּ** [gə:la'le:] ‘the dung of’ (A: **גָּלָל**, Ezek. 4.15)

L: **וְיַהֲלֹךְ** [jaha:la'lē:əkk^hc:] ‘and it will praise you’ (A: **יַהֲלֹךְ**, Isa. 38.18)

In the following example, the *ga'ya* is omitted in both L and A, with a *hatef patah* indicating the vocalic *shewa*. There is a musical *ga'ya* on the *shewa* at the beginning of the word, which is normally associated with syllabic structures with a vocalic *shewa* before the main stress, i.e. **מִפְעָלִים**, **מִפְלָפְלִים** (§I.2.9.).

L, A: **כְּגַלְלָיוּ** [k^ha:ke:la'lō:] ‘like his dung’ (Job 20.7)

In such cases, the *hatef patah* is often omitted in L, e.g.

L: **יַהֲלֹךְ** [ja:ha:la'lū:] ‘they praise’ (A: **יַהֲלֹךְ**, Psa. 74.21)

L: **וְיַהֲלֹךְ** [ja:ha:la'lū:] ‘they praise you’ (A: **וְיַהֲלֹךְ**, Psa. 84.5)

L: **וְיַמְשִׁשּׁוּ** [ja:ma:ʃa'ʃu:] ‘they grope’ (A: **וְיַמְשִׁשּׁוּ**, Job 5.14)

When the word contains a musical minor *ga'ya*, in L there is often no marking of either the phonetic *ga'ya* or the *hatef patah*. Likewise in A the phonetic *ga'ya* is omitted and also the *hatef*

patah in some examples. As was the case with the musical *ga'ya* on *shewa*, the musical minor *ga'ya* is associated with syllabic patterns that have a vocalic *shewa* before the main stress, i.e. מִתְפָּעַלִים (§I.2.8.2.2.), so the marking of the minor *ga'ya* was evidently felt by the vocalizers to be sufficient to ensure that the reader read the *shewa* on the first of the two identical consonants as vocalic:¹⁴²

L, A: וַיִּקְلְלוּ [va·qa:la'lū:] ‘and they cursed’ (Jud. 9.27)

L, A: וַיִּתְהַלֵּוּ [vi·ji·θha:la'lū:] ‘and they will glory’ (Isa. 45.25)

L: וַיִּהְלְלוּ [va·jha:la'lū:] ‘and they praised’ (A: הַתְהַלֵּלוּ, 2 Chr. 29.30)

L: הַתְהַלֵּלוּ [hi·θha:la'lū:] ‘glory!’ (A: הַתְהַלֵּלוּ, Psa. 105.3)

Some early manuscripts do not mark minor *ga'ya* in a number of the forms just listed, but mark the *shewa* as vocalic either by a phonetic *ga'ya* before the *shewa* or by a *hatef patah*, e.g.¹⁴³

JTS 232/ENA 346: וַיִּתְהַלֵּוּ [vijiθha:la'lū:] (Isa. 45.25)

C: וַיִּתְהַלֵּוּ [vijiθha:la'lū:] (Isa. 45.25)

Both phonetic *ga'ya* and *hatef patah* are omitted in L and A in some words that do not have a musical *ga'ya* but which elsewhere are normally read with a vocalic *shewa*. This applies to some words that are attested in both L and A, and to some that are attested only in L, e.g.

¹⁴² See the discussion concerning the lack of phonetic *ga'ya* in such forms in Phillips (2020).

¹⁴³ See Heijmans (2018, 99).

L, A: יְהִלּוֹהוּ ‘they praise him’ (Psa. 107.32)

L: מַקְלֵךְ ‘he who curses you’ (Ecc. 7.21)

In a few cases, the vowel before the first of two identical consonants is lengthened by a retracted accent. The *shewa* was pronounced vocalic here also, as demonstrated by its being represented by a *hatef patah*:

L: אָלָלֵי [?a:lalaj] ‘woe is me’ (A: אָלָלֵי, Mic. 7.1)

L: הָלָלָה [ha:lalu:] ‘praise the Lord’ (A: הָלָלָה, Psa. 135.1)

In all these cases, the Karaite transcriptions represent the lengthened vowel preceding the first of the two identical consonants as long by an Arabic *mater lectionis*. This includes cases in which L and/or A do not mark a *ga'ya* or *hatef patah*, e.g.

مقاللخا [maqāla'lə:rəχɔ:] (BL Or 2555 fol. 72v, 12 | L [BHS]:

מַקְלֵךְ Ecc. 7.21 ‘he who curses you’

يهاللکا [jahāla'lə:ɛkkɔ:] (BL Or 2548 fol. 32v, 12 | L

[BHS]: يَهَلْكَةً, A: يَهَلْكَةً, Isa. 38.18 ‘and it (msg) will praise you’)

جاللي [gə:lə'le:] (BL Or 2549 fol. 149r, 11 | L [BHS]: גָּלְלִי,

A: גָּלְלִי, Ezek. 4.15 ‘dung of’)

Lengthening by retraction of the accent is likewise represented in the transcriptions, e.g.

هَالِلُوْ يَاْهُ ['ha:lalu: 'jɔ:ch] (BL Or 2551 fol. 99v, 1 | L [BHS]:

הַלְלוּ יְהָה, A: הַלְלוּ יְהָה, Psa. 135.1 ‘praise!’)

The manuscript I Firkovitch Evr. I B 3 (Codex Babylonicus Petropolitanus), which represents the Tiberian tradition in compound Babylonian vocalization, represents as long some vowels before a pair of identical consonants in forms that do not have a phonetic *ga'ya* in L and A, e.g.¹⁴⁴

L, A: וַיִּתְהַלֵּוּ [vi.ji.θha:la'lū:] ‘and they will glory’ (I Firk. Evr. I B 3 וַיִּתְהַלֵּוּ [vi.ji.θha:la'lū:] Isa. 45.25)

The *Kitāb al-Khilaf* records some differences between Ben Asher and Ben Naftali in the lengthening of the short vowels before two identical consonants, e.g.¹⁴⁵

Ben Asher: קָלְלָתֶךָ ‘your curse’ (Gen. 27.13)

Ben Naftali: קָלְלָתֶךָ

Some differences are found across the manuscripts. In I Firkovitch Evr. I B 3, which represents the Tiberian tradition with compound Babylonian vocalization, for example, some of the vowels that are marked as long by a phonetic *ga'ya* or *hatef patah* in A and/or L are represented as short, e.g.¹⁴⁶

L: לְשֻׁמְמָה [laʃi:ma'mo:] ‘into a desolation’ (A לְשֻׁמְמָה, I Firk. Evr. I B 3 לְשֻׁמְמָה [laʃim'mo:], Ezek. 35.7)

¹⁴⁴ Cf. Heijmans (2018, 102).

¹⁴⁵ Ed. Lipschütz (1965, ۱).

¹⁴⁶ Cf. Heijmans (2018, 103–4).

- L: קָנְנוּ [qi:na'nu:] ‘they nested’ (A קָנְנוּ, I Firk. Evr. I B 3 קָנְנוּ [qin'nu:], Ezek. 31.6)

In some cases, I Firk. Evr. I B 3 marks a *dagesh* in the following consonant, indicating explicitly that it was closed syllable:

- L: מַקְלֵלָנוּנִי [maqa:la'la:avni:] ‘they curse me’ (A מַקְלֵלָנוּנִי, I Firk. Evr. I B 3 מַקְלֵלָנוֹן [maqalla'la:avni:], Jer. 15.10)

- L: מַחְלֵלִיךְ [maħala'lə:χɔ:] ‘those who slay you’ (A מַחְלֵלִיךְ, I Firk. Evr. I B 3 מַחְלֵלְךָ [maħallala:χɔ:], Ezek. 28.9)

Conversely, some vowels that are short in L and A are represented as long in I Firk. Evr. I B 3, e.g.

- L, A: חֲלֵלִיָּה [ḥalle:] ‘the slain of’ (I Firk. Evr. I B 3 חֲלֵלָה ['ha:lale:], Isa. 22.2)

In I Firk. Evr. I B 3 this word is marked with a retracted accent (לִילִי) rather than being unstressed as in L and A, which would have lengthened the vowel.¹⁴⁷

I.2.5.8.4. Conjunctive *Vav*

A silent *shewa* after a word-initial conjunctive *vav* is sometimes made vocalic by lengthening the *vav* with a phonetic *ga'ya*, e.g.

- L: וְקָרְאָו [wu:qa'rɔ:u:] ‘and read’ (A וְקָרְאָו, Isa. 34.16)

In such cases, A regularly marks the vocalic *shewa* with *hatef patah*. A *hatef patah* is sometimes marked also in L.

¹⁴⁷ Cf. Heijmans (2018, 102).

The marking of an Arabic *sukūn* in some transcriptions after *vav* without a *ga'ya* demonstrates that the *shewa* in such forms was pronounced silent, e.g.

ورْعَي [wur'ui:] (BL Or 2554 fol. 35r, 2 | L [BHS]: וַרְעֵי Cant.

1.8 ‘and graze!’)

وُقْدُوش [wuq'do:oʃ] (BL Or 2548 fol. 50v, 8 | L [BHS]: וָקְדוֹש Isa. 41.20 ‘and holy of’)

The reading of the *shewa* as vocalic after a lengthened *vav* separates two consonants that are relatively weak by their nature. These include sonorants, fricatives (frequently sibilants), gutturals and *qof*. The motivation, therefore, appears to have been orthoepic. Two weak consonants in contact do not constitute an optimal boundary between syllables (Vennemann 1988). They were split by a vowel to ensure that they were maximally salient:

L, A: וְלֹא־צִוָּן ‘and regarding Zion’ (Psa. 87.5)

L, A: וְקָרְבַּ-לְבֹז ‘the war of his heart’ (Psa. 55.22)

L, A: וְשֻׁבָה ‘and capture’ (Jud. 5.12)

L, A: וְשַׁבַּע ‘and seven’ (1 Kings 14.21)

L: וְלֹהֲבִידֵל ‘and to divide’ (Gen. 1.18)

L: וְזָהָב ‘and the gold of’ (Gen. 2.12)

L: וְכִינֶה ‘and like a garden’ (A: וְכִינֶה, Isa. 1.30)

L: וְכָל־בָּחִי ‘as far as I was able’ (A: וְכָל־בָּחִי, 1 Chron. 29.2)

L: וְכָכְלוֹתָם ‘and when they had finished’ (A: וְכָכְלוֹתָם, 2 Chron. 24.14)

- L: וְסַגֵּר 'and close' (A: וְסַגֵּר, Isa. 26.20)
- L: וְסִחְרָבּוֹשׁ 'and the merchandise of Ethiopia' (A: וְסִחְרָבּוֹשׁ, Isa. 45.14)
- L: וְקִרְאָו 'and read' (A: וְקִרְאָו, Isa. 34.16)
- L: וְשִׁלְחוּ 'and send' (A: וְשִׁלְחוּ, 2 Kings 9.17)
- L: וְתַכְפִּנּוּ 'and let it cover us' (A: וְתַכְפִּנּוּ, Jer. 3. 25)

When the vocalic *shewa* occurs before a guttural with *qames*, it is represented in A and sometimes also in L by *hatef qames*, reflecting the assimilation of the *shewa* to the quality of the following vowel, e.g.

- L, A: וְתַהֲרֵרְתֶּם 'and clean of hands' (Job 17.9)
- L: וְשֻׁעְדָּה 'and refresh yourself' (A: וְשֻׁעְדָּה, 1 Kings 13.7)
- L: וְצִעְקָה 'and cry out' (A: וְצִעְקָה, Jer. 22.20)

According to some medieval sources, the *shewa* after a *vav* with *ga'ya* is silent in some phrases consisting of words joined by *maqqef*.¹⁴⁸ The examples mentioned in these sources and several other cases with *maqqef* do not have *hatef patah* in L or A, e.g.

- L: וְמַה-לְךָ [wu·ðme:-laχɔ:] 'make yourself similar' (Cant. 8.14)
- L, A: וְשִׁלְחוּ [wuʃlaħ-li:] 'and send me' (1 Chron. 2.7)
- L, A: וְלִכְלָבִנִּיהָ [wułχel-bənɪja:] 'and to all her sons' (1 Sam. 1.4)

¹⁴⁸ Dotan (1967, 258, 374), Ibn Nūḥ, *Diqduq* (ed. Khan 2000b, 36).

L, A: וְלֹא־כָל־הַמִּקְמוֹת [wə'la:həm̥iq̥moθ] ‘and to all the places’ (1 Sam. 30.31)

L, A: וְלֹא־גָבָר [wə'la:gib'o:or] ‘and every warrior’ (1 Chron. 28.1)

L, A: וְשָׁבֵע־רָנוֹן [wə'sva:y'-rənən] ‘and full of trouble’ (Job 14.1)

The *maqqef*, however, is unlikely to be the key conditioning factor for the reading of the *shewa* as silent, since there are examples where a word with *maqqef* has a vocalic *shewa* after *vav* with *ga'ya*, e.g.

L, A: וְקָרְבַּ-לְבֹז [wə:qar'bə:ləboz] ‘and the war of his heart’ (Psa. 55.22)

L: וְסָחָר־כּוֹשֶׁת [wu:sahar'-k^hu:ušet] ‘and the merchandise of Ethiopia’ (A, סָחָר, Isa. 45.14)

It appears that in those cases where the *shewa* is silent the *ga'ya* is a musical minor *ga'ya*, which requires that the syllable in which the *ga'ya* occurs be closed (§I.2.8.2.2.).¹⁴⁹ Minor *ga'ya* also occurs on *vav* in some cases that are single words, especially in those with a syllable structure that is suitable for minor *ga'ya*. In such cases A has a simple *shewa* sign, reflecting its reading as silent, e.g.

L, A: וְכָל־בָּבֶן [wə'la:bəben] ‘and according to your heart’ (2 Sam. 7.21)

L, A: וְבָמְגֻּרָת [wu:vmaq̥za'r^ho:oθ] ‘and with axes of’ (2 Sam. 12.31)

¹⁴⁹ Yeivin (1980, 247).

L, A: וְבָנֶלְחוּ [wuvvəallo'ho:] ‘and when he shaved’ (2 Sam. 14.26)

Kitāb al-Khilaf mentions several differences between Ben Asher and Ben Naftali regarding the reading of the *vav* and the following *shewa* in the types of constructions discussed above. In some cases, the difference seems to be between reading a word or phrase with or without musical minor *ga'ya*. Minor *ga'ya* was, indeed, the subject of the majority of differences in *Kitāb al-Khilaf*. Examples:¹⁵⁰

Ben Asher: וּבְכָל־חַיִת (L: וּבְכָל־חַיִת) ‘and in every beast of’ Gen. 9.10)

Ben Naftali: וּבְכָל־חַיִת

Ben Asher: וּבְהַעֲלֹת אַהֲרֹן (L: וּבְהַעֲלָת אַהֲרֹן) ‘and when Aaron set up’ Exod. 30.8)

Ben Naftali: וּבְהַעֲלוֹת

In some cases, Ben Naftali read the *vav* with a phonetic *ga'ya* and the following *shewa* as vocalic where Ben Asher read *vav* without a *ga'ya* and the *shewa* as silent, e.g.¹⁵¹

Ben Asher: וְקַטְרָתִי (L, A: וְקַטְרָתִי) ‘and my incense’ Ezek. 16.18)

Ben Naftali: יְקַטְרָתִי בְּפִתְחָה

In the case of the following example it appears that Ben Asher read the *vav* with a minor *ga'ya* and the *shewa* as silent

¹⁵⁰ Ed. Lipschütz (1965, ה, יב).

¹⁵¹ Ed. Lipschütz (1965, לה).

whereas Ben Naftali read the *vav* with phonetic *ga'ya* and the *shewa* as vocalic:¹⁵²

Ben Asher: וְשַׁבַּע־רָגֹן (L, A; וְשַׁבַּע רָגֹן ‘and full of trouble’ Job 14.1)

Ben Naftali: וְשַׁבַּע

I.2.5.8.5. Elsewhere

Also in other contexts, a silent *shewa* preceded by a short vowel is sometimes converted into a vocalic *shewa* by imposing a resyllabification by lengthening the short vowel by a phonetic *ga'ya*. As in the case of *shewa* after *vav*, which was discussed in the previous section, this typically occurs where the two consonants are relatively weak, in that they are sonorants, fricatives (especially sibilants), gutturals or *qof*. The motivation, therefore, is to repair a suboptimal syllable contact, by splitting the consonants with a vowel to make them more salient and syllabifying them as onsets, i.e. CVC.C > CVV.CV.C. In A the vocalic *shewa* is generally represented by *hatef patah*. The lengthened vowel before the *shewa* is in most cases *hireq* or *patah*. In some sporadic cases it is *segol*.

Examples:

L: לִי [ji:s[°]aħaq-'li:] ‘will laugh at me’ (Gen. 21. 6)

L: בְּשַׁקְעָתָוֹת [baʃi:qa'θo:oθ] ‘in the troughs of’ (Gen. 30.38)

L: קֶלְמָה תְּקַלֵּל [haθi:ma'lō:oχ] ‘are you a king?’ (A: קֶלְמָה תְּקַלֵּל, Jer. 22.15)

¹⁵² Ed. Lipschütz (1965, ג).

- L: חֲשַׁרְתִּים [ha:ʃaʁaθ-'ma:jim] ‘a gathering of water’ (A: חֲשָׁרֶת, 2 Sam. 22.12)
- L: בְּסֻבְּדָעֵץ [bi:savcəχ-'se:es] ‘in the thicket of trees’ (A: no ga'ya, בְּסֻבְּדָעֵץ, Psa. 74.5)
- L: אַרְזֵי־אָלָּן [a:ʁaze:-'ʔe:el] ‘the cedars of God’ (A: אַרְזִי, Psa. 80.11)¹⁵³

When the vocalic *shewa* occurs before a guttural with *hireq*, A sometimes represents the *shewa* with a *hatef hireq* sign, which reflects the regular assimilation of the quality of vocalic *shewa* to that of the vowel after the guttural (§I.2.5.1.), e.g.

- A: הַשְׁתִּיתוּ הַתְּשִׁיבּוּ [hi:ʃi'hi:θu: hi:θi'si:vu:] ‘they have acted corruptly and have done abominable deeds’ (L: הַשְׁתִּיתוּ הַתְּשִׁיבּוּ, Psa. 14.)

Examples occur in which a vocalic *shewa* before a guttural with *qames* is represented by *hatef qames*, likewise reflecting vowel assimilation, e.g.:

- L: נְבָהָל [ni:ħħ'və:l] ‘hastening’ (A: נְבָהָל, Prov. 28.22)

In one case a *hatef patah* occurs in A before a guttural with *qames*, instead of the expected *hatef qames*, e.g.

- A: שְׁמֹעַה [ʃəm'ua] ‘hear!’ (L: שְׁמֹעַה, Psa. 39.13)

¹⁵³ Forms such as בְּמֵצְאָכֶם ‘and I remained’ (Ezek. 9.8) and בְּמֵצְאָנֶךָ ‘when you find’ (Gen. 32.20), in which, it seems, an original contact between two weak consonants has been split, may be related to this phenomenon.

Diqduqe ha-Te'amim (ed. Dotan, 1967, §19), however, refers to the practice of some scribes to vocalize this word with *hatef qames* (עֲמָתָשׁ).

The *Treatise on the Shewa* refers to the reading of the vocalic *shewa* in קֶלְעַי ‘my rock’ (2 Sam. 22.2, Psa. 18.3) as a *hireq* [sa:li'fi:].[¹⁵⁴

Where L has a simple *shewa* and A is not extant, the vocalic reading of the *shewa* can sometimes be established from Karaite transcriptions that mark vocalic *shewa* with an Arabic *fatha* vowel sign, e.g.

مَامِشَقْ [ma:maθaq'qi:im] (BL Or 2554 fol. 65v, 1 | L [BHS]:
מִמְתְּקִים Cant. 5.16 ‘sweet things’)

In some cases, the weak consonant with the vocalic *shewa* has lost original gemination, e.g.

L, A: וְתַעֲלֵזָהוּ [vatta?a:la's'e:hu:] ‘and he urged him’ (Jud. 16.16,
< וְתַעֲלֵזָהוּ)

L, A: כִּנְרוֹת [k'hixa'r'o:oθ] ‘Chinneroth’ (Josh. 11.2, < כִּנְרוֹת)

In many cases in the three books, A has a slanting *merkha* accent where L has a vertical *ga'ya*, e.g.

L: תְּבֻחָר [t'hiva'ha:aR] ‘you choose’ (A: תְּבֻחָר, Psa. 65.5)

L: תְּלַעַג [t'hila'fa:aR] ‘it mocks’ (A: עַלְעַג, Prov. 30.17)

L: לְשֹׁאָל [li:ʃo'fo:ol] ‘for Sheol’ (A: לְשֹׁאָל, Psa. 49.15)

L: זְבַחִי [zi:ve'he:] ‘the sacrifices of’ (A: זְבַחִי, Psa. 51.19)

¹⁵⁴ Ed. Levy (1936, כה).

- L: מִמְּתִים [mi:ma'θi:im] ‘from men’ (A: מִמְּתִים, Psa. 17.14, < מִמְּתִים)
- L: אָבֵחַר [ʔe:va'ħa:aħar] ‘I choose’ (A: אָבֵחַר, Job 29.25)
- L: אָמְרוֹת [ʔi:ma'ro:oθ] ‘the promises of’ (A: אָמְרוֹת, Psa. 12.7)
- L: אָקְרָא [ʔe:qa'ʁea:] ‘I call’ (A: אָקְרָא, Psa. 18.7)

In a few cases where A has a *merkha*, an original *ga'ya* has been corrected to a *merkha* in L, e.g.

L, A: אֲנָשִׁי ‘the men of’ (L first hand: אֲנָשִׁי, Job 34.10)

L, A: וְלִשְׁבָּנִי ‘and to my neighbours’ (L first hand: וְלִשְׁבָּנִי, Psa. 31.12)

In the parallel passages of 2 Sam. 22 and Psa. 18, both manuscripts have *ga'ya* in the 2 Sam. 22 passage whereas in the Psa. 18 passage L has *ga'ya* and A has *merkha*:

L, A: סָלָעִי ‘my rock’ (2 Sam. 22.2)

L: סָלָעִי ‘my rock’ (A: סָלָעִי, Psa. 18.3)

Examples such as these with *merkha* in A from the three books are referred to in §13 of *Diqduqe ha-Te'amim* (ed. Dotan 1967). The most satisfactory reading of this passage is the variant text that Dotan cites in the apparatus of his edition:

כל תיבה ערוכה ובمارכה ארוכה וברשותה תמורה בפתחא משוכבה

‘Every word that occurs that is lengthened by *merkha* and is stressed with an accent is extended by *patah*’

This, apparently original,¹⁵⁵ version of the rule states that in words in the three books that have a *merkha* before a *shewa* in addition to a following main accent¹⁵⁶ the *shewa* is read as a *pataḥ* (i.e. vocalic).¹⁵⁷ The passage in *Diqduqe ha-Te‘amim* goes on to give four exceptions to this rule, in which the *shewa* is silent:

- L: שְׁמַרְתָּה נֶפֶשׁ [šəm̪r̪at̪a] ‘preserve my life’ (A: שְׁמַרְתָּה נֶפֶשׁ, Psa. 86.2)
- L: שְׁבִירָה לֹבֵי [šəb̪ir̪ah lɔ̄bi] ‘it has broken my heart’ (A: שְׁבִירָה לֹבֵי, Psa. 69.21)
- L: טָמַנְנוּ-בְּאֵת [t̪əm̪n̪u:-be:’i:t̪] ‘arrogant men have hidden’
(A: טָמַנְנוּ, Psa. 140.6)

¹⁵⁵ This formulation of the rule is cited in the *Treatise on the Shewa* (ed. Levy, 1936, ۲۳). When discussing one of the examples, moreover, al-Fāṣī uses the term *merkha*; cf. *Jāmi‘ al-’Alfāz* (ed. Skoss 1936, vol. 2, 684), which, he states, brings about ‘a strengthening of the accents’ (תקוּתָאַלְאַחֲרָאָן).

¹⁵⁶ The term שְׁרָכָה and the verbal root שָׁרַךְ is used elsewhere in *Diqduqe ha-Te‘amim* as a generic term to refer to the main accent, e.g. §6, line 6 (ed. Dotan, 1967).

¹⁵⁷ A later version of the passage, which Dotan adopts as his preferred text, refers to *ga‘ya*: כל תיבעה ערוכה ובגעייה ארוּכה ובעזעיה תמוּכה פתחא משווּכה ‘Every word that occurs made long with a softening (of vocalic *shewa*?) and stressed with *ga‘ya* is extended by *pataḥ*’. This version cannot easily be accommodated with the exceptions to the rule listed at the end of the passage. It appears to have arisen due to the fact that many scribes, such as Jacob ben Samuel in L, marked *ga‘ya* rather than *merkha* in such words.

L: יְרָאָתְךָ יְהוָה [ji:r'a:θa:aθ] ‘the fear of the Lord’ (A: יְרָאָתְךָ, Prov. 8.13)

In A all of these have *merkha* rather than *ga'ya* on the first syllable, and the rule in *Diqduqe ha-Te'amim* is referring specifically to such cases with *merkha*. The first example (A: שִׁמְרָה, Psa. 86.2) is an imperative form with a lengthened originally short *qameṣ* after the *shin*. On account of this lengthening and the silent *shewa*, it would have been pronounced in the same way as the 3fs. past verbal form שִׁמְרָה, since this also had a silent *shewa*. Such past forms in A all have *ga'ya* on the first syllable: שִׁמְרָה (Psa. 119.167), שִׁמְרָה (Job 10.12). It is for this reason that they were not included in the exceptions, since the rule is referring only to forms with *merkha*.¹⁵⁸ The *merkha* evidently marks a secondary stress. The second two exceptions (A: שְׁבָרָה, Psa. 69.21; A: נְטוּלָה, Psa. 140.6) are past forms. As remarked, such past forms regularly had silent *shewa* after the long vowel. The exceptional feature here, therefore, is the fact that they contain *merkha*. The fourth exception (A: יְרָאָתְךָ, Prov. 8.13) is evidently listed since a

¹⁵⁸ *Hidāyat al-Qāri'* states that in some codices *ga'ya* is written slanting either to the right or to the left (Eldar 2018, 76–77). This would result in signs resembling the shapes of *tifha* and *merkha* respectively. See also short version, edition in vol. 2 of this book, §II.S.9.0. Moreover, *ga'ya* is sometimes referred to as *ma'rikh* in some sources (Wickes 1887, 24; Ben-David 1957b, 390–91). Given the exclusion of the forms שִׁמְרָה (Psa. 119.167) and שִׁמְרָה (Job 10.12) from the list of exceptions to the rule discussed by *Diqduqe ha-Te'amim*, however, it appears that the discussion concerns the accent *merkha*.

merkha occurs on an originally short *hireq* without the *shewa* being made vocalic as happens elsewhere.

Kitāb al-Khilaf reports differences between Ben Asher and Ben Naftali with regard to the occurrence of phonetic *ga'ya* and the reading of *shewa* in forms of the type discussed in this section, e.g.¹⁵⁹

Ben Asher: אֲשֶׁר כִּסְמָם שׂוֹא (L: כִּסְמָם שׂוֹא ‘like a false divination’ Ezek. 21.28)

Ben Naftali: כִּסְמָם שׂוֹא

In some cases, manuscripts with compound Babylonian vocalization that represent the Tiberian reading tradition such as I Firk. Evr. I B 3 mark a vowel as short where L and A have a *ga'ya*, e.g.

L, A: סַבְכֵי [si:və'χe:] ‘the thickets of’ (I Firk. Evr. I B 3 סַבְכֵי [sivχe:] Isa. 10.34)

I.2.5.9. Marking of *Shewa* at the End of a Word

The *shewa* sign marks a vowelless consonant in the coda of a syllable in the middle of a word, but a vowelless consonant at the end of a word is generally not marked by a *shewa* sign, e.g.

בְּרֵאשֶׁת [ba're:ʃi:iθ] ‘in the beginning’ (Gen. 1.1)

אֱלֹהִים [ʔelo:hi:im] ‘God’ (Gen. 1.1)

הָאָרֶץ [ha:'arət͡s] (Gen. 1.1).

¹⁵⁹ Ed. Lipschütz (1965, לה).

In the following circumstances, however, a *shewa* sign occurs on the final consonant of a word.

I.2.5.9.1. In Word-final Consonantal Clusters

When a word ends with a cluster of two vowelless consonants, both consonants are marked with a *shewa* sign, e.g.

- L: וַיָּבֹךְ [vaj'je:evk] ‘and he wept’ (Gen. 45.15)
- L: וַיִּשְׁבַּב [vaj'ji:iʃb] ‘and he captured’ (Num. 21.1)
- L: וַיִּשְׁתַּחֲזֵק [vaj'je:eʃt^h] ‘and he drank’ (Gen. 9.21)
- L: וַיִּפְתַּח [‘ja:aft^h] ‘may he enlarge’ (Gen. 9.27)
- L: וַיִּפְתַּח [vaj'ji:iʃt^h] ‘and [my heart] has been enticed’ (Job 31.27)
- L: וַיִּרְדֶּךְ [vi'je:er^hd] ‘and may he have dominion’ (Psa. 72.8)
- L: נַרְדֵּךְ ['ne:er^hd] ‘nard’ (Cant. 4.14)
- L: יַרְדֵּךְ ['ja:ar^hd] ‘he causes him to dominate’ (Isa. 41.2)
- L: אַל-תִּסְמַכֵּף [?al-‘t^ho:osp^h] ‘do not add’ (Prov. 30.6)
- L: קַשְׁתַּחֲזֵק [vat't^ha:aʃq] ‘and she gave to drink’ (Gen. 21.19)
- L: קַשְׁתַּחֲזֵק [vaj'ja:aʃq] ‘and he watered’ (Gen. 29.10)
- L: טַשְׁפֵּנָה ['qo:oʃt^h] ‘truth’ (Prov. 22.21)
- L: טַשְׁפֵּנָה ['je:eʃt^h] ‘let [not your heart] turn aside’ (Prov. 7.25)

As can be seen, such word-final clusters have falling sonority, in that the first consonant is sonorant or fricative and the second an obstruent. The Tiberian Masoretic sources state that

both *shewas* at the end of such words were silent.¹⁶⁰ According to some western medieval sources, the final *shewa* was vocalic in such words when they were not in major pause.¹⁶¹

In a number of manuscripts, including some of the earliest model codices, the *shewa* is marked on the final consonant in words of this structure only when it is a בְּגַדְכָּפָת consonant with *dagesh* but is omitted in final *qof* or *tet*, e.g.¹⁶²

קָשְׁתָּו (A, S, Gen. 29.10)

טִשְׁרֵי (Parma di Rossi 3214 [1278 C.E.], Prov. 7.25)

This practice of omission of the *shewa* by some scribes is referred to in the *Treatise on the Shewa*, where all the examples cited have final *tet* or *qof*.

It is the practice of some people (to mark *shewa*) under other letters at the end of words like קָשְׁתָּו ‘and he watered’ (Gen. 29.10, etc.), טִשְׁרֵי־אֶלְעָזָר ‘let it not turn aside’ (Prov. 7.25), and like טִשְׁרֵי־לְהֹזִין־עֲשֵׂךְ ‘to inform you of the truth’ (Prov. 22.21) All of these do not have a function and they are not necessary. They are only for embellishment so that the

¹⁶⁰ *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.2.12.14.; short version, edition in vol. 2 of this book, §II.S.5.12; and earlier Masoretic treatises, e.g. Allony and Yeivin eds. (1985, 92–93)

¹⁶¹ Cf. Chomsky (1952, 16–17).

¹⁶² Shashar (1983, 22), Ofer (1989, 318; 1993, 113–14).

letters do not remain bare of pointing, and some people do not mark them.¹⁶³

In the following examples an original word-final cluster of a *het* and a plosive *dalet* has been split by an epenthetic vowel:

L: וַיְחַד [vaj'ji:had] ‘and he rejoiced’ (Exod. 18.9)

L: אֲלַיְחָד [?al-'ji:had] ‘let it not rejoice’ (Job 3.6)

The *dalet* remains plosive, despite the preceding vowel, indicating that the *het* must originally have been vowelless and the epenthetic vowel was inserted at a late period after the rule of fricativization of בגדכפת consonants following vowels had ceased to operate. The *shewa* is marked on the final *dalet* by analogy with the vocalization of words with clusters such as יְרֻךְ, etc. Segolate forms with a medial *het* such as יְחַד ‘together’ (2 Sam. 14.16), פְּחַד ‘fear’ (Job 4.14) and שְׁחַד ‘bribe’ (Deut. 10.17), by contrast, have an epenthetic before the *dalet* that must have been inserted at an earlier period, when the fricativization rule was still operating.

I.2.5.9.2. Before a Final 'Alef in the Orthography

When a consonant that closes a syllable at the end of a word is followed by an 'alef that is not read as a consonant or vowel letter, a *shewa* sign is placed on this consonant, e.g.

¹⁶³ וקד יعملון קום תחת אחרף אכר פי אכר אלתאות מחל וישק אל ישט ומתר ליהודייך קשט ... והדה כלהא ليس תפעל שי ולא תחתאג אליהא ואנמא הי ללחסין ליא תבקא כה, אלאחרפי עריינה מן אלנקט ובעהם לא יטלחה Or 1080.13.3.2, fol. 2r).

- L: בְּגִיא [bag'ga:aj] ‘in the valley’ (Deut. 4.46)
- L: שְׁוֵא ['šə:wa] ‘emptiness’ (Exod. 23.1)
- L: וַיַּרְא [vaj'ja:aR] ‘and he saw’ (Gen. 1.10)
- L: אַלְמָנָה [he:etn̪] ‘sin’ (Lev. 19.17)

The purpose of marking the *shewa* on the penultimate letter and omitting it on the final *'alef* was to ensure correct reading, alerting the reader to the fact that only the penultimate letter should be read. This contrasts with vocalizations such as בְּשִׁיר, in which the final letter was read.

The common spelling of the name ‘Artaxerxes’ exhibits a word-final consonant cluster followed by an *'alef* that is not read:

- L: אֲרַתְּחֶשֶׁן [?art'hah'ʃa:ast^b] (Ezr. 8.1)

Here there is a difference between *qere* and *ketiv*, whereby the *ketiv* represents a reading with a final vowel, as attested in Ezr. 4.7: אֲרַתְּחֶשֶׁן (Ezr. 4.7), and the *qere* is a reading without the final vowel, as attested in the *qere* note to the second occurrence of the name in Ezr. 4.7: אֲרַתְּחֶשֶׁן, שֶׁת ק, i.e. the correct orthography of the *qere* ends in תֶשׁ, without final ק. Throughout the rest of the book of Ezra the name is written אֲרַתְּחֶשֶׁן or אֲרַתְּחֶשֶׁן, without a *qere* note, but the vocalization is still clearly intended to correspond to an orthography without a final *'alef*. The vocalization, therefore, corresponds to that of a word with a final cluster such as בְּשִׁיר. This should be distinguished from vocalizations such as אַלְמָנָה, in which the final *'alef* is considered part of the appropriate orthography of the word, although

not pronounced. The *shewa* would, therefore, occur on a vowel-less consonant in the middle of the orthographic word, which follows normal vocalization practice.

In Biblical Aramaic, a vocalization similar to that of אָתָּה שָׁבֵת / אָתָּה שָׁבֵת is found before a final *he* that is not read in the word אָתָּה ‘you (ms)’ (Dan. 2.29). Here again, the vocalization corresponds to that of an orthography without a final vowel letter.

In L a *shewa* is marked on the word-final *yod* in בְּבִיאֵי ‘in the valley’ (A בְּבִיאֵי, Deut. 34.6) by analogy with the normal orthography with final *'alef* אַיִּם.

I.2.5.9.3. Second Person Feminine Singular Pronominal Suffix

When the *tav* of the 2fs verbal suffix follows a consonant with silent *shewa* and is pronounced as a stop, a *shewa* sign is marked under the suffix, e.g.

- L: וַיַּלְאֵת [vijo:l'a:aðt^h] ‘and you shall bear [a son]’ (Gen. 16.11)
- L: וְתַחֲקֹתְּךָ [s'ç:ha:ç:at^h] ‘you (fs) laughed’ (Gen. 18.15)
- L: וְתִאמְרֶתְּךָ [vç?ç:ma:ar^h] ‘and you (fs) will say’ (Jud. 4.20)
- L: תַּלְקַטְּתָּ [liq'qa:at^h] ‘you gleaned’ (Ruth 2.19)
- L: וְתַלְכַּתְּךָ [vç:ha:l'a:axt^h] ‘and you should go’ (Ruth 2.9)

This is analogous to the marking of *shewa* on the final consonant in clusters in words such as וַיִּשְׁבַּת and וַיִּשְׁבַּת (§I.2.5.9.1.) except that clusters ending in the *tav* of the 2fs suffix regularly oc-

cur in verbs ending in a strong consonant and they are not restricted to clusters with falling sonority, as shown by cases such as **תִּטְקֹלֶת**. It is possible that the practice of marking a *shewa* on a final consonant in all contexts originated in the 2fs plosive verbal suffix and the primary motivation for this was to distinguish it clearly from the 2ms verbal suffix **תָ-**. It was then extended to word-final root consonants with *dagesh*, probably first to *tav* in forms such as **תִּשְׁׁבַּחֲתָה**, and subsequently elsewhere, in forms such as **וַיִּשְׁׁבַּחֲתָה** and **וַיִּשְׁׁבַּחֲתָה**. Finally, it was extended to other word-final consonants in clusters, as in **קְשֻׁתָּה**, by analogy with forms such as **בְּנֵשֶׁבֶת**.¹⁶⁴

The form **וַיְלִدְתָּה** ‘and (you) will give birth to’ (Gen. 16.11) should be interpreted as a feminine singular participle (equivalent to **יָלִידָתָה**), and so the final *tav* is the feminine nominal inflection rather than a verbal suffix. In **יָשַׁבְתָּה** ‘dwelling in’ (Jer. 22.23) and **מִקְנֵתָה** ‘nested’ (Jer. 22.23), which are likewise participles, there is a difference between *ketiv* and *qere*, the final *yod* being the orthography of the *ketiv* but not read in the *qere*.

When the 2fs suffix follows a vowel in a final weak verb, the *tav* is fricative and is not marked with *shewa*, e.g.

- L: **עָשָׂיתָ** [as'iθ] ‘you have done’ (Gen. 3.13)
- L: **וְשִׁתְתָּה** [vaʃt:iθiθ] ‘and you should drink’ (Ruth 2.9)
- L: **וְצַמְתָּה** [vas'c:im'iθ] ‘and [when] you are thirsty’ (Ruth 2.9)

¹⁶⁴ For this argument see Ofer (1993, 115-117).

Sporadically in L, however, a *shewa* is marked on a final fricative 2fs suffix in weak verbs, by analogy with the marking of the *shewa* on the suffix in strong verbs, e.g.

L: תִּהְיָתְךָ [hɔ:'ji:iθ] ‘you were’ (A תִּהְיָתְךָ, Jud. 11.35)

L: וְתִּהְיֶתְךָ [vɔhɔ:'ji:iθ] ‘and you shall be’ (A וְתִּהְיֶתְךָ, Isa. 62.3)

This is found more regularly in some other early manuscripts, e.g.

S: בָּאתְךָ [bɔ:cθ] ‘you have come’ (L: בָּאתְךָ, Gen. 16.8)¹⁶⁵

II Firk. Evr. II B 94: וְשַׁתְּתִיתְךָ [vaʃɔ:'θi:iθ] ‘and you will drink’ (L: וְשַׁתְּתִיתְךָ, Ruth 2.9)¹⁶⁶

In the early model manuscript codex known as C3, *shewa* signs that were originally marked on several cases of fricative *tav* were erased by Misha'el ben 'Uzzi'el, who corrected the manuscript in many places. This suggests that the marking of *shewa* on a fricative 2fs suffix was an earlier layer of tradition.¹⁶⁷

In manuscripts with Babylonian vocalization, the *tav* of the suffix after vowels in final-weak verbs is generally fricative, as in Tiberian, but there is an isolated case of it being marked with *dagesh* in an Old Babylonian (OB) manuscript (Yeivin 1985, 350). This reflects its pronunciation as a stop by analogy with the form of the suffix on strong verbs:

¹⁶⁵ Cf. Shashar (1983, 22).

¹⁶⁶ Cf. Yeivin (1968, 370).

¹⁶⁷ For this manuscript and the correction work of Misha'el ben 'Uzzi'el see Penkower (1989). For the erasure of the *shewa* signs see Ofer (1993, 116).

תִּפְיַת [jɔ:fi:t^h] ‘you are beautiful’ (L [BHS]: תִּפְיָת, Cant. 7.7)

In verbs with final guttural radicals a late insertion of an epenthetic vowel has occurred before the final suffix leaving the tav a stop, similarly to the process we have seen above in the form **תִּזְמַח** (Exod. 18.9), e.g.

- L: **תִּعְדֹּעַ** [jɔ:'udə:nat^h] ‘you (fs) know’ (1 Kings 2.15)
- L: **תִּעְמַדֵּת** [jɔ:'umə:də:nat^h] ‘you have laboured’ (Isa. 62.8)
- L: **תִּשְׁכַּחַת** [jɔ:'χa:hət^h] ‘you have forgotten’ (Isa. 17.10)
- L: **תִּהְלַטֵּת** [hum'lə:hət^h] ‘you were [not] rubbed with salt’ (Ezek. 16.4)

The *shewa* sign is marked on the tav by analogy with verbs with a final strong radical, such as **תִּקְרַבְתָּ** (Ruth 2.9), etc. The *dagesh* in the tav indicates that the consonant was a stop. It was an ungeminated stop and the *dagesh* was read as a *dagesh lene*. This is shown by Karaite transcriptions that mark geminated consonants with an Arabic *shadda* sign but omit the *shadda* on **תִּגְדְּפַת** consonants with *dagesh lene*, e.g.

سَابِعَتْ [sab'at^h] (BL Or 2549 fol. 234r, 5 | L [BHS]:

שִׁבְעַת Ezek. 16.29 ‘you were [not] satisfied’)

It should be noted that in this manuscript the *shewa* is omitted on the tā' transcribing the tav.

The plosive *tav* and vocalization with *shewa* of the 2fs independent pronoun ﴿אַתָּה﴾ (in pause ﴿אַתָּה﴾, e.g. Gen. 12.11)¹⁶⁸ has, likewise, arisen by analogy with the form and vocalization of the 2fs suffix on strong verbs. As is the case with the *dagesh* in the suffixes, the *dagesh* in the independent pronoun ﴿אַתָּה﴾ was read as *dagesh lene* and the *tav* was not geminated.¹⁶⁹ The lack of gemination is shown by Karaite transcriptions that mark geminated consonants with Arabic *shadda*. In these manuscripts, the *shadda* sign is not marked on the *tā'* that transcribes the *tav*, e.g.

بِتْ-مِي أَتْ هِجِيْدِي [baθ-'mi: 'a:at^h hag'gi:ði:] (BL Or 2544, fol. 10r, 3 | L [BHS]: בְּתִ-מִי אַתָּה הִגִּידֵי Gen. 24.23 ‘tell whose daughter you are’)

The reading of ﴿אַתָּה﴾ with ungeminated *tav* is found also in modern oral reading traditions that distinguish between geminated and ungeminated consonants.

In the Karaite transcriptions, the *shewa* sign is sometimes omitted on the *tā'* that transcribes the *tav* of ﴿אַתָּה﴾, e.g.

وَاتْ [va'[?]a:at^h] (BL Or 2549 fol. 226r, 1 | L [BHS]: אַתָּה Ezek. 16.7 ‘and you’)

¹⁶⁸ In L the *shewa* is omitted in ﴿אַתָּה﴾ (Ruth 3.9).

¹⁶⁹ Some reference grammars, such as Bergsträsser (1918, 141), Bauer and Leander (1922, 219–20), erroneously claim that the final *tav* of the independent 2fs pronoun was geminated by analogy with the 2ms independent pronoun ﴿הִתְּהִנָּה﴾. The analogy, however, was with the 2fs verbal suffix, which was not geminated.

أَتْ [?'a:at^h] (BL Or 2549 fol. 238v, 2 | L [BHS]: אָתָּה Ezek.

16.45 ‘you’)

A similar type of vocalization is found in the 2fs suffix conjugation of the verb יְנַתֵּן ‘to give’, e.g.

L: يَنْتَهُ ‘you (fs) gave’ (Ezek. 16.36)

In contrast to the independent pronoun אָתָּה, the final *tav* in this form was pronounced geminate, as demonstrated by Karaite transcriptions, e.g.

نَاتَّاٌتْ [no:'θa:att^h] (BL Or 2549 fol. 235r, 2 | L [BHS]: يَنْتَهُ

Ezek. 16.36 ‘you (fs) gave’)

This form, therefore, had a final consonant cluster.

I.2.5.9.4. Final Kaf

A *shewa* sign is regularly written on a vowelless word-final *kaf*, e.g.

L: וְשֻׁמְךָ ‘and darkness’ (Gen. 1.2)

L: וַיְבָרֶךְ ‘and he blessed’ (Gen. 1.22)

L: בְּתוֹךְ ‘within’ (Gen. 2.9)

This practice is likely to have originated as a means of clearly distinguishing the 2fs possessive suffix from the 2ms possessive suffix, both of which are written without a final vowel letter, e.g.

L: קִחְתָּךְ ‘your (fs) brother’ (2 Sam. 13.7)

L: קִחְתָּךְ ‘your (ms) brother’ (2 Sam. 2.22)

The marking of the *shewa* was then extended to all occurrences of final *kaf*. This explanation is found already in the *Mikhhol* of David Qimhi (1160–?1235):¹⁷⁰

But the *kaf* of the feminine pronoun, as in יְדָךְ ‘your (fs) hand’, רַגְלָךְ ‘your (fs) leg’, עֵינָךְ ‘your (fs) eye’, אֶזְגָּךְ ‘your (fs) ear’, is pointed with *shewa* since there is a possibility of erring and reading *qames*, although a soft letter (i.e. *mater lectionis*) is not written after it. Therefore, they always pointed the *kaf* that designated the feminine with *shewa*. In conformity with the way they customarily pointed this *kaf* they regularly pointed also a root letter *kaf* at the end of a word, as in שִׁפְךְ ‘pouring’, חֹשֶׁךְ ‘darkness’, הַרְחֵךְ ‘way’. The *kaf* in these are like the *resh* of אָמָר and the *lamed* of אָכְלָה, but they did not point the *resh* and the *lamed* whereas they pointed the *kaf* (with *shewa*).¹⁷¹

I.2.5.9.5. Further Cases in L

In L there are two cases where a *shewa* sign is marked at the end of a word that is linked to the following word by *maqqef* and does not fall into any of the categories mentioned above:

L: הַדְּדִירְמוֹן ‘Hadadrimmon’ (A, C: הַדְּדִירְמוֹן, Zech. 12.11)

¹⁷⁰ Cf. Ofer (1993).

¹⁷¹ David Qimhi, *Mikhhol* (ed. Rittenberg, 1862, 139b), Chomsky (1952, 17) אָבֵל כִּי נִזְנִי הַנִּקְבָּה כְּמוֹ יְדָךְ רַגְלָךְ עֵינָךְ אֶזְגָּךְ יִנְקֹדוּ בְשׂוּאָא כִּי יִשְׁ דָּרְךְ לְטֻעוֹת בּוֹ: שְׁתַקְרָא קְמַץ אַעֲפָפֶשׁ שְׁאַין אֶתְּנָהָרָתְּ כְּתוּבָה אַחֲרִיהָ לְפִיכְךָ נִקְדוּ גַּבְּכִיְּנִים הַנִּקְבָּה בְשׂוּאָא לְעוֹלָם וְלְפִי שְׁהַרְגִּילָה בְנִקְיָדָת זֶאת הַכִּיְּנִקְדוּ גַּבְּכִיְּנִים הַשְּׁרָשִ׀ית בְשָׁאַחֲרִית הַמְלָה לְעוֹלָם כְּמָה שְׁפָךְ חֹשֶׁךְ דָּרְךְ הַנְּהָה הַכִּיְּנִקְדוּ גַּבְּכִיְּנִים בְּהָם כְּמוֹ רַיִ'שָׁ אָמָר וְלִמְדָד אָכְלָה וְלֹא נִקְדוּ הַכִּיְּנִים.

L: קָבְלָעַם ‘in front of the people (?)’ (A: קָבְלָעַם, 2 Kings 15.10)

I.2.5.9.6. Non-Standard Tiberian Manuscripts

Many manuscripts with Non-Standard Tiberian vocalization exhibit patterns of occurrence of *shewa* on word-final letters that can be regarded as further extensions of the principles of marking *shewa*.

In some manuscripts with Non-Standard Tiberian vocalization, a *shewa* sign is marked regularly on the fricative *tav* of the 3fs verbal suffix, e.g.

בָּאתְ (T-S A12.1, Blapp 2017, 80 | L [BHS]: בָּאת Ruth 2.12
‘you have come’)

וְגַלִּיתְ (T-S A12.1, Blapp 2017, 80 | L [BHS]: וְגַלִּית Ruth 3.4
‘and you will uncover’)

וְמַתְּצֵאְ (T-S A12.1, Blapp 2017, 80 | L [BHS]: וְמַתְּצֵא Ruth 2.9
‘and [when] you are thirsty’)

The *shewa* is often written on a word-final guttural consonant that is preceded by a vowel, especially *het* and ‘ayin (§I.1.8., §I.1.16.), e.g.

וְתַשְׁבַּחְ (T-S A11.1, Blapp 2017, 48 | L [BHS]: וְתַשְׁבַּח Job 39.14 ‘and she forgot’)

וְיִבְרֹחְ (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: וְיִבְרֹח 1 Kings 11.40 ‘and he fled’)

הַזְּعָם (T-S A13.18, Blapp 2017, 127 | L [BHS]: הַזְּעָם Psa. 90.12 ‘teach!’)

וַיִּשְׁמַע (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]:
וַיִּשְׁמַע 2 Sam. 22.7 ‘and he heard’)

אֱלֹהָה (T-S A11.1, Blapp 2017, 47 | L [BHS]: אֱלֹהָה Job 39.17
‘God’)

גַּם (Codex Reuchlinianus | L [BHS]: גַּם Isa. 13.10 ‘[does
not] give light’)

The purpose of the *shewa* here appears to be to ensure that the weak guttural letter was read and not slurred over. It marks explicitly that the letter closes a syllable, and is therefore consonantal.

Similarly, *shewa* in Non-Standard Tiberian manuscripts is often marked on final consonantal *vav* that is preceded by a vowel, to ensure that they are read as consonantal (§I.1.6.), e.g.

עַלֵּינוּ (T-S A13.18, Blapp 2017, 125 | L [BHS]: עַלֵּינוּ Psa. 89.46
‘on him’)

וְשׂוֹלֵין (Codex Reuchlinianus, Morag 1959, 219 | L [BHS]:
וְשׂוֹלֵין ‘and his train’ Isa. 6.1)

Some Non-Standard Tiberian manuscripts occasionally mark *shewa* on other word-final consonants that are preceded by a vowel and not in clusters, e.g.

נָזָר (JTS ENA 2640 f. 11, Díez Macho 1971, 293-4 | L
[BHS]: נָזָר Psa. 10.18 ‘man’)

בְּהַכְלָל (JTS ENA 2640 f. 11, Díez Macho 1971, 293-4 | L
[BHS]: בְּהַכְלָל Psa. 11.4 ‘in the temple of’)

אַשּׁוּר (JTS ENA 2118 f. 14, Murtonen 1961, 55 | L [BHS]:
אַשּׁוּר Isa. 20.6 ‘Ashur’)

בְּמַזְפֵּת (T-S A13.20, Blapp 2017, 155 | L [BHS]: בְּמַזְפֵּת Psa. 71.7 ‘like a sign’)

In a number of Non-Standard Tiberian manuscripts of non-biblical texts vocalizers have marked *shewa* on all word-final consonants, e.g. in the liturgical text *Mahzor Vitry*: בָּ, רָכָךְ, טָעָם, לְגָנָן, עֲבָדִים (Eldar 1975, 194).

In some Non-Standard Tiberian biblical manuscripts *shewa* is marked on word-final *he* and *'alef* that are *matres lectionis* and are not realized as consonants, e.g.

שָׁבְרָה (T-S A13.20, Blapp 2017, 156 | L [BHS]: שָׁבְרָה Psa. 69.21 ‘has broken’)

חֲנַשְׁתָּה (T-S A13.20, Blapp 2017, 156 | L [BHS]: חֲנַשְׁתָּה Psa. 70.6 ‘hasten’)

לְבוֹזָא (T-S A13.20, Blapp 2017, 156 | L [BHS]: לְבוֹזָא Psa. 71.3 ‘to come’)

It seems that this practice arose by extending the use of *shewa* that marks syllable closure to letters that are pronounced as vowels without consonantal realization. A similar development is attested in Non-Standard Tiberian manuscripts in the use of *mappiq* on *he* and *dagesh* on *'alef*, which are in some cases extended from marking consonantal *he* and *'alef* to the marking also of *matres lectionis he* and *'alef* (§I.1.1., §I.1.5.). This type of extension of the marking of *shewa* is sometimes applied also to word-internal *matres lectionis*, e.g.

נְאָטָחָן (T-S NS 18.5, Arrant 2020 | L [BHS]: נְאָטָחָן Num. 14.40 ‘we have sinned’)

מַלְאָכָתּוֹ (T-S A22.54, Khan 1991, 855 | L [BHS]: מַלְאָכָתּוֹ Gen. 2.2 ‘his work’)

וַתֹּאמֶר (T-S A22.54 | L [BHS]: וַתֹּאמֶר Gen. 3.2 ‘and she said’)

דָּלִים (T-S A12.1, Blapp 2017, 80 | L [BHS]: דָּלִים Prov. 29.14 ‘the poor’)

לֹאמֶר (T-S AS 8.123, Arrant 2020 | L [BHS]: לֹאמֶר Lev. 24.1 ‘saying’)

Such a marking of *shewa* on word-internal *mater lectionis* has been identified in manuscripts of European provenance containing non-biblical Hebrew texts with a Non-Standard Tiberian type of vocalization, e.g. מְפַאֵן, צָאנֵך, מַלְאָכָת, מַצְאָתִי, רַאשִׁית, לְאָמֹר.¹⁷² In some European manuscripts, *mater lectionis* 'alef is marked by *hatef patah* instead of *shewa*, e.g. בָּאָתִי, רַאשָׁׂׂן, רַאשִׁי.¹⁷³ This is unlikely to reflect a consonantal realization of the 'alef but rather has arisen by analogy with the use on *mater lectionis* of the *shewa* sign, which alternates with *hatef patah* in other contexts.

Another Non-Standard Tiberian vocalization practice found in non-biblical texts is to mark *shewa* on a consonant preceding a *mater lectionis* that is marked by a vowel sign. This is found before *shureq*, which is always marked on *mater lectionis vav*, e.g. in Mishnaic texts: אַבְדּוֹ, הַמִּבְּחָר (Sharvit 1968, 24), and also before other *mater lectionis* on which a vowel is marked contrary to the standard Tiberian system, e.g. כָּאָן (Bar-Asher 1980, 48). Alternatively, when the *mater lectionis* has a vowel sign, the preceding

¹⁷² Eldar (1975, 195; 1978, 68–69), Bar-Asher (1980, 48).

¹⁷³ Eldar (1978, 69), Beit-Arié (1965, 38).

consonant is sometimes also marked with a vowel sign, e.g.

בָּנָן, וּבְצָאן, בְּצָאתִי.¹⁷⁴

I.2.6. SYLLABIFICATION AND METRICAL STRUCTURE OF WORD-FINAL SYLLABLES

The syllable structure of words with final consonantal clusters such as וַיָּרַךְ ‘and he wept’ (Gen. 45.15), וַיִּשְׁבַּח ‘and he captured’ (Num. 21.1) and לְקַטֵּל ‘you gleaned’ (Ruth 2.19) can be analysed as having extra-syllabic consonants. These would have the underlying structure /vaj.jev.k/, /vaj.jiʃ.b/ and /liq.qat^f.t/, in which the final consonant of the cluster at the periphery of the word is extrasyllabic. This can be compared to the analysis of the underlying syllable structure of a word such as לֹאֶל as /qō.l/ with an extrasyllabic final consonant (§I.2.4.). In both cases the extra-syllabicity of the final consonant is conditioned by the fact that a syllable should not have more than two morae. Words with final consonant clusters such as /vaj.jev.k/, /vaj.jiʃ.b/ and /liq.qat^f.t/ have in their final syllables a vowel without inherent length. On the phonetic level, however, the final vowel would be lengthened by stress and so it would split into a C᷑. VC structure with an epenthetic vowel after the long vowel, as is the case with /qō.l/ ['qo:ol] and /lev/ ['le:ev], viz. [vaj.'je:.ev.k], [vaj.'ji:.iʃ.b] and

¹⁷⁴ Eldar (1975, 195), Bar-Asher (1980, 48). These three types of double vocalization of vowels marked by *matres lectionis* are also found in medieval Judaeo-Arabic texts that are vocalized with Tiberian vowel signs, see Khan (1992a).

[liq.^fqa:^fat^f.t]. The consonant on the word-final periphery would remain extrasyllabic at the phonetic level.

As is the case with words such as ['qo:ol] and ['le:ev], on the level of metrical parsing the unstressed epenthetic in words such as [vaj.^fje:.ev.k], [vaj.^fji:.iʃ.b] and [liq.^fqa:^fat^f.t] would belong together with the preceding long vowel in a trochaic foot. The final consonant can be considered to have been extrametrical:

[vaj. 'je:.ev.k]

(*) (^* .)

Word-final extrasyllabic consonants can be posited to exist also in segolate forms, e.g. מֶלֶךׁ ['mε:.leχ] ‘king’, ספר ['se:.fer] ‘book’, שְׁמָךׁ ['qo:.ðεʃ] The underlying forms of these would be /mel.χ/, /sef.r/, /qoð.ʃ/, and the final extrasyllabic consonant would be syllabified by an epenthetic on the phonetic level.¹⁷⁵ As is the case with other epenthetics, we should assume that these epenthetics did not stand in an independent foot. They would be analogous to the epenthetic of words such as ['qo:ol] and be weak syllables bound prosodically to the previous strong syllable in a trochaic foot:

/mel.χ/

['mε:.leχ]

(^* .)

¹⁷⁵ Such underlying representations without the epenthetic vowel are adopted in analyses of Tiberian Hebrew made within the framework of generative phonology and optimality theory, e.g. Prince (1975), Greenstein (1992), Malone (1993), Coetzee (1999), Edzard (2013).

The vowel in the underlying syllable structure /məl.χ/ is short. After the insertion of the epenthetic, it has become lengthened. A stressed vowel would have been lengthened. A further factor that brought about this lengthening is likely to have been a metrical constraint on having a sequence of a light CV syllable and a following weak epenthetic syllable.

A similar analysis would apply to forms such as **לֹא־חִנְצַחֲלָה** ‘let it not rejoice’ (Job 3.6) and **שָׁבַת חִנְצָה** ‘you (fs) have forgotten’ (Isa. 17.10), which also end in trochaic feet:

/jih.d/	/ʃɔ:rχah.t/
[ji:..had]	[ʃɔ:χa:.hat]
(^{1*} .)	(*) (^{1*} .)

Some nouns that derive historically from a *CVCC pattern have stress on the syllable containing the vowel that breaks the final cluster. This applies, for example, to nouns with a medial *'alef*, e.g.

בָּאֵר	‘well’	< *bi'r
זָאֵב	‘wolf’	< *ði'b
שָׁאֵשׁ	‘stench’	< *bu's̚

In such forms an original epenthetic takes the main stress. The original short lexical vowel is left without stress and comes to be in a metrically weak CV syllable, and so is represented by *shewa*. Since the second vowel is stressed it should be assumed that, although originally an epenthetic, it has become reanalysed as a lexical vowel in the underlying form of the word:

*bi'r > **בָּאֵר** [be'¹e:eR] /b?e.r/

This process of shifting the stress to the epenthetic is regular with medial-*'alef* nouns, in which it may have been motivated by an effort to preserve the weak *'alef*. By making the *'alef* the onset of a strong stressed syllable of a foot, i.e. בָּאֵר [be'ʔe:er] (.*.) rather than of a weak unstressed syllable of a foot, as in מְלֵךְ ['me:.leχ] (.*.) the articulation of the *'alef* is strengthened. The same orthoepic metrical principle is likely to have given rise to the *sere* on initial *'alef* in forms such as אַזְוֹר 'girdle' and אֲבוֹס 'crib', which have a קֶטֶל and קֶטֶל morphological pattern respectively. The *'alef* with *sere* is a metrically strong syllable (*), whereas an *'alef* with *hatef segol*, which would have been expected according to the morphological pattern, would have been a metrically weak syllable. The same explanation holds for the vocalization of *'alef* with *sere* in verbal forms such as תָּאַהֲבָה 'you love' (Prov. 1.22), where a *hatef segol* would be expected (cf. אַהֲרֹן Zech. 8.17). Note also the form אֲכַלְתָּה 'it consumes him' (Job 20.26), where this process has preserved the *'alef*, which is normally weakened and after prefixes (cf. יְאַכְלָה Isa. 62.9 'they will eat it').

Stress shifts to the epenthetic syllables also in many nouns with a final weak radical, e.g.

פָּרִי	'fruit'	< *pary
גָּדִי	'kid'	< *gady
בָּכִי	'weeping'	< *baky

In such cases, the motivation for the stress shift appears to be that the long vowel created by the combination of the epenthetic and the final weak radical was favoured for stress placement over the short vowel in the first syllable.

Clusters of two consonants on the phonetic level occur in principle on word peripheries. This includes the word-final periphery, as in the forms discussed above, and the word-initial periphery, as in the isolated case of the numeral ‘two’ שְׁתִּים / *š̄t̄im*, in which the *shewa* is silent: ['ʃta:jim], ['ʃte:]. As with word-final clusters, the initial consonant of the word-initial cluster in this word can be analysed as extrasyllabic on the underling and phonetic level, viz. /ʃ.tē/ [ʃ.'te:] (§I.2.5.3.).

It has been shown (§I.2.5.6.) that the parsing of a form such as /qō.l/ [qo:ol] with a long vowel followed by an extrasyllabic consonant, which is realized phonetically as a strong syllable followed by a light epenthetic syllable in a trochaic foot (* .), has been extended by analogy into word-internal position in cases where a long vowel is followed by silent *shewa*, e.g. שְׁמַרְוָה /ʃ̄m.m.rū/ [ʃ̄m..əm.'rū:] (* .) (*).

There are a few cases of the extension of the syllabic structure and/or metrical pattern of underlying word-final consonantal clusters to word-internal position. One such case is that of forms with word-internal gutturals in a closed syllable such as יָדְעָם [ja:.əm.'ðu:] ‘they stand’. The metrical structure of this can be represented as follows:

[ja:.əm. 'ðu:]

(* .) (*)

The word would consist of two feet, the first of which is trochaic. Evidence for this is the fact that the accent can be retracted to the vowel before the guttural by the process of *nesiga* (Revell 1983), e.g.

נָעַמְדָה יְחִידָה [‘na:.fam.ðɔ:] ‘let us stand’ (Isa. 50.8)

The normal rule of *nesiga* is that the accent cannot be retracted further than the first syllable before the final syllable that has a full vowel sign, so long as this syllable has a long vowel. This means that the accent in a word such as **הַקְבִּיחַ** ‘the cubit’ [hɔ:.?am.mɔ:] cannot be retracted to the initial syllable. We propose that the reason *nesiga* is possible in a form such as **נָעַמְעַן** ['na:.fam.ðɔ:] but not in a word such as **הַמְּמֹתָה** [hɔ:.?am.mɔ:] is that *nesiga* takes account of metrical feet rather than phonetic syllables. The rule is that the accent cannot be moved back further than the foot immediately preceding the word-final foot. These two words have different metrical structures, **נָעַמְדָה** has two feet, whereas **הַמְּמֹתָה** has three:

na:	fam.	ðɔ:
(*)	(.)	(*)
hɔ:	?am.	mɔ:
(*)	(*)	(*)

Nesiga can take place in a word such as **גָּחַקְתִּי מֵעִי** ‘it is far from me’ (Job 21.16) since it too consists of two feet:

[‘rɔ:.	ḥa.qɔ:]
'(*)	(. *)

The trochaic foot in a word such as **גָּרְנַעַן** [ja:.fam.!ðu:] (* .) (*) is analogous to that of a segolate form such as **צָלְמָאֵל** ['me:.leχ] (* .) ‘king’ or **נֶעֲרָה** ['na:fərə] (* .) ‘youth’, in which the final syllable is unstressed.

A form such as **יָמֹעַ** [ja:.sam.'ðu:] can be assumed to have the underlying phonological form /jaʃmðū/, which would correspond to the syllable structure of the equivalent morphological form in strong verbs, e.g., **יִשְׁמַרְוּ** /jiʃmrū/. The process of derivation would be as follows:

/jaʃmðū/ > (i) [ja.ʃam.ðū] > (ii) [ja:.sam.'ðu:]

In stage (i), an epenthetic is added after the guttural in the phonetic form and the guttural is syllabified in a closed syllable with the following consonant. In stage (ii), the vowel of the preceding syllable is lengthened due to a metrical constraint against having a sequence of a light CV syllable followed by weak unstressed epenthetic syllable. This would be similar to the proposed derivation of forms with gutturals such as **הַלְּהָ**, viz. /heʃ.lū/ > (i) [he.ʃe.'lu:] > (ii) [he:.ʃe.'lu:] (§I.2.5.4.).

Another case of a word-internal trochaic foot is in proper names such as **בְּרֵכִיהָ** [be:ʁɛχ'jə:hu:] ‘Berechiah’ (1 Chron. 2.24). Here the syllabification and metrics of a word-final segolate pattern have been extended to word-internal position:

/ber.χ.jə.hu/
 [be:.ʁɛχ 'jə: hu:
 (*.) '(*) <*>

In the Babylonian reading tradition, the vowel before the epenthetic has not been lengthened but rather reduced (Yeivin 1985, 1082):

בְּרֵכְיהָ [braχ'jə:hu:]

This can be compared to the lack of lengthening in Babylonian pronunciation of the vowel before the epenthetic of gutturals in forms such as נָעָרָה ‘young woman’, which was read as [nafa'rɔɔ:] or [nafa'rɔɔ:] (§I.2.5.4.).

One possible case of a word-internal syllable-final consonant cluster is reflected by the vocalization of the Hebrew gentilic ‘the Jerahmeelite’ in L. In most cases this is vocalized הַיְרָחִמְמָאֵלִי [haʃ.ja.ʁaħ.me.?e:.li:]. In 1 Sam. 27.10, however, it is vocalized in L as follows:

L: הַיְרָחִמְמָאֵלִי (A: הַיְרָחִמְמָאֵל, 1 Sam. 27.10)

This was also the original vocalization of the form in 1 Sam. 30.29, though it has been corrected to הַיְרָחִמְמָאֵל. The vocalization הַיְרָחִמְמָאֵל is found in 1 Sam. 27.10 and 1 Sam. 30.29 also in other manuscripts written by the scribe of L, Samuel ben Jacob, showing that it is unlikely to be a random error (Phillips 2017, 16). This vocalization, therefore, may be a case of a word-internal consonant cluster at the end of a syllable analogous to word-final clusters in words such as נָרָךְ ‘nard’ (Cant. 4.14) and יְרָךְ ‘he causes him to dominate’ (Isa. 41.2). As in the word-final clusters, the word-internal cluster in הַיְרָחִמְמָאֵל would have falling sonority. The cluster would come before the boundary between the stem of the name and the theophoric element (cf. the remarks concerning the name Eliphelehu in §I.2.5.7.6.).

I.2.7. LEXICAL *HATEF* VOWELS

Some short vowels in open syllables are lexical vowels rather than epenthetic vowels. This applies mainly to a set of vowels

represented by *hatef qames*. In such cases, the *hatef qames* [ɔ] preserves the rounded quality of a historical lexical vowel of the morphological form and there has not been quality reduction and neutralization. They should be represented as the phoneme /o/ with unspecified length in the phonological form of the word. In conformity with the normal rule, this phoneme is realized as [ɔ] in unstressed syllables, and [o:] in syllables with the main stress, e.g.

הַקְדְּשִׁים [haq.ɔq.ɔɔ.ɔi.im] /haq.qo.ɔɔ.ɔi.m/ (2 Kgs 12.19
‘the holy things’) < **qoðɔs̥im*; cf. sing. קָדֵשׁ ['qo:ðeʃ̥]

חֶרְבֹּות [ho.ɾe.ɔɔ.ɔθ] /ho.r̥e.vō.θ/ (Psa. 9.7 ‘waste places’)
< **hurvānōθ*; cf. sing. חֶרְבָּה [hoR'bɔ:] Lev. 26.31 ‘waste place’)

אֲזַרְפָּה [ʔes̥.s̥.ɔ.ʁe.ən.nɔ:] /ʔes̥.s̥.ɔ.ren.nɔ/ (Isa. 27.3 ‘I
guard it’) < **esorennō*; cf. אַזְרָךְ [ʔes̥.s̥.ɔ:or̥] (Psa. 119.69 ‘I
keep’)

חָלֵי [ho.li:] /hol.j/ (‘illness’) < **huly*; cf. pausal form
[ho:li:] (Deut. 7.15)

רָאִי [ʁɔ.i:] /ro?j/ (Gen. 16.13 ‘seeing’) < **ru'y*; cf. pausal
form רָאִי ['ʁo:i:] (1 Sam. 16.12)

וְשָׂרֵי [s̥ɔ:r̥i:] /s̥or.j/ (‘balm’) < **sury*; cf. pausal form
וְשָׂרֵי [s̥ɔ:o:r̥i:] (Ezek. 27.17)

דָּמֵי [dɔ.mi:] /dom.j/ (‘silence’) < **dumy*

חָרֵי [ho.ɾi:] /hor.j/ (‘burning’) < **hury*

In the examples cited above the *hatef qames* is the reflex of a short round historical vowel. In some cases *hatef qames* in an

open syllable is the result of the shortening of an original [o:] /ō/ or [ɔ:] /ɔ/ in an unstressed syllable, e.g.

צְפָרִים [s^čip.p^hɔ̄.r̄i:.im] /s^čip.p^ho.r̄i.m/ (Lev. 14.49 ‘birds’) < *sippōrīm; cf. sing. צְפֹר [s^čipp^ho:or̄])

כַּתְנָת [k^hut.t^hɔ̄.no:.oθ] /k^hut.t^ho.nō.θ/ (Exod. 29.8 ‘tunics’) < *kuttōnōθ; cf. sing. כַּתְנָת [k^hut't^ho:nəθ]

בָּמָתִי [bɔ̄.mɔ̄.θe:] /bō.mo.θē/ (Isa. 14.14 ‘the heights of’) < *bōmōθē; cf. sing. בָּמָת [bɔ̄.mɔ̄:oθ] ‘heights’

הַחֲדֵלֶת [he:.hɔ̄.ða:al.t^hi:] /hεε.ho.ðal.t^hi/ (Jud. 9.9. ‘shall I cease?’) < *hɔ̄'ðālti

There are some cases where the *qere* has a lexical *hatef qames* where the *ketiv* has a *mater lectionis vav*, e.g.

Neh. 13.23: *ketiv* אֲשֻׁדְיוֹת עַמּוֹנִיּוֹת, *qere* אֲשֻׁדְׂדוּיָה ‘Ashdodite, Ammonite (women)’

The *ketiv*, in such cases, would seem to reflect a variant reading in which a historical long /ō/ had not been shortened.

Some words with *hatef qames* in an open syllable exhibit variants in which the reduction to an epenthetic has taken place. This is seen, for example, in the vocalization הַקְדָּשִׁים ‘the holinesses’ (Ezek. 44.13) instead of the more common הקְדָשִׁים. Compare also וְאַזְרָנָה (Psa. 119.33 ‘and I will keep it’) to אַזְרָנָה (Isa. 27.3 ‘I guard it’), and שְׁבָلִי ‘branches of’ (Zech. 4.12), which seems to be the same lexical item as שְׁבָלִים ‘ears of grain’ (Gen. 41.5). In some cases, the variants are differences between Masoretic authorities. Misha’el ben ‘Uzzi’el, for example, in his *Kitāb al-Khilaf* records a variation between the reading of Ben Asher

אֶכְתָּבֹנָה ‘I will write it’ (Jer. 31.33) and that of Ben Naftali (Lipschütz 1965, 15).

Yeivin (1980, 283) identifies some cases of *haṭef segol* on non-guttural consonants as a lexical vowels ('morphological use' in his terminology). These are found mainly in Biblical Aramaic, e.g. בָּנִיתָה (Dan. 4.27 ‘I built it’), קָרַי (Ezra 4.18 ‘it was read’), גָּלַי (Dan. 2.30 ‘it was revealed’). A Hebrew example is מִבְצָלָלִים (A, C 2 Sam. 6.5 ‘and with cymbals’). L has simple *segol* here: וּמִבְצָלָלִים. It is not clear, however, whether any of these preserve the original quality of a lexical vowel or whether they reflect some kind of assimilation to the phonetic environment.

The qualities of *haṭef qameṣ* [ɔ] and *haṭef segol* [ɛ] share the property of being lax vowels, in that they were produced in the central vowel space. Phonetic studies of other languages have shown that, all other things being equal, unstressed lax vowels are shorter than unstressed tense vowels.¹⁷⁶ This feature of the lax vowels [ɔ] and [ɛ] could have been the principal reason why the retention of their qualities was allowed in conditions where tense vowel qualities were reduced.

In some manuscripts, a *shewa* sign is marked where L has a lexical vowel represented by *haṭef qameṣ*. In MS Sassoon 507 (S), for example, the plural form בְּתֻנוֹת is vocalized בְּתֻנוֹת. ¹⁷⁷ The treatise *Diqduqe ha-Te‘amim* (ed. Dotan 1967, §19) states that some scribes wrote *shewa* rather than *haṭef qameṣ* in the words מִרְחַבְּיִם and בְּתֻנוֹת, where the *haṭef qameṣ* represented a lexical vowel. The following passage from *Hidāyat al-Qāri’* also refers to the practice

¹⁷⁶ For example, Delattre and Hohenberg (2009).

¹⁷⁷ Yeivin (1968, 35), Shashar (1983, 21).

of some scribes to mark short lexical vowels in open syllables with *shewa* rather than a *hatef* sign:

It is said ... that some scribes wanted to remove uncertainty from places that may lead to error and have combined a vowel with *shewa* ... because they thought that people would err in the reading of (for example) מִרְצָחִי. When some people saw *shewa* without *qameṣ* in מִרְצָחִי, they read it as *pataḥ*. If they saw *qameṣ* alone, they were at risk of giving the *qameṣ* its full length. So, the scribes decided to combine them so that this degree of uncertainty be removed. This applied also to similar cases. This is an exception to their customary practice. What supports the claim that this is the view of only some of them with regard to letters not belonging to the group of the four (guttural letters) is that in most codices one does not find what has been presented as counterevidence (i.e. the marking of *hatef* signs on non-guttural letters), but all codices are uniform in the combination of *shewa* with a vowel under the four (guttural) letters.¹⁷⁸

These variations in vocalization whereby the *shewa* sign is written instead of *hatef qameṣ* representing lexical vowels in words such as בְּתַנּוֹת and מִרְצָחִי are variations in notation of the lexical vowel rather than its reduction to an epenthetic.

The form רַאֵי [r̠a'i:] (Gen. 16.13 ‘seeing’) indicates that a *hatef qameṣ* that represents a lexical vowel does not assimilate to the quality of the vowel after a following guttural, unlike epenthetic vowels.

¹⁷⁸ *Hidāyat al-Qāri'*, Long version, edition in vol. 2 of this book, §II.L.2.12.6.

The status of these lexical vowels represented by *hatef qames* involved not only the resistance to neutralization of their historical vowel quality and to assimilation to the quality of adjacent vowels but also retention of a stronger metrical structure than epenthetics. This is demonstrated by the distribution of the allophones of *resh*. In the medieval sources, the *resh* was said to have its default uvular realization in a word such as צָרִי [s^gɔ.ʁi:] ‘balm’ (Gen. 43.11),¹⁷⁹ i.e., after an alveolar consonant with *hatef qames*. As remarked in §I.1.20., when the alveolar has vocalic *shewa* in this environment, as in the word צְרוּפָה [s^ga.r^fu:.fɔ:] ‘refined (fs)’ (2 Sam. 22.31), the *resh* was in the same foot as the alveolar and had a pharyngealized apico-alveolar realization. This reflects the fact that the domain of the conditioning of the allophones of *resh* was the foot rather than the syllable:

[(s ^g a.r ^f u:.)	('fɔ:)]
(. *)	('*)

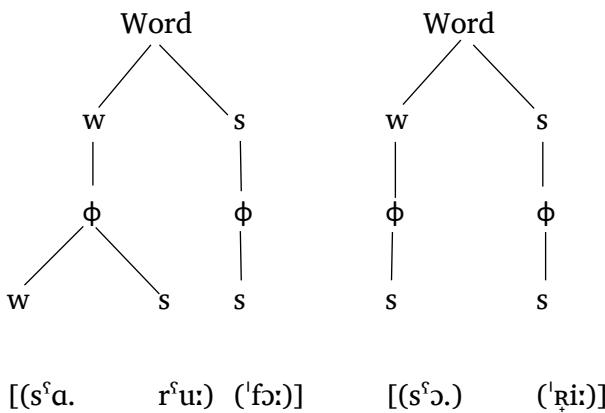
The realization of the *resh* in צָרִי [s^gɔ.ʁi:] as an uvular can be interpreted as reflecting the fact that such a *hatef qames* on a non-guttural consonant was in a separate foot from that of the following syllable:

[(s ^g ɔ.)	('ʁi:)]
(*)	('*)

The foot containing the *hatef qames* consists of light monomoraic syllable CV. Metrical phonologists term this a ‘degenerate

¹⁷⁹ See the commentary on *Sefer Yesira* by Saadya Gaon (ed. Lambert 1891, 79) and the sources cited in Khan (1995, 70–71).

foot', since feet would normally be expected to be bisyllabic or bimoraic (Prince 1990; Kager 2007, 200–201). Such degenerate feet are tolerated in some languages, but often only under certain conditions, such as peripheral position or main stress. In Tiberian Hebrew, a degenerate foot consisting of a light CV syllable is only tolerated with a lax vowel quality of *qameš* or *segol*. Furthermore, it is only allowed if it is immediately followed by a stronger bimoraic syllable (CVV or CVC). This is analogous to the fact that a light epenthetic CV syllable, represented by a *shewa* or a *hatef* vowel, is only allowed if it is bound prosodically with a following bimoraic syllable in the same foot. This can be captured by proposing metrical tree structures such as the following:



Key: w = weak, s = strong, φ = foot

These trees show that CV syllables with lexical vowels have at a higher metrical level the same rhythmic relationship with what follows as does a CV epenthetic vowel within a foot. The bimoraic syllable following a lexical vowel is stronger than the

lexical vowel on a higher metrical level, just as a bimoraic syllable is stronger than a preceding epenthetic CV within a foot.

A series of two light CV syllables is not tolerated, and a foot with the syllabic structure CVCV is not licit. So a degenerate CV foot cannot be combined with a preceding monomoraic syllable of a vocalic *shewa* of a preposition or a short /u/ of the conjunctive *vav*. In such cases the *haṭef qames* vowel is elided and in this respect it behaves like a vocalic *shewa*, e.g.

בְּמִן [bið.'mi:] (Isa. 38.10 ‘in the silence of’ versus **מַנִּי** (Isa. 62.6)

וְצָרִי [wus'.r'i:] (Gen. 37.25 ‘and balm’) versus **צָרִי** (Gen. 43.11)

Another repair strategy is to lengthen a preceding short vowel, as is found when the degenerate foot is preceded by interrogative *he*, e.g.

הֲצֹרֵר אֵין בְּגִלְעָד [ha:s'.c.'.ri:] ‘is there no balm in Gilead?’ (Jer. 8.22)

Another way in which syllables with lexical vowels behave like vocalic *shewa* is in the retraction of the accent (*nesiga*). It was established in §I.2.6. that *nesiga* operates within the domain of metrical feet rather than syllables and the general rule is that it retracts not further than the foot that immediately precedes the word-final foot. In a construction such as **בְּמִתְּשִׁיבָה** ‘the heights of the clouds’ (Isa. 14.14) with a CV syllable containing a lexical *haṭef qames* vowel, the foot of this syllable is ignored and the stress retracts back to a syllable that is the third foot from the end:

[bɔ: m θe:]

'(*) (*) (*)

It would seem, therefore, that a degenerate foot containing a short CV syllable with a lexical short vowel was ignored by *nesiga* and so such a syllable behaves like the syllable of an epenthetic vowel that does not have its own foot, as in ‘רַחֲקָה מִנִּי’ ‘it is far from me’ (Job 21.16):

[rɔ: ha.qɔ:]

'(*) (. *)

Nevertheless, there is evidence that such *hatef qames* and *hatef segol* lexical vowels were metrically stronger than vocalic *shewa* due to their being parsed in a separate foot. Some reflections of the higher degree of metrical strength of a *hatef qames* on non-guttural consonants in words like ‘מִן’ include the following.

These short [ɔ] vowels represented by *hatef qames* can receive a secondary stress, in which case they are lengthened and are represented by a simple *qames* sign in the vocalization, e.g.,

קָדְשִׁים (Exod. 29.37 ‘holinesses’)

[qɔ:.ðɔ:. 'ʃi:.im]

'(*) (*) '(* .)

Such secondary stress, marked in this case by a major *ga'ya*, occurs, in principle, two syllables back from the main stress at the end of the word (§I.2.8.2.1.). Secondary stress does not occur in words with vocalic *shewa* in this position, since the vowel is epenthetic and is metrically weak, e.g.

דברים ‘words’

[da.vɔ:.r̥i..im]

(. *) '(* .)

In some early Tiberian Masoretic manuscripts, moreover, *qameṣ* is written in place of *hatef qameṣ* also in pretonic syllables that do not take secondary stress, e.g.,

II Firkovitch Evr. II B 10: אָרְיִ ‘balm’ (Gen. 43.11, most manuscripts have אָרְיָ)

L: נַפֵּגְ ‘he will strike him’ (1 Sam. 26.10, A and most manuscripts have נַפְּגָ)

The same applies to cases of *hatef segol* that sporadically occur under non-guttural consonants, e.g.,

L: וּבְצִלְלִים ‘and with cymbals’ (2 Sam. 6.5, most manuscripts have וּבְצִלְלִים)

I.2.8. VARIATION IN THE DURATION OF LONG VOWELS

I.2.8.1. Syllables with the Main Stress and Unstressed Syllables

According to the general principles of vowel length (§I.2.2.), vowels represented by basic vowel signs are long when they are either (i) in a stressed syllable or (ii) in an unstressed open syllable. There was, however, some variation in the relative duration of such long vowels. Some details of this variation can be reconstructed from the medieval sources.

I.2.8.1.1. Stressed and Unstressed Vowels

We learn from some sources that vowels in stressed syllables were longer than long vowels in unstressed syllables. This was most clearly formulated in the grammatical treatises of the Qimḥi family, e.g. Joseph Qimḥi, *Sefer Zikkaron*:

The big vowels are always long unless the stress is adjacent to them [i.e. they are in an unstressed syllable], e.g. שָׁמֶר: the stress is on the mem, so you do not lengthen the qameṣ of the shin.¹⁸⁰

David Qimḥi, *Sefer Mikhlol*:

If adjacent to the ‘big’ vowel there is another vowel, either ‘small’ or ‘big’, and the stress falls on the letter next to it, you shorten the first vowel even though it is ‘big’, e.g. זְכָרָתִי ‘I remember for you’ (Jer. 2.2): here the stress is on the *kaf* and you lengthen the stressed vowel despite the fact that it is ‘small’. Just as you lengthen this vowel, so you shorten the vowel of the *zayin*, although this is *qameṣ*.¹⁸¹

¹⁸⁰ הגדולות יש להם עיכוב ואיחור בכל קריאות חוץ אם טעם התיבה סמוך לה כמו שמר הטעם במ"ס לא תאריך קמצות השיעין Bacher (ed.) (1888, 17): The Qimḥis classified the Hebrew vowels into ‘big’ vowels and ‘small’ vowels according to their quantity. The ‘big’ vowels were *sere*, *holem* and long *qameṣ*, *shureq*, and *hireq*. The ‘small’ vowels were *patah*, *segol*, *qameṣ hatuf*, short *hireq* and *qibbus*.

¹⁸¹ ואם תהיה בצד התנוועה הגדולה התנוועה Ed. Rittenberg (1862, 137b–138a): ואמת אשר לצד טעם אתה משפיל התנוועה הראשונה אע"פ שהיא אחרת קטנה וגדולה ובאות אשר לצד טעם אתה משפיל התנוועה הראשונה אע"פ שהיא גדולה כמו זכרתי לך הנה הטעם בכ"ז היא תנוועה קטנה ואע"פ כן תעמידנה מפני הטעם שבה ולפי שתעמידנה תשפיל קריאת הזיין אע"פ שהיא קמוצה.

Given that the Karaite transcriptions and other medieval sources¹⁸² clearly indicate that vowels in unstressed open syllables were long, these statements by the Qimḥis were probably not intended to mean that the unstressed long vowels were reduced completely to short ones but rather that these were still long relative to the short vowels although they were not as long as vowels that were lengthened by stress. This relative quantity difference between stressed and unstressed long vowels can also be inferred from other grammatical works, e.g. the epitome of Saadya's grammatical work known as *Kitāb Nahw al-Ibrānī* 'The Book of the Grammar of Hebrew', which was published by Eldar (1981, 128):

In the words: קָוְמִי אֹזֶרֶת 'Arise! Shine out!' (Isa. 60.1) you lengthen the beginning of the word because it is feminine, but when it is masculine, you say לַיּוֹם קָוְמִי לֵעָד 'for the day that I arise as a witness' (Zeph. 3.8), lengthening the end of the word because it is masculine.¹⁸³

This tendency to reduce the duration of the long vowel in unstressed syllables may explain the occurrence of *haṭef qameṣ* in place of the expected *qameṣ* in the form הַחֲדָלָתִי [hə:ħadla:t̪i:] 'shall I cease?' (Jud. 9.9) or in place of the expected *holem* in בְּמַתִּי [bə:m̪ati:]

¹⁸² E.g. Saadya's commentary on *Sefer Yesira* (ed. Lambert 1891, 76–77).

¹⁸³ מַתָּל קָוְמִי אֹזֶרֶת תִּמְדָּד אֹלֶלכְלָמָה לְאַנְהָא מְנוּגָתָה וְתוֹקָל פִּי מֵאַהֲוָא מְדֻכָּר לְיּוֹם קָוְמִי לֵעָד תִּמְדָּד אֹבֵר אֹלֶלכְלָמָה לְאַנְהָא מְ[דֻכָּר]. The concept of lengthening vs. non-lengthening/shortening in this passage and also in the extracts from the Qimḥis corresponds to the use of the terms *madd* and *qaṣr* in the Arabic *tajwid* literature to denote 'extra length' and 'normal length' respectively, cf. Bravmann (1934, 76).

[*'bɔ:mɔθe:*] ‘the heights of’ (Isa. 14.14) (cf. §I.2.7.). It is likely that orthoepic efforts were made to keep the relatively weak unstressed open syllables long and cases such as בְּמִתֵּי הַחֲדָלָתִי and בְּמִתֵּי reflect lapses in this orthoepy.

In the Karaite transcriptions, an unstressed *holem* within words is sometimes represented without a *mater lectionis*, reflecting its shortening. This applies to the following example, in which a *holem* occurs in an unstressed syllable before the secondary stress:

וְתִפְצֹתִיחֶם (BL Or 2543 MS A, fol. 7r, 8 | L [BHS]:
וְתִפְצֹתִיכֶם Jer. 25.34 ‘and your dispersions’)

In less careful reading, the duration of these unstressed long vowels was regularly reduced. This is reflected, for example, by a Karaite transcription of the Psalms (Khan 1990a, Genizah MS 13), in which long *qameṣ* in unstressed open syllables is not transcribed by an Arabic *mater lectionis*, e.g.

علَوْ (Genizah MS 13, Khan 1990a, 13 | L [BHS]: עַלְיוֹ Psa.
109.6 ‘against him’)

شَلَحْ (Genizah MS 13, Khan 1990a, 13 | L [BHS]: שְׁלַחْ Psa.
111.9 ‘he sent’).

In this manuscript and also in other Karaite transcriptions a long vowel in a closed syllable in an unstressed word bound by *maqqef* to what follows is, likewise, sometimes transcribed without a *mater lectionis*, e.g.

هذ (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הָזֶה Psa.

111.3 ‘majesty’)

هن (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הָזֶה Psa.

112.3 ‘wealth’)

يَمْ كَنَارَتْ (BL Or 2546, fol. 118v, 5 | L [BHS]: יַם־כִּנְרֵת Num.

34.11 ‘sea of Chinnereth’)

لَبْ فَرَعُو (BL Or 2540, fol. 20v, 7 | L [BHS]: لِبْ-פְּרָעֹה Exod.

7.22 ‘the heart of Pharaoh’)

بَثْ أَبُوثَامْ (BL Or 2540, fol. 17r, 2 | L [BHS]: בְּית־אֲבָתָם Exod.

6.14 ‘the house of their fathers’)

As has been remarked in §I.2.7., in some manuscripts words that normally have *hatef qameš* in a pre-stress syllable are vocalized with *qameš*, such as II Firkovitch Evr. II B 10: צָרִי ‘balm’ (Gen. 43.11, most manuscripts have צָרִי), L: יִנְפְּנֶה ‘he will strike him’ (1 Sam. 26.10, A and most manuscripts have יִנְפְּנֵה). This could reflect the application of this orthoepic measure to these vowels also, which resulted in their being lengthened. Moreover, in some medieval manuscripts with Non-Standard Tiberian vocalization this orthoepic tendency is reflected by the frequent marking of *ga'ya* on the pre-stress unstressed syllable, e.g. Vatican MS Urbinati 2 (Yeivin 1980, 250–51), e.g.

בְּשִׁלְשִׁים (L [BHS]: בְּשִׁלְשִׁים Ezek. 1.1 ‘in the thirtieth [year]’)

הִיְהָ הִיְהָ (L [BHS]: *הִיְהָ הִיְהָ* Ezek. 1.3 ‘it was’)

I.2.8.1.2. *Dehq*

In the Masoretic literature it is reported that a long vowel in word-final position is shortened by the phenomenon known as *dehq* (Aramaic: ‘compressed’). The long vowel in question is usually *qames* [ɔ:] or *segol* [ɛ:], which are lax, rather than the tense long vowels *shureq* [u:], *holem* [o:] and *hireq* [i:].¹⁸⁴ The compression takes place typically when (i) the final lax vowels *qames* and *segol* occur in a word that has the stress on the penultimate syllable and is read with a conjunctive accent or when the word has *maqqef* and (ii) the following word has stress on its initial syllable, or at least on a full vowel after an initial *shewa*, i.e. on the initial metrical foot. On account of the conjunctive accent or the *maqqef*, the first word is closely bound prosodically with the following word. When a vowel is in *dehq*, the consonant at the beginning of the following word has *dagesh*,¹⁸⁵ e.g.,

- L: וַאֲעַذֵּה בָם ‘I shall cause to witness against them’ (Deut. 31.28)
- L: עָלָיךְ פָּרָץ ‘(you breached) for yourself a breach’ (Gen. 38.29)
- L: אֶרְצָה כִּנְעָן ‘to the land of Canaan’ (Gen. 12.5)
- L: מִי-אֵלֶּה לְךָ ‘who are these to you?’ (Gen. 33.5)

¹⁸⁴ Phonetic studies of other languages have shown that, all other things being equal, unstressed lax vowels are shorter than unstressed tense vowels; cf., for example, Delattre and Hohenberg (2009).

¹⁸⁵ For further details concerning *dehq* see Yeivin (1980, 292–93).

- L: בְּמִרְעָה־טוֹב ‘in good pasture’ (Ezek. 34.14)
- L: תְּהִיה־בוֹ ‘will be in it’ (Josh. 2.19)
- L: תַּעֲשֵׂה־לְךָ ‘you make for yourself’ (Prov. 24.6)

According to *Hidāyat al-Qāri‘*, the final vowel here ‘is not dwelt upon or prolonged in pronunciation,’¹⁸⁶ ‘it does not have an exhalation of breath but is very compressed.’¹⁸⁷ In an anonymous Masoretic treatise, the syllable containing a vowel in *dehqiq* is described as ‘shortened’ (*makhtūf*).¹⁸⁸ The vowel can be represented, therefore, as half-long, e.g. בָּם [ba?m] / אַעֲזִיזָה בָּם [a?azizah b̄m] / בָּבְכָּכְם [bab̄kak̄m].

When the first word is connected by *maqqef* without an accent, *Hidāyat al-Qāri‘* refers to the construction as *’athe me-rahiq* (Aramaic: ‘coming from far’).¹⁸⁹ This is because the conjunctive accent before the *dehqiq* is further away, on the second word before the main accent, e.g.

- L: הוּא יַבְנֶה־בֵּית לְשָׁמֵי ‘He will build a house for my name’ (2 Sam. 7.13)

¹⁸⁶ לא יתאנא ולא יטול פי אלנטק בלבד אלמלך, Long version, edition in vol. 2 of this book, §II.L.1.7.4.

¹⁸⁷ ليس فيه تنفس بال هو מץיק גדא, Long version, edition in vol. 2 of this book, §II.L.1.7.4.

¹⁸⁸ Bod. Heb. d 33, fol. 16: ‘כאן אלחרףaldi תחתה נקט מבטוף: ‘the letter under which the *segol* occurs is shortened’.

¹⁸⁹ *Hidāyat al-Qāri‘*, Long version, edition in vol. 2 of this book, §II.L.1.7.5.

L: הַלְמָתִים תַעֲשֵׂה-פָּلָא ‘Do you work wonders for the dead?’ (Psa. 88.11)

L: סֻוֶּרֶה שָׁבַה-פָּה ‘Turn aside, sit here’ (Ruth 4.1)

Some cases that are identified as *'athe me-rahiq* have a disjunctive on the second word before the main accent, e.g.

L: וְאַלְכָה אֲלֹהָה וְאַדְרָשָׁה-בָּה ‘that I may go to her and inquire of her’ (1 Sam. 28.7)

This suggests that the main conditioning factor for the compression of the vowel is not the preceding accent but rather the status of the word with *maqqef* as prosodically subordinate to the following word. So these types of cases reflect the same basic phenomenon as cases of *dehiq* where the word with the main accent is preceded by a word with a conjunctive accent. Some Masoretic treatises, indeed, use the term *'athe me-rahiq* to refer to all cases of *dehiq*.¹⁹⁰

When unstressed tense vowels, such as the high vowels *shureq* and *hireq*, occur at the end of a word in the configurations for *dehiq* that have just been described, the vowel is generally not compressed and there is no *dagesh* on the following word, e.g.

L: אֲשֶׁר הַזְרַקְתָּנוּ בְּ [ho:rəað'tʰe:nu: 'vo:] ‘through which you let us down’ (Josh. 2.18)

L: בְּנִירְתִּי בְּ[vɔ:'ha:aṛtʰi: 'vo:] ‘I have chosen him’ (1 Chron. 28.6)

¹⁹⁰ E.g. the treatise published by Baer and Strack (1879, §29). See the remarks of Dotan (1969).

In such cases where the first word ends in a tense vowel, a *ga'ya* is sporadically marked on this vowel in early manuscripts, alerting the reading to the fact that the vowel should be given its full length and should not undergo compression through *dehq*, e.g.

- L: הַיְלָלִי שַׁעַר ‘wail, oh gate’ (Isa. 14.31)

This *ga'ya* is most commonly marked when the second word begins with a guttural consonant and cannot take a *dagesh*. In such cases, compression of the final vowel does not occur whatever its quality, e.g.

- L: עֲבָדֵיךְ אֶלְהָ ‘these servants of yours’ (2 Kings 1.13)

- A: שַׁפְתָּה קָסֶף ‘you did a kindness’ (1 Sam. 15.16)

- A: רָאָיתִי אֶמְשָׁ ‘I saw yesterday’ (2 Kings 9.26)

- L: יְעַלְּמָוֹעֵם ‘the people hide’ (Lev. 20.4)

It is also marked on lax vowels before non-guttural consonants that do not take an expected *dagesh* in conditions suitable for *dehq*, e.g.¹⁹¹

- L: וְעַשֵּׂה פָּסָח ‘and he keeps the Passover’ (Num. 9.14)

- A: עַלְּהָ מֹות ‘death has come up’ (Jer. 9.20)

The *dagesh* that occurs on the first letter of the second word in *dehq* constructions, such as בְּם וְעִזָּה בְּם, marked the gemination of the consonant. This is likely to have been a strategy to mark clearly a boundary between the two words, which was in danger

¹⁹¹ For details of the occurrence of the *ga'ya* after the stress see Yeivin (1968, 188–91).

of being lost due to the shortening of the vowel (§I.3.1.9.). A short vowel was not licit in word-final position. The gemination of the consonant was a repair strategy that compensated for the loss of duration in the preceding vowel and closed the word-final syllable. This was a fortition of the onset of the syllable in the second word. This fortition, it seems, was facilitated by the fact that the syllable was strong due to the incidence on it of the main stress:¹⁹²

וְאַתָּה בֹּם
[m.ə.ʔɔ:.'fɔ:.ðɔ:b.'bɔ:]

Such a process applied also to constructions in which the interrogative word *מָה* is joined to the following word by *maqqef* such as the following:

- L: מה-זאת ‘what is this?’ (Exod. 13.14)
- L: מה-תִּתְعַנֵּל ‘what will you give me?’ (Gen. 15.2)

The fact that the vowel in the interrogative word in such constructions is *patah* can be interpreted as reflecting a complete shortening of the vowel at an early period. The long Tiberian *qameṣ* vowel /ɔ/ developed historically from a long */ā/. A short */a/, on the other hand, retained its non-rounded quality of /a/

¹⁹² A parallel to such a process of compensatory gemination of a word-initial consonant is the so-called raddoppiamento sintattico in spoken Italian, e.g. città bellissima [tʃit'a_bbèl'issima] ‘beautiful city’ (Nespor and Vogel 2012, 165–74). A parallel to the restriction of compensatory gemination to consonants following lax vowels is found in Neo-Mandaic (Häberl 2009, 76).

in the Tiberian tradition. The *patah* quality in the interrogative word reflects the shortening of */ā/ to */a/ at a period before */ā/ shifted to /ɔ/. The fact that *dehiq* constructions such as פָּמַעַנְדֵּה have *qames* in the final syllable of the first word rather than *patah* either reflects a later date of the shortening, after */ā/ had shifted quality to /ɔ/, or reflects a process whereby the long vowel did not reduce completely to a short vowel and remained sufficiently long to undergo the quality shift.

The Karaite Arabic transcriptions, most of which indicate long vowels by Arabic *matres lectionis*, represent the final *qames* and *segol* in *dehiq* constructions, with a *mater lectionis*, e.g.

واعيدا باخ (BL Or 2551 fol. 41r, 8 | L [BHS]: בָּקְעִידָה)

81.9 ‘I shall testify for you’)

ושים-كاريم (BL Or 2549 fol. 145r, 1 | L [BHS]: كَارِيمْ عَالَاهَا)

81.9 ‘and set up against it the battering rams’)

وندما-شام (BL Or 2549 fol. 64r, 1 | L [BHS]: شَامْ نَدْمَه-)

8.14 ‘and let us be silent there’)

These show that in the Tiberian reading tradition, which is what most of the transcriptions reflect, the final vowel was not fully reduced to a short vowel. This is likely to have been an orthoepic measure to prevent complete shortening.

The Babylonian tradition exhibits a lesser tendency than the Tiberian tradition for such an orthoepic measure. In many manuscripts with compound Babylonian vocalization, the vowel at the end of the first word in a *dehiq* construction is marked with

a *hitfa* sign, which indicates that it was pronounced as a short vowel (Yeivin 1985, 338), e.g.¹⁹³

הַשְׁבָּעָה לִי [hiʃʃəv̚ lli:] ‘swear to me’ (Gen. 21.23 | L [BHS]:
הַשְׁבָּעָה לִי)

בָּנָתָה בָּה [ga'rt̚ bbo:] ‘[the land] where you have sojourned’
(Gen. 21.23 | L [BHS]: בָּנָתָה בָּה)

בְּמָרְעָה טֻוב [bmarəħa tt̚ov] ‘in good pasture’ (Ezek. 34.14 | L
[BHS]: בְּמָרְעָה-טֻוב).

תִּהְיָה בָּזָה [tihya bbo:] ‘will be in it’ (Josh. 2.19 | L [BHS]:
תִּהְיָה-בָּזָה)

Greek transcriptions also reflect a full shortening of the vowel. This is seen in the transcription of the vowel corresponding to Tiberian *qameṣ* with *epsilon* in the following example:¹⁹⁴

ωσειεννα (Klostermann 1933, Heikel 1913, Gaisford 1842) |
L [BHS]: הַזְּשִׁיעָה נֵא Psa. 118.25 ‘save, I pray!’)

Likewise, in modern reading traditions the vowel in *dehiq* constructions is read as short, e.g.

Baghdad

wa^۹qbe're:haš'sam (Morag 1977, 37 | L [BHS]: שָׁם אֲקִבְרָה Gen. 48.7 ‘and I buried her there’)

Aleppo

¹⁹³ Data supplied by Shai Heijmans.

¹⁹⁴ Data supplied by Ben Kantor.

ne:lxaš'šam (Katz 1981, 30 | L [BHS]: נָלַכְה שֶׁם 1 Sam. 9.6
'let us go there')

The Karaite transcriptions show that also the *patah* of the interrogative word מַה in constructions such as מַה־זֹּאת (Exod. 13.14) was pronounced long. *Hidāyat al-Qāri'* refers to the compression of this long vowel (see below), so it can be represented as half-long, like other long vowels compressed in *dehq*,¹⁹⁵ e.g.

ما لا خ [ma· lāχ] (BL Or 2539 MS A, fol. 64r, 7 | L [BHS]:

ما له [ma· lē] Gen. 21.17 'What is to you (fs)?'

ما تَنْ لِي [ma· t̄n̄ l̄i] (BL Or 2539 MS A, fol. 57v, 8 |

L [BHS]: ما تَنْ لِي Gen. 15.2 'What will you (ms) give to me?')

ما شَمُوا [ma· ſʃa'mo:] (BL Or 2540, fol. 9r, 7 | L [BHS]:

ما شَمُوا Exod. 3.13 'What is his name?')

ما زُوت [ma· 'zzo:oθ] (BL Or 2542, fol. 60v, 11 | L [BHS]:

ما زُوت Exod. 13.14 'What is this?').

In this light, we can understand the *qere* note in Exod. 4.2:

L: מה זה קר מִזְהָה קָרָ

¹⁹⁵ Constructions with מַה־ followed by *dagesh* are considered to be 'athe me-rahiq in the Masoretic treatise published in Baer and Strack (1879, §29).

This was pronounced [ma-'zze:] in the reading tradition, as shown by the Karaite transcriptions, e.g.

מַזְאֵה (BL Or 2540, fol. 10v, 3 | L [BHS]: *qere*, *ketiv*

Exod. 4.2 ‘What is this?’)

The *qere* note indicates that the appropriate orthography for the reading [ma-'zze:] is **מה זה**, not **מוּהָ**.

There are some Karaite transcriptions that reflect a less careful reading tradition and represent the *patah* in **מַה** as short, e.g.

מַה־יִקְרָר (Genizah MS 13, Khan 1990a, 156 | L [BHS]:

‘How precious!’ Psa. 36.8)

מַה־לֹּא (Genizah MS 13, Khan 1990a, 156 | L [BHS]:

‘What ails you?’ Psa. 114.5)

Manuscripts with compound Babylonian vocalization indicate that the *patah* continued to be pronounced short in the Babylonian tradition (Yeivin 1985, 338–39):

מַה־זֹּה [ma 'zzo:θ] ‘What is it?’ (Exod. 13.14 | L [BHS]:

מַה־זֹּה)

מַה־יִשְׁעֶה [ma jje:ñɔ:sə:] ‘What will be done?’ (Exod. 2.4 | L

[BHS]: מה-יעשה)

Furthermore, there is an extant Greek transcript in Origen’s Hexapla that represents the vowel corresponding to the Tiberian *patah* with *epsilon*, indicating that it was read short:¹⁹⁶

¹⁹⁶ Data supplied by Ben Kantor.

μεββεσε' (Ambrosiana palimpsest | L [BHS]: מה־בְּצֻע Psa. 30.10 ‘what profit?’)

The lengthening of the *patah* in מה appears, therefore, to be an orthoepic measure in some core streams of the Tiberian tradition to keep the written word prosodically separate from the following word.

Hidāyat al-Qāri' classifies constructions with מה followed by *dagesh* as *dehqiq*:

The compression [of a long vowel] may occur in a word that does not have an accent but is a small word, as in מה־תאמָר ‘whatever (your soul) says’ (1 Sam. 20.4), ‘This is my son’ (1 Kings 3.23), מה־בָּרָא ‘What, my son?’ (Prov. 31.2).¹⁹⁷

According to *Hidāyat al-Qāri'*, therefore, the *patah* in מה־תאמָר (1 Sam. 20.4) and the *qames* in בְּמִן וְעַזְּדָה (Deut. 31.28) in the Tiberian tradition are both long vowels that have undergone compression. The status of the *patah* in מה as a long vowel must have been the result of later orthoepic lengthening, since the presence of the *patah* clearly shows that it had undergone shortening at some earlier period. Likewise, despite the compression described in the *Hidāya* of other vowels in *dehqiq*, efforts were made in the Tiberian tradition to retain their length, to keep them clearly separate from what follows. In traditions that had less concern for orthoepy, such as the Babylonian tradition, the vowels were read as short in both contexts.

¹⁹⁷ Long version, edition in vol. 2 of this book, §II.L.1.7.4.

When constructions with מֵה have the configuration that is optimal for minor *ga'ya*, the *patah* is marked with minor *ga'ya* and is lengthened by this musical *ga'ya* rather than by orthoepic lengthening. These constructions have disjunctive accents and the *patah* in the מֵה in the closed syllable is separated from the stressed syllable either (i) by another closed syllable, followed by vocal *shewa* or (ii) by an open syllable followed by a *hatef* with an identical quality (i.e. patterns that may be represented thus: מַתְקִלִּים and מַתְפִלִּים), e.g.¹⁹⁸

L: מֵה-נָעֹבֶד ‘What we will serve?’ (Exod. 10.26)

L: וּמֵה-תְּעַשָּׂה ‘and what will you do?’ (Josh. 7.9)

Hidāyat al-Qāri' includes the last example וּמֵה-תְּעַשָּׂה (Josh. 7.9) in the section on *dehq* indicating that the *patah* vowel was compressed. It can be represented, therefore, [uma·tta:fə'se:] with half-long [a·]. This would be compatible with minor *ga'ya*, which results in only half-lengthening of the vowel it falls on (§I.2.8.2.2.). Karaite transcriptions transcribe the *patah* in these circumstances with a *mater lectionis*, e.g.

ما ناعبود (BL Or 2542, fol. 56v, 10 | L [BHS]: מֵה-נָעֹבֶד Exod. 10.26 ‘What we will serve’)

I.2.8.1.3. The Impact of Musical Accents on Duration

The duration of a given stressed vowel relative to another stressed vowel clearly varied according to the musical accent it

¹⁹⁸ For more details concerning the minor *ga'ya* see Yeivin (1980, 244–245).

carried. It may be assumed that words with disjunctive accents, which marked a syntactic boundary, were chanted at a slower tempo than words with conjunctives. This is reflected by several phenomena connected with the occurrence of the secondary stress that will be discussed in §I.2.8.2.¹⁹⁹ Stressed vowels with disjunctives were, therefore, generally longer than those with conjunctives.²⁰⁰ Moreover, the phenomenon of pausal forms suggests that the lengthening of stressed syllables of words occurring at a major syntactic division has deep historical roots in the reading tradition.²⁰¹

The duration of a vowel also varied according to the musical motif of each accent. There are a number of allusions to differences in the length of the various accents in the Masoretic sources. *Merkha*, as its name suggests, is said to be a relatively

¹⁹⁹ The practice of speakers of a language to lengthen the final word in a syntactic phrase has been discussed in several places in the literature on phonetics, e.g. O'Connor (1973, 256–60), Klatt (1975; 1976), Wightman (1992), Berkovits (1993; 1994, referring to Modern Hebrew), Turk and Shattuck-Hufnagel (2007), Gabriel and Lleó (2011). It functions as an important signal of the grammatical structure of the utterance. In the Biblical Hebrew reading tradition the musical accents underscored prosodic features which were inherent in the language (Dresher 1994).

²⁰⁰ Cf. the words of the thirteenth-century *naqdan* Yequti'el bar Yehudah: ‘אין העמדה במשותפים כמו במלכים ולא נכו למושכם כל כך’ ‘There is no lengthening on the conjunctive accents as there is on the disjunctives and it is not correct to make them long’ (Gumpertz 1958, 145).

²⁰¹ The occurrence of *qames* in place of *patah* in pausal forms such as in שָׁמַר ‘he guarded’ (Hos. 12.13), for example, must date to a period before the */ā/ > /ɔ/ quality shift took place.

long accent.²⁰² According to *Hidāyat al-Qāri'*, the low, sustained accents,²⁰³ viz. *pashṭa*, *zaqef*, *tifḥa*, *'atnāḥ* and *silluq*, were lengthened with a concomitant modulation (*hazz*) and rise in tone (*raf'*) if the syllable upon which they fell was followed by another syllable, e.g. 'הַשְׁמִים' 'heaven' (Gen. 1.1), 'הָרָץ' 'the earth' (Gen. 1.1). If, however, they fell on the final syllable of a word, they were chanted quickly without a modulation or rise in tone.²⁰⁴ Durational differences of the stressed vowel were

²⁰² Cf. *Diqduqe ha-Te'amim* (ed. Dotan 1967, 106): מחוברת לאחותה בארכוה 'joined to its partner with a long tone', also Wickes (1887, 24), Ben-David (1957b, 390).

²⁰³ The early sources divided the accents into three groups according to the nature of their tone, two of the groups contained high tone accents and the third low tone accents; cf. Yeivin (1980, 168), Eldar (2018, 85–88).

²⁰⁴ *Hidāyat al-Qāri'*, long version (ed. Eldar 2018, 86–87): פכל לחן יבקא בUDA מלך פי אלכלמה אסתופיה ות[תוקף] פיה ולכל לחן לא יבקא בעדה מלך ארסללה ה' Every accent that has a vowel remaining after it in the word you should give its full quantity and dwell on it. Every accent after which there is no vowel remaining, however, you should read quickly and not dwell on it'. The Hebrew *Mahberet ha-Tijān*, a derivative of *Hidāyat al-Qāri'* uses the Hebrew term *hanada* (הנדאה) as the equivalent of *hazz* to denote 'modulation' (ed. J. Derenbourg 1871, 97); cf. also Hommel (1917, 95). *Hidāyat al-Qāri'* and its derivative texts only lists *pashṭa/yetiv*, *zaqef* and *'atnāḥ* in the category of low tone accent (Arabic *wad'*, Hebrew *niṣṣav*, *šeḥiyya*). The accents *silluq* and *tifḥa* are stated to have had the same properties as the low tone accents in so far as they were lengthened with a concomitant modulation and rise in tone if they fell on a penultimate syllable. See *Hidāyat al-Qāri'* (ed. Eldar 2018, 85),

doubtless occasioned also by the musical structure of the other accents, but these cannot be established from the sources with any certainty.

The conjunctive accent preceding the disjunctive accent *pashṭa* is *merkha* when the two stressed syllables are not separated by another syllable (Yeivin 1980, 196), e.g.

L: יְזַעֲרֵ אֹזֶר ‘creating light’ (Isa. 45.7)

L: הָיָתָה תֹּהֶה ‘was without form’ (Gen. 1.2)

Hidāyat al-Qāri' states with regard to such combinations:

When its word (i.e. the word with *pashṭa*) has only one vowel (as in יְזַעֲרֵ אֹזֶר), you give the *merkha* its full value and lengthen it, but when there are more (vowels) than that in the word (with the *pashṭa*) (as in הָיָתָה תֹּהֶה), the *merkha* is not lengthened.²⁰⁵

Mahberet ha-Tijān (ed. J. Derenbourg 1871, 97), *Sefer Ta‘ame ha-Miqra* (ed. Mercerus 1565, facsimile ed. 1978, Diii, a-b). The shift of *tifsha* from a high to a low tone in word final position is probably also alluded to in *Diqduqe ha-Te‘amim* (ed. Dotan, 1967, 106, 155): במהרה בא לשיחה וסמוֹך לה אַתְנָחָה לְאַחֲרָ מִתְחָה [When it occurs on the final syllable] it quickly passes to the category of low tone accents, and so the accent *’atnah* is close to its tone’.

²⁰⁵ Ed. Eldar (2018, 138): אָדָא לִם יְכֹן פִי כְּלֶמֶתָה אֶלָּא מַלְךׁ וְאֶחָד אֱسָתוּפִיתׁ: אֶלָּמָאָרָכה וְטוֹלָתָהָא וְאָדָא צָאָר פִי כְּלֶמֶתָה אֹזִיד מִן ذָלָק לֹא חֻסְחוּפָא אֶלָּמָאָרָכה. In the corresponding passage in the Hebrew *Mahberet ha-Tijān* it is stated that when the word with *pashṭa* has more than one vowel, readers ‘skip over’ the *merkha* and ‘cause its melisma to be swallowed’ (מְבָלִיעִים) (בְּנַעֲמָתָה) (ed. J. Derenbourg 1871, 95).

The reduction in the duration of the vowel with *merkha* was evidently correlated with the increased length of the vowel with *pashṭa* and the concomitant rise in tone. We learn from the descriptions of the three different categories of tone in the orthoepic treatises that the high tones had a greater intensity (magnitude of sound) than the low tones. This is clearly expressed in the following passage from the Arabic *Mahberet ha-Tijān*. The two high tones are termed *'i'lān* ('announcing') and *raf'* ('raising') and the low tone *wad'* ('laying down'): ²⁰⁶

The meaning of the term *'i'lān* is that you ... raise the pitch of the voice and 'make it known' forcefully ... The meaning of the term *wad'* is that you lower the pitch at which you chant the word that has them [i.e. the low tone accents] and you do not 'make the voice known' nor raise its pitch, but rather you reduce its sound intensity The meaning of the term *raf'* is that it is intermediate between *'i'lān* and *wad'*.²⁰⁷

In physiological terms, when *pashṭa* occurred on a word with two vowels and penultimate stress such as תָּהָו, it required a greater volume of lung air, both due to its increased duration and to the rise in subglottal pressure necessary to bring about an increase in intensity. One may, therefore, explain the reduction

²⁰⁶ For similar terminology in the surviving sections of *Hidāyat al-Qāri'* see Eldar (2018, 85-88).

²⁰⁷ Ed. Neubauer (ed. 1891, 28): ומעני אלעלאן הו אנד ... תרפע אלצות ותעלנה: תחת אלכלמה אלדי הם עלייהא ולא תעלן אלצות: אליו פוק בכווה ... ומעני אלזע הו אן בהא ולא תרפהה בל תצעעה וצעעא סאכנא ... ומעני אלרפע אן יכון מתווסט בין אלעלאן ובין אלזע.

in the duration of the vowel with *merkha* as a means of decreasing air expenditure to counterbalance the increase in air expenditure elsewhere in the same expiration or ‘breath group’. It will be shown in the next section that this physiological factor also conditioned the length of vowels with secondary stress.

I.2.8.2. Syllables with the Secondary Stress

I.2.8.2.1. On Open Syllables with Long Vowels

In general, a secondary stress falls on a long vowel in an open syllable that is separated from the main stress by at least one other syllable, i.e. there is a eurhythmic alternating sequence of prominent and non-prominent syllables. The secondary stress in these contexts may be marked by certain conjunctive accents, e.g.

L: וְהָאָדָם ‘and the man’ (Gen. 4.1)

L: בְּקִינּוֹתֵיהֶם ‘in their lamentations’ (2 Chron. 35.25)

L: מִבְּלִיגִיתִי ‘my comfort’ (Jer. 8.18)

In many cases the secondary stress is marked by a *ga'ya* sign, e.g.

L: הָאָדָם ‘the man’ (Gen. 2.7)

If the second syllable before the main stress syllable has a short vowel and is closed but some preceding syllable is open, then the secondary stress, in principle, falls on that syllable, e.g.

L: הַעֲמֹדִים ‘the columns’ (Exod. 38.11)

L: שְׁנָתָמָהָם ‘who are with them’ (1 Chron. 5.20)

Similarly, if a vocalic *shewa* or *hatef* occurs two places back from the accent, the major *ga'ya* is placed on a preceding syllable, e.g.

- L: הַאֲדָמָה ‘the ground’ (Gen. 9.2)

An additional secondary stress may be marked by a *ga'ya* on an open syllable that is separated from the first secondary stress by at least one syllable, though such *ga'yas* are rare in the early manuscripts, e.g.

- L: הַאֲשְׁרִילִי ‘the Asrielite’ (Num. 26.31)

A long vowel which is separated from the main stress syllable by a *hatef* vowel or *shewa* also takes secondary stress, e.g.

- L: יַעֲלֵה ‘goes up’ (Gen. 2.6)

- L: וְעַבְדוּ ‘and they will serve’ (Jer. 30.9)

- L: שְׁמָרָה ‘they have kept’ (Deut. 33.9)

We have seen that *shewa* after a long vowel is generally silent (§I.2.5.6.). The secondary stress does not, however, clash with the main stress since there is an intervening epenthetic syllable before the consonant with the silent *shewa*. e.g. [ʃɔ:.om.'ri:.im]. A secondary stress may also occur on a long vowel that is separated from the main stress by a geminated consonant, e.g.

- L: הַבָּתִים ‘the houses’ (Exod. 12.7)

- L: אֲנָפָעָה ‘Oh!’ (Exod. 32.31)

In such words, too, a syllable formed by an epenthetic vowel separates the syllable with the secondary stress from main stress: [hab.₁.bɔ:.ɔt.₂ t^{hi}:im].

In the metrical structure, secondary and main stresses in words such as בָּרְתָּשׁ and בְּקִיָּם would occur in adjacent feet, whereas in a word such as מְרַאֲתָה there is an intervening foot between those of the stresses:

[ʃɔ:.ɔm. 'ʁu:]
 (* .) (^ *)
 [hab. bɔ:.ɔt. t^{hi}:im].
 (*) (* .) (^ * .)
 [hɔ: ʁɔ: 'ʁɔ:.ɔm]
 (*) (*) (^ * .)

The stress rhythm is, therefore, based on the sequence of phonetic syllables rather than the sequence of feet.

In the early Masoretic sources, the *ga'ya* was not regarded as one of the accents but rather a sign to denote the slowing down of the reading. It appears, however, that it acquired a musical motif of its own in some cases. This is seen in the following passage on the *ga'ya* from *Hidāyat al-Qāri'*:

[The *ga'ya*] should not be considered to belong either with the disjunctive accents or the conjunctive accents, since it is only an exhalation in speech, which carries the words forward ... Its distinctive property is the imparting of a

melody to the reading so that joy is diffused in the heart, in order to conduct the reading along.²⁰⁸

The term in the early sources is vocalized גַּעֲיִה, reflecting its origin as an Aramaic active participle of the verb גַּעַת ‘to roar, to low’, or, occasionally, גַּעֲיָה. In *Hidāyat al-Qāri’* גַּעֲיָה has an Arabic broken plural גַּעֲיָאִים *gawā’ī*. The sign later came to be known as the מְטֶג *meteg*, a term that was introduced by Yequtiel ha-Naqdan (first half of the thirteenth century) (Gumpertz 1958) and still widely used today.

Yeivin, who carried out detailed studies of the *ga’ya* in the early manuscripts, classified it into two main categories (Yeivin 1968, 89–194; 1980, 240–64):

- (i) Musical *ga’ya*. This type of *ga’ya* is related to the musical cantillation and generally marks some kind of secondary stress preceding the main accent. It is dependent on the syllable structure of the word and the type of accent that is adjacent to it.
- (ii) Phonetic *ga’ya*. This slows down the reading of vowels in various places to ensure the correct pronunciation of the word, usually to indicate that a following *shewa* should be made vocalic or to ensure that certain consonants were not slurred over.

The musical *ga’ya* is divided into a variety of categories. The type that marks a secondary accent on open syllables, as in

²⁰⁸ Long version, edition in vol. 2 of this book, §II.L.3.1.

םְגַּאֲ'יָהּ, is known as ‘major *ga‘ya*’.²⁰⁹ In the early Masoretic codices, major *ga‘ya* is not marked on all words that have a syllable structure suitable for it. Moreover, there are differences across the early manuscripts with regard to the frequency with which it is marked. This reflects the fact that the marking of major *ga‘ya* was not standardized in the Tiberian tradition and it is rarely mentioned in the Masoretic treatises. It is marked infrequently in A, about 30% of the possible cases, mainly on words with the disjunctive accents *pashta* or *zaqef*. It is marked slightly more frequently in L, in about 40% of the possible cases. The other early manuscripts mark it in different proportions, some quite frequently (e.g. C marks it in about 75% of the possible cases). In general, however, the early manuscripts mark it less frequently than later ones and some printed editions regularly mark it on every open syllable that is suitable for it.

Mordechai Breuer (1971) has shown that some accent sequences are determined by the number of intervening full vowels without taking into account mobile *shewas* or *hatefs*. In these systems, a vowel with secondary stress counts as two unstressed vowels. For instance, *munah* before *zaqef* is transformed into *pashta* if the accent syllable of the word with *zaqef* is preceded by at least two full vowels: שֶׁרֶה וְתַּאֲמֵר ‘Sarah said’ (Gen. 21.6), וְיַאֲמֵר אַבְרָהָם ‘and Abraham said’ (Gen.

²⁰⁹ In some Masoretic sources the terms גָּרְשָׁהּ *gareshe*, גָּרְשָׁהּ *garsha* ‘extending’ and מִאֲרִיךְ *ma‘arikh* ‘lengthening’ are used as general terms to refer a secondary accent in an open syllable marked either by a conjunctive accent or by a *ga‘ya*; cf. Dotan (1967, 163, 342), Yeivin (1980, 86).

20.11), **וְיֶדְךָ תִּعַלֵּת בָּזָאת** ‘you will know by this’ (Num. 16.28—the *sere* with secondary stress counts as two full vowels), **וְהַתְּבִרְכּוּ בָּזָרְעָנָן** ‘and they will be blessed in your seed’ (Gen. 22.18—the *shewa* and the *hatef* vowel are not counted).

Major *ga'ya*, as we have seen, often signals the occurrence of a secondary stress. The fact that some manuscripts do not always mark a *ga'ya* in a syllable that one would have expected to take the secondary stress does not necessarily imply that in the reading tradition the secondary stress was not pronounced. When the presence of a *ga'ya* on an open syllable has an effect on the distribution of the accents or of other *ga'yas*, the effect is often sustained even when the *ga'ya* is not marked, the necessary condition being only that the open syllable could have been marked by a *ga'ya* (i.e. it is appropriate for secondary stress). A couple of examples of this will suffice:

(i) If *zarqa* has two conjunctive servis and the word bearing the *zarqa* has a major *ga'ya*, then the first servus before the *zarqa* is *merkha*. If, however, the word bearing the *zarqa* has no *ga'ya*, then the first servus is usually *munah*. The *merkha* occurs even if the following word does not explicitly mark the *ga'ya* on the open syllable that is suitable for it.²¹⁰

(ii) In word structures that are suitable for taking either a minor *ga'ya* or a major *ga'ya*, such as **וְנִתְמַשֵּׁא וְ** ‘and I kept myself’ (2 Sam. 22.24), the fact that the word can take a major *ga'ya* (in this case on the open syllable at the beginning of the word)

²¹⁰ Yeivin (1980, 206–7). If, however, the second servus before *zarqa* is *munah*, the first is always *munah*.

obviates the occurrence of the minor *ga'ya*, even if the major *ga'ya* sign is not marked (Yeivin 1968, 141).

Compare also some of the statements concerning the major *ga'ya* in the Masoretic literature with reference to a *ga'ya* on a word with *zarqa*:

'The reader pronounces the *ga'ya*, whether it is written or not written.'²¹¹

'In some books the *ga'ya* is written whereas in others it is not written but rather the knowledge of the reader is relied upon.'²¹²

It may be assumed, therefore, that the secondary stress fell on the appropriate syllable irrespective of whether it was marked graphically. A long vowel that had secondary stress was longer than an unstressed long vowel. This may be inferred from the statements in the early Masoretic and grammatical literature that a vowel with *ga'ya* is lengthened, e.g. *Hidāyat al-Qāri'*:

'Its distinctive property is the extension of the melody.'²¹³

²¹¹ והקורא יטעים הגעיה Sefer *Ta'ame ha-Miqra* (ed. Mercerus, 1565, Eiii): בפיו או כתובה או לא כתובה.

²¹² במקצת ספרי Hebrew *Mahberet ha-Tijān* (ed. J. Derenbourg 1871, 98): כותבין הגעה ובמקצת אין כותבין אלא סומכין על דעת הקורא.

²¹³ וככאייתה אלAMDAD באלנגם, Long version, edition in vol. 2 of this book, §II.L.3.1. Cf. the orthoepic works derived from the *Hidāyat al-Qāri'*, e.g. the Hebrew *Mahberet ha-Tijān* (ed. J. Derenbourg, 77) and the Arabic *Mahberet ha-Tijān*, (ed. Neubauer 1891, 27), and also the references given by Yeivin (1968, 142).

It has been shown above, moreover, that in some accent sequences a syllable with secondary stress was treated as equivalent to two unstressed syllables, implying that the duration of the vowel nucleus of the syllable with secondary stress was increased by virtue of the stress. The *ga'ya* sign was, in fact, called *ma'arikh* in some sources (Wickes 1887, 24; A. Ben-David 1957b, 390–91).

Joseph and David Qimḥi say explicitly that a long vowel in a syllable that is not adjacent to the accent syllable (i.e. one that takes secondary stress) is lengthened, but not one that is in a syllable adjacent to the accent (and so does not take secondary stress), e.g. the *qames* on the *shin* in the word תְּמִשׁוֹן is longer than that in תְּמִשׁׂוֹן.²¹⁴

It has been remarked above that the early Tiberian manuscripts differ in their consistency of marking the secondary stress by *ga'ya*. Those manuscripts that marked major *ga'ya* consistently emanated from a scribal circle that tended to give graphic expression to a relatively greater number of the phonetic details of the reading tradition. The trend towards a more complete graphic notation reached its apogee in many of the Non-Standard Tiberian manuscripts, which in addition to the abundant marking of *ga'yas*, also indicate subtle differences in the strength of consonants according to their phonetic environment (§I.3.3.). Yeivin has shown that in A, in which major *ga'yas* are marked inconsistently, their notation is not random but follows certain trends. If the difference between the *ga'ya*

²¹⁴ Cf. the passages from the *Sefer Zikkaron* and the *Sefer Mikhlol* quoted by Yeivin (1981b, 48–49).

notation of A and that of early manuscripts that mark them more consistently arises from a tendency to indicate less phonetic minutiae, we may postulate that the selective *ga'ya* notation of A corresponds to differences in the duration of vowels with secondary stress. That is to say, some vowels with secondary stress were longer than others and only the longer ones tended to be marked. This seems plausible, since the medieval sources state that the *ga'ya* was essentially a marker of vowel duration.

The words that are marked with major *ga'ya* in A nearly all have disjunctive accents. It is very rarely marked on words with conjunctives (Yeivin 1968, 147–48). In conformity with the foregoing discussion, this may be interpreted as a reflection of the fact that vowels with secondary stress were generally shorter in words with conjunctives than in those with disjunctives. Such durational differences are not alluded to in the early Masoretic and grammatical literature. It should be pointed out, however, that the thirteenth-century *naqdan*, Yequti'el ha-Kohen bar Yehudah, the first scholar to deal systematically with the question of *ga'yas* and secondary stress, states explicitly that ‘metegs (= *ga'yas*) of disjunctives are greater than metegs of conjunctives’.²¹⁵ This can be explained by the fact that words with disjunctive accents were read slower than words with conjunctives and so the relative duration of the constituent syllables was increased.

Within the set of words with disjunctive accents, A marks major *ga'ya* most frequently on those with *pashta*. After *pashta* the accents with which it occurs most often are, in descending

²¹⁵ מתייגת המלבים גדולי ממתייג המשרתים: *En ha-Qore* (Gumpertz 1958, 141).

order, *zaqef*, *'atnah*, *tifha* and *revia'* (Yeivin 1968, 148–60). The major *ga'ya*, therefore, is marked predominantly with the low sustained tone accents. With regard to the accents with which *ga'ya* is marked most frequently, *pashṭa* and *zaqef*, Yeivin notes that the *ga'ya* generally does not occur if the word is *mil'el*, i.e. has the accent on the penultimate syllable (Yeivin 1968, 152, 156). It is reasonable to assume that the omission of the *ga'ya* before *pashṭa* and *zaqef* on *mil'el* words was connected with the fact that the low tone accents were lengthened with a concomitant rise in pitch and intensity when they fell on a penultimate syllable (see above). The duration of the vowel with secondary stress was evidently reduced in the same way as the duration of a vowel with *merkha* was reduced before a *pashṭa* on a *mil'el* word. In both cases, the reason for the reduction was that the increase in lung air required to sustain the longer duration and greater intensity of the *pashṭa* (and *zaqef*) necessitated a decrease in air expenditure elsewhere in the same breath group. Similarly, *ga'ya* was seldom marked on words with the high tone accents since these required a larger volume of air to sustain the greater subglottal pressure necessary for their higher intensity. The vowel with the secondary stress before such accents was, therefore, of shorter duration. When, however, the low tone accents *pashṭa*, *zaqef*, *'atnah* and *tifha* were on the final syllable of a word, they required relatively little air expenditure since they were pronounced quite short and with low intensity (see above). There was, consequently, more air available for the articulation of other segments in the same breath group and so

the secondary accent was pronounced with a relatively long duration.

In his study of accent retraction (*nesiga*), Praetorius suggested that in word pairs in which the expected retraction of the accent did not take place, the accent of one or of both of the words was weak and so the clash of the two stress syllables was felt to be more acceptable. The circumstances in which the stress was weakened include:

- (i) Long accent groups, i.e. a disjunctive preceded by two or more words with conjunctives (Praetorius 1897, 11, 43);
- (ii) When a word pair in a short accent group has a close syntactic connection to a following accent group, e.g. when the second accent group is a complement of a verb contained in the preceding accent group (Praetorius 1897, 39), e.g. the prepositional phrase in:

הָיִ בְּנָה שָׁיר בַּדְמִים
(Hab. 2.12)

- (iii) When one of the words of a short accent group has strong contrastive stress (Praetorius 1897, 51–58), e.g.

וְהַחُזֶּה בֵּי יְנַחֲלָאָרֶץ
(Isa. 57.13)

Nesiga sometimes also fails to occur in a short accent group when it is in close syntactic connection with the preceding accent group and contrastive stress falls on the last word of this accent group (Praetorius 1897, 51–58), e.g.

אִם־יְהֹוָה הַסִּתְתָּךְ בִּי
(1 Sam. 26.19)

In all these cases, it is plausible to assume that the stress was reduced due to a diminution in the supply of lung air. This diminution arose in the first two cases as a result of the fact that the breath group was relatively long. In the third case, a large proportion of the air of the breath group was expended on the word with strong contrastive stress and so the amount of air available for the rest of the breath group was correspondingly reduced. The reduction in the volume of air expended on a stressed syllable would have resulted in a decrease not only of the intensity of the vowel but also of its duration. Consequently, we may infer that the aforementioned factors that conditioned the occurrence patterns of *nesiga* were also conditioning factors of vowel duration. The reduction of vowel duration in the environment of contrastive stress arose for essentially the same reason as did the reduction of the duration of vowels with *merkha* or with secondary stress before high tone disjunctives.

There is one feature of the distribution of major *ga'yas* in the Aleppo Codex that may have been conditioned by the length of the breath group. Major *ga'ya* occurs with some accents more frequently when there are no preceding words with dependent conjunctives.²¹⁶ The absence of preceding words with conjunctives may have motivated a shorter breath group and so given rise to a corresponding increase in the duration of the stressed vowels. It is, of course, not possible to establish with absolute certainty where the boundaries of breath groups occurred in the medieval Tiberian reading tradition. Nevertheless, it is

²¹⁶ Yeivin (1968, 150 [*'atnah*], 151 [*zaqef*]).

reasonable to assume that they coincided to some extent with the boundaries of accent groups and/or of syntactic units.

I.2.8.2.2. On Closed Syllables with Short Vowels (Minor *Ga'ya*)

Ga'ya also marked secondary stress on closed syllables with short vowels, i.e. vowels that are unspecified as to length in their phonological features (viz. *patah* /a/, *segol* /ɛ/, *hireq* /i/, *qibbus/shureq* /u/, /o/, /e/), as opposed to a vowel that is inherently specified by a phonological feature as long (long *qames* /ɔ/, *holem* /ō/, *sere* /ē/, long *shureq* /ū/, long *hireq* /ī/) (for details of this classification of vowels see §I.2.3.). This occurs most consistently on the first syllable of words with disjunctive accents that have the following patterns: מִתְפָלֵלִים [mi·θp^halp^ha'li:im], מִתְקַטְלִים [mi·θqatt^ha'li:im] (with a geminated consonant) and מִתְפַעֲלִים [mi·θp^ha:f'a'li:im] (with a *hatef* preceded by a vowel of the same quality).²¹⁷ These are patterns in which the main accent syllable is preceded by sequences of two closed syllables with short vowels followed by a mobile *shewa* or by a sequence of one closed syllable with a short vowel and an open syllable followed by a syllable with a *hatef* vowel that is the same quality as the vowel of the preceding open syllable.

Such vowels of unspecified length with *ga'ya* in words in these patterns are generally transcribed in the Karaite transcriptions with an Arabic *mater lectionis*, which indicates that they were lengthened by the secondary stress, e.g.

²¹⁷ Cf. Yeivin (1980, 244).

وَيَشْمَعُ [va:jji:smu:fu:] (BL Or 2544 fol. 118v, 4 | L [BHS]:

וַיִּשְׁמַע Exod. 4.31 ‘and they heard’)

بَامَاحَنَا [ba:mm:a:ha'ne:] (BL Or 2544, fol. 32v, 1 | L [BHS]:

בָּמָחָנָה Gen. 32.22 ‘in the camp’)

مِيمِشَفَحُوتْ [mi:mmi:p^ho:hoo:oθ] (BL Or 2546, fol. 132r, 11

| L [BHS]: מִמְשֵׁפָחָת Num. 36.1 ‘from the families of’)

وَوْلِيَا عَقْوَبْ [wu:lja:f'a:qo:ov] (BL Or 2546, fol. 85v, 8 | L

[BHS]: וְלִיעָקָב Num. 32.11 ‘and to Jacob’)

In the Masoretic literature, this type of *ga'ya* was termed ‘minor *ga'ya* (*גַּעֲיוֹתָה*) whereas the *ga'ya* that marked the incidence of secondary stress on an open syllable was termed, as remarked, ‘major *ga'ya*’ (*גַּעֲיוֹתָה*).²¹⁸ This implies that when secondary stress fell on a short vowel in a closed syllable, the vowel was not lengthened as much as a vowel in an open syllable with secondary stress.²¹⁹ Evidence for this lesser degree of duration is the fact that some Karaite manuscripts that transcribe long

²¹⁸ Cf. *Diqduqe ha-Te'amim* (ed. Dotan 1967, 302, 383).

²¹⁹ Yequiti'el ha-Naqdan refers to the *ga'ya* in a closed syllable as ‘heavy’ (*כבד*) and the *ga'ya* in an open syllable as ‘light’. These terms of Yequiti'el do not denote the way the *ga'yot* were pronounced. He states that he called the *ga'ya* in closed syllables ‘heavy’ since: ‘The heart of many sages is heavy for not having understood them ... and the door [of understanding] which is open for the light ones is closed for those which are heavy’ (Gumpertz 1958, 142).

vowels in open syllables or syllables with the main stress with an Arabic *mater lectionis* omit a *mater lectionis* in a syllable with secondary stressed marked by a minor *ga'ya*, e.g.

وَيَشْرُصُور [va'ʃʃiʃra's'u:] (BL Or 2542, fol. 43r, 6 | L [BHS]:

וַיִּשְׁרֹצְנָה Exod. 1.7 ‘and they swarmed’)

نَحْكَمَة [niθhakkʰa'mɔ:] (BL Or 2542, fol. 43r, 9 | L

[BHS]: נַחֲקָמָה Exod. 1.10 ‘let us deal wisely’)

وَلِيَاعْقُوب [wur'lja:fə'qo:ov] (BL Or 2542, fol. 49r, 13 | L

[BHS]: וְלִיאָקָב Exod. 6.8 ‘and to Jacob’)

For this reason, the vowel with minor *ga'ya* is represented as half-long in my phonetic transcription of the forms, e.g. [a:], [i:], [u:].

Some Karaite transcriptions regularly omit a *mater lectionis* only when the minor *ga'ya* is on one of the high vowels *hireq* [i] or *shureq* [u], but transcribes lower vowels that have minor *ga'ya* with a *mater lectionis*, e.g.

وَإِنْتُنُ [va'ʃʃittʰa'nū:] (BL Or 2549 fol. 18v, 9 | L [BHS]:

تَيْتُنُ Jer. 4.16 ‘and they gave’)

لَمَنَاصِيَ [li'mna:ʔa's'a:aqj] (BL Or 2549 fol. 87r, 6 | L

[BHS]: לִמְנָאֵשׂ Jer. 23.17 ‘to those who despise me’)

وَخَمْسَرْفُوت [wuχmisr'a'fo:oθ] (BL Or 2549 fol. 112r, 14 |

L [BHS]: וְכִמְשָׁרֶפֶת Jer. 34.5 ‘and like the burning of’)

This appears to reflect the universal phonetic phenomenon whereby, all other things being equal, high vowels tend to be of shorter duration than low vowels. This difference in duration can be above the threshold of perception (Lehiste 1970, 18–19). Evidently, the scribes of the Karaite transcriptions perceived the high vowels with minor *ga'ya* to be of shorter duration than the low vowels. Since many other transcriptions represent the high vowels with minor *ga'ya* with *matres lectionis*, we can assume that the high vowels with minor *ga'ya* were not completely short, but half-long vowels of a shorter duration relative to low vowels.²²⁰

Attempts were made to standardize the distribution of the minor *ga'ya* in the Tiberian Masoretic tradition and there is general agreement among the early manuscripts in its marking. This standardization is reflected by the fact that a large proportion of the differences between Aharon ben Asher and Moshe ben Naphtali that are recorded in *Kitāb al-Khilaf* of Misha'el ben 'Uzzi'el relate to the minor *ga'ya*.

Minor *ga'ya* occurs in the patterns described above across the boundary of words that are connected by *maqqef*, e.g. עלי הַחֲמֵר ‘on the ass’ (Exod. 4.20). Minor *ga'ya* also occurs less consistently on a range of other related structures in which the syllable with the *ga'ya* is separated from the main accent syllable by at least one other syllable and a vocalic *shewa*, e.g.

- L: הַכְּנָנוֹתִים (with vocalic *shewa* additional to the מִתְחַפְּעָלִים pattern) ‘the Canaanite woman’ (1 Chron. 2.3)

²²⁰ For further details concerning the representation of minor *ga'ya* in the Karaite transcriptions, see Khan (1992c).

- L: וַיְלָחַם (with a vowel of different quality before the *hatef*)
 ‘and they fought’ (Josh. 10.36)

It very rarely occurs on a syllable that is separated from the accent by only one syllable, e.g.

- L: נִמְצָא־קֹשֶׁר ‘a conspiracy is found’ (Jer. 11.9).

Yeivin (1968, 89–194; 1980, 240–64) classifies major *ga'ya* and minor *ga'ya* as musical *ga'yas* and it is reasonable to assume that the secondary stress that they represented was adorned by a short musical motif. The frequent use of conjunctive accents on open syllables to mark the secondary stress supports this view. *Hidāyat al-Qāri'* described *ga'ya* as bringing about ‘the extension of the melody so that joy is diffused in the heart, ... animating the reader and moving him to read more’.²²¹ One may interpret this as referring to some kind of melismatic embellishment. The *Diqduqe ha-Te'aimim*, moreover, classifies *ga'ya* among the accents, presumably on account of its musical value.²²² Secondary stress normally fell on a long vowel in an open syllable since it was a feature of long vowels that they were more amenable to being stretched ('dehnungsfähig', according to the terminology of Trubetzkoy 1936; 1938) than short vowels and so could accommodate the musical contour of the secondary stress more easily. When secondary stress fell on a short vowel, the vowel was lengthened but its duration was less than that of a long vowel

²²¹ Long version, edition in vol. 2 of this book, §II.L.3.1.

²²² Ed. Dotan (1967, 108, §1). *Hidāyat al-Qāri'*, on the other hand, does not consider *ga'ya* to be an accent; cf. Long version, edition in vol. 2 of this book, §II.L.3.1; ed. Eldar 2018, 74–75.

in an open syllable that had secondary stress. It was for this reason that short vowels in closed syllables were not usually suitable for secondary stress, since they were not lengthened enough to accommodate the melisma of the stressed syllable.

The occurrence of the secondary stress of minor *ga'ya* on short vowels in closed syllables in the patterns מִתְקַטְּלִים, מִתְפָּלִילִים and מִתְפָּעֵלִים can be explained by the hypothesis that the sequence of two CVC-CVC syllables with short vowel nuclei functioned, under certain conditions, analogously to a single syllable with a long bimoraic nucleus CVV. Secondary stress was allowed to fall on a short vowel in such patterns since the motif associated with the stress was spread over both the stressed syllable and the syllable that followed it. There subsequently followed a buffer syllable in the form of a mobile *shewa* or *hatef*, which separated the melismatic unit of the secondary stress from the main stress syllable. Just as the most prominent component of the CVCCVC sequence accommodating the secondary stress of minor *ga'ya* was the first syllable, reflected by the lengthening of its vowel, so in a bimoraic CVV syllable the main prominence was on the first vowel mora, which is the most sonorous segment of the syllable (Kager 1993).

It would be more precise to say that the melisma of the secondary stress spread across the strong syllables of two metrical feet. This explains why minor *ga'ya* is frequently found also on structures such as הַכָּנָעַנִית ‘the Canaanite woman’ (1 Chron. 2.3) and אֲשֶׁר־תַּבְשִׁלִּי ‘what you cook’ (Exod. 16.23) (Yeivin 1980, 246), in which the syllable with secondary stress is separated from the

buffer syllable by two phonetic syllable nuclei (vocalic *shewa* + *patah*) but only one metrical foot:

[(_ha·k.) (k^ha.na:) (Fa.'ni:iθ)]

(_*) (. *) (._ '*) .)

[(_?a.ʃe:R) (t^ha.vaʃ) (ʃa.'lu:)]

(._ *) (. *) (._ '*) .)

A form such as מִפְנִיכֶם ‘from before you’ (Lev. 18.24) was unsuitable for minor *ga'ya* since the *shewa* belongs to the second foot and the strong syllable of this foot is not separated from the main stress by the statutory buffer syllable:

[(mip.) (p^ha.ne:) ('χε:em)]

(*) (. *) (* .)

It is for this reason that the separation between minor *ga'ya* and the main stress had to be a full vowel + mobile *shewa/ḥatef* vowel (מִתְפָלֵגִים) but could not be the same in reverse sequence (מִפְנִיכֶם).

A secondary accent marked by minor *ga'ya* does not occur on all closed syllables that are separated from the main stress by a second foot and a buffer syllable. It tends to occur only in those circumstances in which the vowel of the syllable under secondary stress was maximally long. In conditions in which the duration of the vowel was reduced, the minor *ga'ya* tends not to be marked. It is not clear whether the absence of the minor *ga'ya* indicates that the secondary stress was omitted or whether it denotes that the vowel was still under secondary stress but of

shorter duration and, consequently, unable to accommodate a melisma.

There were two major conditioning factors of vowel duration that affected the duration of the vowel with minor *ga'ya*. One of these was the tempo at which the word containing minor *ga'ya* was read. When chanted at a slower tempo, the vowels were stretched. Consequently, the vowels of words that had disjunctive accents were generally longer in duration than the vowels of words with conjunctives. This factor has already been inferred from the distribution of major *ga'yas*. From the distribution of minor *ga'yas* one may infer another factor, viz. there was a strong tendency to make the interval between the secondary stress and the main stress in all words isochronous, irrespective of differences in the number of syllables that separated them. This meant that the duration of the syllables between the two stress beats including those on which the stress occurred varied according to their number. The more intervening syllables there were, the shorter was their duration. The variation in duration of the syllable would doubtless have been achieved by lengthening or shortening of the vowels that were the most 'stretchable' constituents of a syllable. It is not clear whether this affected all the vowels, both long and short, or just the long vowels, which, by their nature, had a more flexible duration.

In the conditions in which minor *ga'ya* was regularly marked, the vowel under secondary stress was maximally long according to these two aforementioned criteria: (i) The *ga'ya* normally occurs when the word has a disjunctive accent but not when it has a conjunctive; (ii) Apart from the syllable that was

necessary to carry part of the melisma of the secondary stress, the material constituting the unstressed buffer between the two stress beats was the absolute minimum, viz. an open syllable with a short vowel nucleus (vocalic *shewa* or a *hatef* vowel): מִתְפָלֵלִים, מִתְפַעֲלִים and מִתְקַפְעִים. When the buffer between the two stresses was longer, the duration of the vowels of the word was reduced out of an effort to keep the time interval between them the same and so the *ga'ya* was usually omitted. This explains the phenomenon described in the *Diqduqe ha-Te'amim* whereby the *ga'ya* was omitted if the structures that regularly had it were attached to a following word by *maqef*, e.g. וַיַּפְלוּ-שָׁמָה ‘and they fell there’ (Gen. 14.10).²²³ Even forms that have no more than an additional vocalic *shewa* between the two stress syllables, such as אֲשֶׁר-תָּבִשְׁלֹת ‘the Canaanite woman’ (1 Chron. 2.3) and אֲשֶׁר-תָּבִשְׁתָ ‘what you cook’ (Exod. 16.23) exhibit slightly less consistency in the placement of minor *ga'ya* than the ‘fully regular structures’ (Yeivin 1968, 107). Forms which have a bimoraic syllable as a buffer, i.e. an independent foot, rather than a light monomoraic syllable with mobile *shewa* or *hatef*, such as לִמְחַמָּה ‘to war’ (Num. 21.33) do not have *ga'ya* with any degree of regularity (Yeivin 1968, 117; 1980, 247). By contrast, additional syllables preceding the secondary stress fell outside the isochronous interval between the two stress beats and so had no influence on the duration of the vowels, e.g. וְאַתְּ-הַמְאכַלָּת ‘and the knife’ (Gen. 22.6).

²²³ *Diqduqe ha-Te'amim* (ed. Dotan 1967, §15), Dotan (1964, 65), Yeivin (1968, 97–98).

Minor *ga'ya* was marked with equal consistency before all the disjunctives. The duration of a vowel with minor *ga'ya*, unlike that of a vowel with major *ga'ya*, was not reduced significantly as the result of greater air expenditure on a subsequent high tone accent. This was most likely because the relatively short duration of a vowel with minor *ga'ya* required by its very nature far less air expenditure than a long vowel with major *ga'ya*. As remarked above, however, the Karaite transcriptions reflect differences in duration in the vowel with minor *ga'ya* according to intrinsic differences in duration between high and low vowels.

If an open syllable preceded the syllable that took minor *ga'ya* in a form of regular structure, the secondary stress fell on this open syllable and was either marked with major *ga'ya* or was left without graphical representation, e.g. וְאַשְׁתָּמֹרָה 'and I kept myself' (A, 2 Sam. 22.24; cf. Yeivin 1968, 98). A long vowel in an open syllable was, all other things being equal, more suitable for taking the melisma of the secondary stress than a sequence of two short syllable nuclei. The duration of a stressed vowel in an open syllable, moreover, was not reduced by the pressure of isochrony between stress beats to the extent that it could not accommodate the melisma.

By this argument, in the structure מִתְפֻלְּלִים one would have expected that the vowel in the open syllable before the *hatef* could have accommodated the melisma of the secondary stress, since this vowel was long, as shown by the Karaite transcriptions, e.g.

וְיִצְחַק (BL Or 2539 MS A, fol. 67v, 2 | L [BHS]: נִיצְחָק Gen.

22.9 ‘and he bound’)

וְיִעַבֶּר (BL Or 2544, fol. 32v, 11 | L [BHS]: נִיעַבֵּר Gen. 32.24

‘and he caused to pass over’)

עַל־הַחֲמֹר (BL Or 2540, fol. 12v, 2 | L [BHS]: עַל־הַחֲמֹר Exod. 4.20 ‘upon the donkey’)

When a long vowel in this position is followed by an ordinary *shewa*, minor *ga'ya* generally does not occur (Yeivin 1968, 111), e.g. וַיִּכְלְמֻן ‘so they may be ashamed’ (Ezek. 43.10). Here the secondary stress evidently generally fell on the syllable before the *shewa*: [vi.jik,k^hɔ:.ɔl.'mu:]. When the long vowel is followed by a laryngeal/pharyngeal with a vowel of a different quality, e.g. וַיִּחְמַן ‘and they fought’ (Josh. 10.5), the tendency for the word to have minor *ga'ya* is greater than when it is followed by a non-guttural consonant with *shewa* (וַיִּכְלְמֹן) but less than when the vowel preceding the *hatef* is of the same quality (נוֹעַקְדֵּן). If the word has *pashṭa*, for example, there is a preference to have secondary stress in the form of a major *ga'ya* on the syllable before the guttural rather than minor *ga'ya* on the preceding syllables, e.g. וַיִּצְאָקְדֵּי ‘and they were called’ (Jud. 10.17; cf. Yeivin 1968, 109).

These facts can be explained by the assumption that the duration of the vowel varied in each of these three structures, those of shorter duration being less suitable for taking the full secondary stress melisma than those of longer duration. In some

manuscripts that exhibit a selective notation of major *ga'ya*, there is a greater tendency for the major *ga'ya* to be omitted on a vowel before a *hatef* than on a long vowel before a *shewa*.²²⁴ This was probably motivated by the shorter duration of the vowel before a *hatef*.

A vowel in an open syllable that is followed by a *hatef* of the same quality must be considered to have been the shortest of the three types of vowel. The rules for accent sequences that treated a syllable with secondary stress as two syllables counted a vowel preceding a *hatef* of the same quality as only one syllable (M. Breuer 1971, 184, n.45). Consequently, if any secondary accent at all fell on such vowels, it could not have increased the vowel duration to the full length of other vowels in open syllables under secondary stress. One may also adduce as evidence of the relatively short duration of vowels of this type the fact that they do not usually take *munah* before *zaqef* where the occurrence of *munah* would have been expected (Yeivin 1968, 201–2; Breuer 1971, 184, n.45). It is plausible to interpret this as being due to the unsuitability of the vowels to accommodate the necessary melismatic structure of the accent due to their short duration.

The relatively short duration of a vowel before a *hatef* of the same quality was conditioned by two factors.

First factor: A number of phoneticians have shown that in some languages the duration of a vowel varies according to the

²²⁴ Menachem Cohen (1982a, 66, 67, 69, 70, 73) has found this feature of *ga'ya* notation in the manuscripts L, C and in the later medieval Spanish manuscripts BL Or 2201 (dated 1246) and BL Or 2626-8 (dated 1483).

extent of the movement of the speech organs required in order to come from the vowel position to the position of the following phonetic segments. The greater the extent of movement, the longer the vowel.²²⁵ It may be inferred that this principle influenced vowel duration in Tiberian Hebrew. In the sequence of a vowel, a laryngeal/pharyngeal, and a *hatef* of the same quality, no significant movement of speech organs in the oral cavity was required to make the transition from the first member to the last. There were two relevant processes involved: the tongue position for the two vowels, and the speech organ movement and muscle activity required to articulate the intervening consonant. Phonetic segments are not produced in speech as independent units, but rather the sounds overlap and flow into one continuously changing stream of sound. Several phoneticians have postulated on the basis of studies of gestures in the vocal tract that the tongue moves from vowel shape to vowel shape with the consonantal gestures superimposed, overlapping in time with the articulatory gestures for the vowels.²²⁶ Therefore in a sequence of vowel + consonant + vowel when the two vowels are of the same quality the speech organ movement necessary to pass from the first vowel to the second would always be less than when the two vowels were of different quality, irrespective of what the intervening consonant might be.

Second factor: In Tiberian Hebrew the patterns of stress and the distribution of the accents only reflect a consistent reduction

²²⁵ E.g. Lehiste (1970, 20).

²²⁶ E.g. Öhman (1966), Browman and Goldstein (1989).

in the duration of the first vowel when the intervening consonant is a pharyngeal/laryngeal. There is no evidence for a similar reduction when an oral consonant intervenes between two vowels of the same quality, except, occasionally, when the consonant is a lax continuative, especially sonorants. An important factor contributing to the reduction of duration must, therefore, have been the phonetic nature of the pharyngeals/laryngeals. It is relevant here to draw attention to a phenomenon that is attested in North African Arabic dialects whereby long vowels are shortened before pharyngeal consonants, Moroccan, Jewish Algiers: *dra'* ‘arm’ < **dhirā'*, *jnah* ‘wing’ < **jināh* (Brockelmann 1908 vol. 1, 64; Marcel Cohen 1912, 135). Brockelmann explains this as the result of the articulation of the pharyngeal taking away part of the duration of the vowel. This was no doubt due to the weak vowel-like nature of non-oral consonants.²²⁷ We may, therefore, identify this as a second factor that

²²⁷ Another relevant parallel can be found in stress placement patterns in the Modern South Arabian languages. Dufour (2017) has demonstrated that in the history of these languages syllables attracted stress according to a hierarchy of vowel qualities thus: **a* > **i* > **u*. This means that a syllable with an **a* was favoured over syllables with higher vowels for stress placement. What is of interest is that a syllable with an **a* vowel that was followed by a guttural consonant was less favoured for stress than one that containing an **a* vowel that was not followed by a guttural. This can be interpreted as showing that the duration of the vowel was reduced when followed by a guttural and thus the vowel in this context was less suitable for stress. Cf. also Hayward et al. (1988).

is likely to have reduced the duration of Hebrew vowels before gutturals.²²⁸

Although the articulation of עֲחָחָעַ in Tiberian Hebrew was weak, it was only reduced completely to zero in the case of נְ and הְ in a number of word forms, such as יְבֹאֵל, יְאַכְלֵן, אַמְצֵן and forms that used הְ as a *mater lectionis* for a final long vowel. Where עֲחָחָעַ were articulated, they often caused a lowering of adjacent vowels, in many cases to the quality of *patah*, the lowest vowel. This was evidently occasioned by the narrowing of the pharynx, which was achieved by pulling the back of the tongue into the pharynx and this, in turn, was facilitated by the lowering of the tongue. The association of עֲחָחָעַ with a low vowel shape may explain the following phenomenon of *ga'ya* distribution in the early manuscripts that has been noted by Yeivin (1968, 99-100). Among the cases of words of regular structure for minor *ga'ya* that, contrary to expectation, do not take minor *ga'ya* with a disjunctive accent, there is a large proportion of forms of the pattern מִתְפְּעָלִים with *segol* + *hatef segol*, e.g. וַיְאָנַז 'and he took

²²⁸ There is some evidence that the duration of a vowel in an open syllable was also reduced when it was separated from a subsequent *hatef* of the same quality by a sonorant oral continuant. When the position of the laryngeal/pharyngeal in the form מִתְפְּעָלִם is taken by one of the sonorant consonants that characteristically do not tolerate *dagesh* in a syllable with *shewa*, minor *ga'ya* regularly occurs (Yeivin 1968, 112–13), e.g. A נִיהְלָלוּ 'and they praised' (L נִיהְלָלוּ, 2 Chr. 29.30) (§I.2.8.2.2.). Again we may assume that the vowel-like sonorant took away some of the duration from the preceding vowel, making it unsuitable for secondary stress.

hold of' (Jud. 16.3), שָׁמַע אֶל־יְהוָה 'and I will do it' (Isa. 46.11). This can be interpreted as indicating that a long vowel preceding יְהִיְהָ with a *hatef* vowel of the same quality tended to be shorter in proportion to the lowness of the vowel quality. The tongue position for *patah* was the closest to that which was appropriate for the narrowing of the pharynx and so less movement of articulatory organs was required. We may again draw a parallel with North African Arabic, where the vowel shortening before pharyngeals is restricted in principle to long low ā vowels.

Finally, if a long vowel was followed by a closed syllable beginning with יְהִיְהָ and containing a vowel nucleus of the same quality, it was apparently longer than a long vowel followed by יְהִיְהָ with a *hatef* of the same quality. This is shown by the regular occurrence of *munah* on the long vowel before the closed syllable to mark secondary stress before *zaqef*, e.g. תְּאַתֵּחַ לְיָדֵינוּ 'for the sin offerings' (Neh. 10.34) (Yeivin 1968, 203). This was probably due to the fact that a consonantal onset of a prosodically strong syllable (CVC, CVV) was of a stronger articulation, therefore less vowel-like, than that of a prosodically weak syllable containing vocalic *shewa* or a *hatef*. This would have made the consonant less likely to take away duration from the preceding vowel.

It follows from the first factor discussed above that a vowel preceding a laryngeal/pharyngeal with a *hatef* of a different quality, as in וַיְלִחְמֻוּ 'and they fought' (Josh. 10.36) and מִנְאֲלֹנֶנוּ 'of our nearest kin' (Ruth 2.20), was of a slightly longer duration than a vowel before a *hatef* of the same quality. This was because the transition to the *hatef* vowel required some movement of

tongue and lip position. Through the operation of the second factor, however, the following guttural took away some of the preceding vowel duration and so these vowels did not have quite their full duration. Although they took secondary stress in the form of *munah* before *zaqef* in preference to minor *ga'ya*, e.g. *וְלֹא תִּחְתַּמֵּן* ‘[do not] fight’ (1 Kings 22.31), they were, in general, not so suitable for secondary stress as were long vowels of full duration. There was, consequently, a certain tendency for secondary stress in other circumstances to pass over a syllable with such a vowel when conditions were favourable for the melisma of the stress to be spread over two syllables instead.

In forms such as *וַיִּכְלְמֻוּ* ‘so they may be ashamed’ (Ezek. 43.10), it may be expected from the operation of the first factor that the long *qames* would be reduced in duration since this was followed by an epenthetic of the same quality: [vi.jik.-k^hɔ:.ɔl.'mu:]. Such structures, however, exhibit a lesser tendency to take minor *ga'ya* than forms such as *וְלָמָדָוּ* ‘and they fought’ (Josh. 10.5). Evidently, the *qames* in forms such as *וַיִּכְלְמֻוּ* was longer in duration and more suitable for taking the full secondary stress melisma. This would have been due to the absence of a guttural consonant following the vowel that would have taken over part of the duration of the vowel.

I.2.9. SHEWA GA'YA

The *ga'ya* sign is sometimes marked next to *shewa* or *hatef* signs. This is referred to by the terms *ga'yat shewa* or *shewa ga'ya*. The second term will be used here. It is rare in the twenty-one books (only some 200 cases occur) but is common in the three books. It

is a musical *shewa*, but is often marked before a guttural, which suggests that there may be also a phonetic motivation for its use.²²⁹

There are some parallels between the occurrence of *shewa ga'ya* and that of minor *ga'ya*. *Shewa ga'ya* occurs mainly in words with disjunctive accents. Some cases of *shewa ga'ya*, moreover, occur on patterns that correspond to the regular patterns for minor *ga'ya*, viz. מִפְעָלִים and מִקְטָלִים (the counterparts of מִתְפָעָלִים and מִתְקָטָלִים), e.g.

- L: תַּשְׁלִיחֵוּ ‘you should set free’ (Jer. 34.14)
- L: בְּשִׁמְעֹךְ ‘when you hear’ (1 Chron. 14.15)
- L: בְּמִעְלָה ‘in the ascent of’ (2 Chron. 32.33)

The occurrence of *shewa ga'ya*, however, is not so concentrated on these regular patterns as the minor *ga'ya* is concentrated on its regular patterns. *Ga'ya* is found in a variety of other patterns on a *shewa* or *hatef* that is separated from the accent by at least one vowel, e.g.

- L: וְאַוְלָם ‘but’ (Job 12.7)
- L: שָׁאֵלְךָ ‘go out’ (Cant. 1.8)
- L: וְרָאָתָה וְקָרָאתָ ‘you will see and you will read’ (Jer. 51.61)
- L: וְהִיה ‘and it will be’ (Hos. 2.1)
- L: וְיִאמְרוּ ‘and let them say’ (Joel 2.17)

²²⁹ For detailed treatments of the distribution of *shewa ga'ya* see Yeivin (1968, 128–37, 252–61; 1980, 252–54), Dotan (1967, 128, 218–22, 357–58, 381), M. Breuer (1982, 193–97).

L: כִּי חֹצִיאָם ‘when they brought out’ (Josh. 10.24)

L: עַתְּ שִׁשְׁתִּים ‘his sneezings’ (Job 41.10)

L: וְאֵת־כָּל־הַשָּׂרִים ‘and all the princes’ (2 Kings 24.14)

Shewa ga'ya also occurs on a conjunctive *vav* when it has a *shureq* before a labial, e.g.

L: וְמַה־תַּעֲרֹרִי ‘and what do you awaken?’ (Cant. 8.4)

Given the strict conditions of word length for the occurrence of the secondary stress of minor *ga'ya*, these freer occurrence patterns of *shewa ga'ya* suggest that its motivation was not exclusively to mark a secondary stress. Rather, in some cases at least, its purpose was to slow down reading for orthoepic reasons. As remarked, this is likely to apply to some cases where it occurs before a guttural. Evidence for this is the fact that there are instances where *shewa ga'ya* occurs before a guttural on a word that has an *'azla* accent sign that itself marks a secondary stress, e.g.

L: וְהִיְּה ‘and it will be’ (Isa. 28.4)

In most cases, *shewa ga'ya* occurs at the beginning of a word, as in the examples cited above. In a few cases in the three books, it occurs in the middle of a word, e.g.

L, A: אָשָׁרִירָה אִישׁ ‘blessed is the man’ (Psa. 1.1)

L: יְחַפְּשׂוּ עֹלָת ‘they search out iniquities’ (A: יְחַפְּשָׂו, Psa. 64.7)

In both these cases, the *shewa ga'ya* clashes with an immediately preceding *ga'ya* or *merkha*, suggesting that it reflected the slowing of the reading for orthoepic purposes rather than a secondary stress beat.

According to Masoretic treatises, a *shewa* with *ga'ya* was read with the length of a full vowel. This is seen, for example, in a passage concerning the pronunciation of *shewa* before gutturals in the *Treatise on the Shewa* edited by Levy (1936):

It (the *shewa*) should not be pronounced (in the word הַבָּעֵלִים) as a pure *qameṣ*, equal (to the following *qameṣ*), i.e. with lengthening, but rather it is pronounced short, as if it were *qameṣ*, but not a full *qameṣ*, e.g. הַבָּעֵלִים, but you do not say *הַבָּעֵלים*, for that is a mistake. Likewise, when it is adjacent to vowels other than *qameṣ*, it is pronounced short. This is also the case when two *shewas* come together, as in נִימְצָאוּ נִיקְרָאוּ אֲשֶׁרֶת, and likewise אֲרֹגְעָה, אֲרֹבָּה, and likewise נִימְצָאוּ נִקְרָאוּ נִישְׁמָעוּ. Follow this (rule), do not add to it or subtract from it, unless *ga'ya* occurs with *shewa*, in which case you make it long and it is pronounced as a *qameṣ*. For instance, the word וְהִיה, when you add *ga'ya* to the *shewa*, i.e. וְהִיהְ, is pronounced וְהִיהְ with a full *qameṣ*. The same is so in the case of *segol*, e.g. וְחַזְיקָוּ is pronounced וְחַזְיקָוּ. Likewise דָּאִיְדָּאִי 'go out' (Cant. 1.8) is read with *hireq* as if it were דָּאִיְדָּאִי; שָׁאַלְנוּ שָׁבְּנָנוּ; צָאַלְנוּ; פָּתָהּ 'our captors asked us' (Psa. 137.3) is read שָׁאַלְנוּ פָּתָהּ; תְּאַהֲבָוּ פָּתָהּ 'you will love being simple' (Prov. 1.22) is read תְּאַהֲבָוּ פָּתָהּ. All such instances of *shewa* are pronounced full with the pronunciation of the (vowel of the) adjacent guttural letter, on account of the principle of the *ga'ya*, for it is the *ga'ya* that lengthens them. If there is no *ga'ya*, *shewa* is always pronounced short and is not lengthened. This condition is never changed. So it is with

all the occurrences of *shewa* that we have discussed, all instances of its vocalic realization follow this rule.²³⁰

The purport of this and similar passages from other Masoretic treatises²³¹ is that a *shewa* with *ga'ya* was pronounced as a long vowel, which was equal in status to a full vowel represented by a vowel sign.

The Karaite transcriptions into Arabic indicate that *shewa ga'ya* was pronounced as a long vowel, since they represent it with a *mater lectionis*, e.g.

בְּנַחֲלָה (BL Or 2547 fol. 15r, 11 | L [BHS]: Josh. 13.6
‘as an inheritance’)

²³⁰ ليس ينبغي أن يברג מثال קמץ מחוֹן בשווה פרתרתי בתתקיל בـ لأنما يברג בתלבפי.caנה קמץ ולא קמץ תאם בכוֹל הבעלים ולא יקול הבעלים פיכון דלך בטא. וכן ברגוג אֶת־אָגָוֹ נִיר אַלְקָמֵץ בְּתַבִּפִּיף וְכַדֵּלְךָ אֶת־אָפְּטָק אַתְּנִין מְזֻוָּגָן כְּמוֹ תָּאָמֵר אַשְׁמָעָה אַרְגָּעָה אַרְבָּעָה וּמְתָלֵל וַיְקָרְאוּ וַיִּמְצְּאוּ וַיִּשְׁמְעֻוּ הַנְּמַצְּאִים אֲקִיס עַל הַדָּא לֹא תַזִּיד וְלֹא תַנְקִץ אֶלָּא עַל הַדָּא אֶת־פְּתָקָלָה פִּיבְּרָג חִינִּיךְ בְּקָמֵץ בְּכוֹלָךְ הַוְּהָא אֶת־אָגָוֹ גַּעַת מְעָה גַּעַת אֶת־יְתָפֵק מֵעַל־אַלְשָׁוָא גַּעַת פְּתָקָלָה פִּיבְּרָג חִינִּיךְ בְּקָמֵץ בְּכוֹלָךְ הַוְּהָא אֶת־אָגָוֹ גַּעַת מְעָה גַּעַת אֶת־יְתָפֵק מֵעַל־אַלְמָתֵל וְהִיה יְקָאֵל וְהִיה בְּמִקְמֵץ תְּאַחֲבָוּ פָּתִי. כֹּל הַדָּא וְמַתָּלֵל צָאֵי לְךָ וּמַתָּלֵל שְׂאָלוֹנוֹ שׁוּבוֹנוֹ תְּקֻול וְחִזְקוֹנוֹ וּמַתָּלֵל צָאֵי לְךָ יְקָרָא בְּנַקְתָּה וְאַחֲדָה כְּאֵנֶיךְ תְּקֻול וְחִזְקוֹנוֹ שְׂאָלוֹנוֹ וּמַתָּלֵל צָאֵי לְךָ תְּאַהֲבָוּ יְקָרָא תְּאַהֲבָוּ פָּתִי. כֹּל הַדָּא וְמַא שְׁאָכְלָה אָתְּתָא תְּבָרָג בְּרָגָג תְּאַמְּנָה כְּבָרוֹג אַלְחָרֶף אַלְמָגָאָוָר לְהָא מִן הַחַחָע בְּסַבֵּב אַלְעָלָה אַלְתִּי לְלָגָעָה לְהָא אַלְגָּעָה הַיְּאָלָתִי אַלְמָתֵל. ואָנָּא לֹא גַּעַת פְּבָרוֹגָהָא בְּתַבִּפִּיף יְכֹונָן אַבְדָּא וְלֹא בְּתַקְקִיל וְלֹא יְתָגֵיר הַדָּא אַלְשָׁרֶט לְעוֹלָם וּמַתָּלֵל פִּי גַּמְיָע אַקְסָאָם טְהוֹרָה אַלְתִּי שְׁרָחָנָהָא גַּמְיָע חַרְכָּתָה עַל הַדָּא אַלְמָתֵל.

²³¹ E.g. *Hidāyat al-Qāri'* (short version, edition in vol. 2 of this book, §II.S.5.1, §II.S.5.3), Baer and Strack (1879, 12–13); cf. Khan (2009, 3*–7*).

كَامُونْخَام (BL Or 2552 fol. 16v, 13 | L [BHS]: בְּמַזְכֵּם Job. 12.3

‘like you’)

وَاتْرُوكَاهَا (BL Or 2553 fol. 5v, 5 | L [BHS]: וְתִמְכִּיהָ Prov. 3.18

‘and those who support her’)

عَاطِيسْوَثَاو (BL Or 2552 fol. 87v, 14 | L [BHS]: עֲטִישֹׁתָאָו Job.

41.10 ‘his sneezings’)

The default pronunciation of vocalic *shewa* was with the quality of *patah* [a]. This explains why the *shewa ga'ya* in the foregoing examples is represented by Arabic *mater lectionis 'alif*, which represents long [a:]. A lengthened *hatf patah* is likewise represented by *mater lectionis 'alif*.

A *mater lectionis* is, however, sometimes omitted in the transcriptions of *shewa ga'ya*. This is regularly the case in many manuscripts in contexts where *shewa* has a higher vowel quality than *patah* before *yod* or gutturals, e.g.

وَيَأْعِبُذُوا (BL Or 2552 fol. 63r, 15 | L [BHS]: וַיַּעֲבֹדוּ Job.

36.11 ‘and they will serve’), in which the *shewa* before *yod* is pronounced with the quality of *hireq* [vi:jə:fə'vo:ðu:]

وَأَوْلَم (BL Or 2552 fol. 18v, 7 | L [BHS]: וְאֹלֶם Job. 12.7

‘but’), in which the *shewa* has the quality of *shureq* before a guttural followed by *shureq* [wu:?'u:lɔ:cm]

صَأْيٌ لَاخٌ (BL Or 2554 fol. 35r, 1 | L [BHS]: נְאַיָּה Cant.)

1.8 ‘go out’), in which the *shewa* is pronounced with the quality of *hireq* before a guttural followed by *hireq* [s^gi:[?]i:[?]c:[?]c:[?]a:]

وُعِينَاخٌ (BL Or 2549 fol. 112r, 6 | L [BHS]: וְעִינֵּיךְ Jer. 34.3

‘and your eyes’), in which the *shewa* is pronounced with the quality of *sere* before a guttural followed by *sere* [ve:[?]fe:[?]ne:[?]χɔ:]

وَحْزَطَى (BL Or 2553 fol. 22v, 8 | L [BHS]: וְחֹטֶא Prov. 8.36

‘he who misses me’), in which the *shewa* is pronounced with the quality of *holem* before a guttural followed by *holem* [vo:[?]ho:ot[?]i:]

In such manuscripts a *mater lectionis* is also sometimes omitted when the *shewa* with *ga'ya* has the quality of [a], e.g.

تَشْلُحُوا (BL Or 2549 fol. 115r, 14 | L [BHS]: תְּשַׁלְּחוּ Jer. 34.14

‘you will send off’)

كَنَاعِينَ (BL Or 2552 fol. 85r, 3 | L [BHS]: כְּנָעֲנִים Job. 40.30

‘merchants’)

This distribution of *matres lectionis* representing *shewa ga'ya* in the Karaite transcriptions corresponds closely to the distribution we have seen representing minor *ga'ya*. This reflects a lesser duration of such vowels than vowels in other contexts. In my phonetic transcription of such forms, therefore, I transcribe the

vowels with half-length [a·], [i·], etc. Moreover, vowels of *shewa ga'ya* with a high quality were of a lesser duration than those with the low quality [a], as was the case with vowels marked by minor *ga'ya*. Manuscripts that do not represent high vowels of *shewa ga'ya* or minor *ga'ya* would regularly represent them if they are long vowels that are represented by vowel signs in an open syllable, as in

מִיחוּרָא (BL Or 2539 MS A, fol. 113v, 5 | L [BHS]: מִיחוּרָא)

Deut. 23.11 ‘from outside’)

Likewise, inherently long vowels followed by silent *shewa* are regularly transcribed by a *mater lectionis*, as in

וַיְירָא (BL Or 2547 fol. 7v, 1 | L [BHS]: וַיְירָא Josh. 4.14 ‘and

they (mpl) feared’)

The fact that the *hireq* vowel in a word such as מִיחוּרָא (Josh. 4.14) is regularly represented by a *mater lectionis* but a vowel of the same quality with *shewa ga'ya* in a word such as נִעֲשָׂה (Job. 36.11) is not regularly represented by a *mater lectionis* suggests that an open syllable containing vocalic *shewa* with *ga'ya* was different in status from the open syllable with a vowel sign. The syllable with a *hireq* vowel in a word such as מִיחוּרָא was bimoraic (CVV) whereas the vocalic *shewa* with *ga'ya* was monomoraic (CV) but was increased in duration phonetically by the *ga'ya*. The same applied to CVC syllables, in which the single vowel mora was increased in duration by a minor *ga'ya*. We may say that the *shewa ga'ya* stretched phonetically a short vowel, but did not, in principle, cause it to be lengthened to the duration of a long

vowel with underlying bimoraic length. The underlying syllable structure and phonetic syllable structure of a word such as עִינֵךְ (Jer. 34.3) ‘and your eyes’ would be: /v̚ē.n̚ē.χō/ [ve'.ye:.ne:.χɔ:]. In a word such as מִן־אָדָם ‘from man’ (Gen. 6.7), on the other hand, the long *sere* would be in the underlying syllable structure: /mē.ʔō.ðō.m/ [me:.ʔɔ:.ðɔ:m].

This appears to contradict the passage in the *Treatise on the Shewa* cited above, which claimed that a *shewa* with *ga'ya* was pronounced like a full long vowel. A more nuanced statement is, however, found in another passage in this treatise:

If someone objected and said to you: If *shewa* according to you is marked only with short vowels, why do you vocalize אֱלֹהִים ‘God’ with *shewa*, in which the ’alef has a long vowel. Likewise, אָדָנִי ‘my Lord’, הָרְאִיתָ ‘have you seen?’ (1 Kings 21.29), לָקַד אֶחָב־אֲשֶׁר ‘you did well’ (2 Chron. 6.8), and love a woman’ (Hos. 3.1), and also הַמִּמְיוֹךְ (A, L: המִמְיוֹךְ) ‘since your days (began)’ (Job 38.12), הַמִּבְיָתָךְ ‘is it from your understanding?’ (Job 39.26). The answer is that in all these words, and the like, when the *ga'ya* is removed, they are pronounced with a short vowel. We vocalize them with *shewa* on account of this shortness. The *ga'ya* is a subsidiary addition. We should not change the basic rule on account of a subsidiary case.²³²

²³² Ed. Levy (1936, *lacunae* supplied by CUL Or 1080.13.3.2, fol. 1r):
פָּאֵן עָרֶץ וְקִיל לְךָ אֶזְאָן אֶלְשׁוֹא עַנְדְךָ לֹא יְכוֹן אֶלְאָמֵעַ אֶלְבְּפִיר פָּלָם תְּנַקְטֵ אֱלֹהִים בְּשֻׂוֹא וְאֶלְאָפָּתְקִיל וּכְדָלְךָ מְתַלֵּה אָדָנִי וּמְתַלֵּה הָרְאִיתָ הַטְּبִיבָוֹתָ לְךָ אֶחָב אֲשֶׁר וּכְדָלְךָ הַמִּמְיוֹךְ הַמִּבְיָתָךְ. אֶלְגָאָב פִּי דָלְךָ אֶעָלָם אֵן הַזָּה אֶלְאָלְפָאָטְכָלְהָא וּמָא שָׁאֶכְלָהָא אֶזְאָן רְפֻעָה עַנְהָא אֶלְגָעָיה צָאָרָת בְּפִיפָה מְבֻטוֹפָה פְּנַחַן נְקַטָּהָא בְּשֻׂוֹא לְאֶגְלָל בְּפִתְחָה וְאֶנְמָא אֶלְגָעָיה טְפִילָה מְזָדָה פִּיהָא וְלִיס נְבָגִי נְגִיר אֶלְאָצָל מָן אֶגְלָל אֶלְפָרָעָה.

This passage could be interpreted as reflecting the notion that although the *ga'ya* lengthens the vowel of the *shewa*, it does not fundamentally change the status of the *shewa* to that of a full vowel. This can be reformulated in terms of metric analysis by the hypothesis that a *ga'ya* on a vocalic *shewa* does not change the foot structure, i.e. the *shewa* still remains within the foot of the following vowel and is not parsed as a separate foot. The foot structure of the words תְּשִׁלְחוּ (1 Sam. 6.3) and such as תְּשִׁלְחוּ (Jer. 34.14) would be the same (indicated by brackets):

תְּשִׁלְחוּ

[(ta.ʃal.)(la.'hu:)]

תְּשִׁלְחוּ

[(_ta.ʃal.)(la.'hu:)]

This should be contrasted with a CV syllable with a lexical vowel such as the *hatef qames* in a word such as קָדְשִׁים ‘holinesses’ (Exod. 26.33). We have seen that such syllables are in their own separate foot, although, since it consists of a monomoraic syllable, it should be classified as degenerate (§I.2.7.). When these take secondary stress, they are lengthened to the full duration of long bimoraic vowels in open syllables and represented by a full *qames* vowel. A *ga'ya* marking the secondary stress should, therefore, be interpreted as a major *ga'ya*. This prosodic structure was facilitated by the fact that they have their own foot:

קָדְשִׁים ‘holinesses’ (Exod. 29.37)

[(_qɔ:.)(_ðɔ:.)(_ʃi:.im)]

The syllable of a *shewa* with *ga'ya*, by contrast, remains subordinate prosodically to the following syllable in an iambic foot (. *). It is lengthened phonetically by the *ga'ya* but does not achieve the full bimoraic weight of the following syllable of the foot. This could be analysed as a case of ‘multi-plane metrics’ (Bosch 1996, Gordon 2006, Ryan 2016) whereby the phonetically prominent position and the metrically prominent position in a prosodic domain such as a foot or prosodic word do not necessarily coincide. The *shewa* with *ga'ya* is phonetically prominent in the foot due to the lengthening of the vowel, but the following syllable remains the metrically prominent syllable in the foot due to its weight and stronger beat.

In the Karaite transcriptions one case has been identified in which a *shewa* with *ga'ya* is transcribed with gemination of the following consonant and the *shewa* is replaced in the vocalization with a full vowel:

بְּמַעֲשָׂיו (BL Or 2555 fol. 19r, 5 | L [BHS]: בְּמַעֲשֵׂי Ecc. 3.22

‘in his works’)

Here the phonetic prominence and the metrical prominence have been brought into line, in that the syllable of the strengthened *shewa* has become bimoraic and so parsed as an independent foot.

I.2.10. METRICAL EPENTHESIS

As we have seen, patterns of secondary stress in principle exhibit eurhythmic alternating sequences of prominent and non-prominent syllables. The clash of a prominent syllable with the main

stress immediately adjacent to a prominent syllable with secondary stress marked by an accent or *ga'ya* is, in principle, avoided. There are some cases, however, where such a clash appears to take place. These include words in which a syllable with a short vowel immediately before the syllable with the main stress is marked by *ga'ya*. Such patterns occur when the contact between the two syllables consists of two weak consonants, i.e. the first syllable has a weak consonant as its coda and the following syllable has a weak consonant as its onset. This occurrence of *ga'ya* is found, for example, on a *pataḥ* where the syllable contact consists of coda that is a guttural and an onset that is one of the sonorants *yod*, *lamed*, or *nun*, or another guttural,²³³ e.g.

ישׁעַיָּהוּ [ja.ʃa.ʔ.ʃɔ:.hu:] 'Isaiah' (Isa. 1.1)

וְפִתְחֵיהָ [wuf.θəa.ħ.ʃɔ:] 'and Pethahiah' (Neh. 11.24)

יְדַעְיָה [ja.ða.ʔ.jɔ:] 'Jedaiah' (Neh. 12.6)

שְׁמַעְיָה [ʃa.ma.ʔ.ʃɔ:] 'Shemaiah' (Neh. 10.9)

וְשְׁמַעְיָהוּ [wuʃ.ma.ʔ.ʃɔ:.hu:] 'and Shemaiahu' (2 Chron. 35.9)

This type of lengthening before a guttural followed by another weak consonant is found also across word boundaries, where the two words are connected by *maqqef* or where they are independent words, e.g.

שְׁמַע-נָא [ʃa.ma.ʔ.-nɔ:] 'listen!' (1 Sam. 28.22)

לְקַח-לוּ [lɔ:.qə.ħ.-lo:] 'he took him' (Exod. 6.25)

דִּעְלָךְ [da.ɔ.ħ.-lɔχ] 'know you!' (Job. 5.27)

²³³ Yeivin (1980, 262) refers to this as a phonetic *ga'ya*.

קְחַתְּלָךְ [qa.tħ.tħ.ħ.čħ] ‘take for yourself’ (Gen. 14.21)

הָשְׁמָע עַמּוֹן [ha.'ʃm.ħ.ħ.ħ.ħ.ħ] ‘did any people hear?’
(Deut. 4.33)

It is even marked occasionally on furtive *pataħ* in such circumstances, e.g.

לִשְׁמַע לְזִין [liʃ.'mo.:a.ħ.-'lo:] ‘to listen to him’ (Jud. 19.25)

בְּכַח לֵב ['kʰo.:a.ħ.'le:.ev] ‘strength of heart’ (Job. 36.5)

This type of *ga'ya* is found also before other sequences of weak consonants across syllables in word-internal position. These consonants include gutturals, sonorants, continuants, sibilants, fricatives, and *qof*, e.g.

שִׁיעָר [ʃa.v.'fa:.aθ] ‘cry of’ (Jer. 8.19)

הַשְׁחִית [ha.ʃ.ħi:.iθ] ‘to destroy’ (Isa. 65.8)

חֶסֶד ['ħa.s.ħe:] ‘love of’ (Isa. 55.3)

סָרָגָן [sa.ʁ.ħ.ao:.on] ‘Sargon’ (Isa. 20.1)

כְּכַד [kʰa.ħ.ħ.ħ.ħ] ‘ruby’ (Isa. 54.12)

כְּלִנְהָ [ħa.l.ħ.ne:] ‘Calneh’ (Amos 6.2)

עֲרָבָות [ħa.ʁ.ħ.v.ħ.oθ] ‘desert plains’ (Josh. 4.13)

It is found also on high vowels, e.g.

וּבְצִקְלָג [wuv.ʃ.ħ.ħ.ħ.ħ] ‘and in Ziklag’ (Neh. 11.28)

מְשֻׁבָּן [mi.ʃ.ħ.ħ.ħ] ‘pull out!’ (Exod. 12.21)

הַרְצָפָה [ħa.ħ.ħ.ħ.ħ.ħ] ‘the pavement’ (2 Chron. 7.3)

וּבְקַבְּקִיהָ [wu.vaq.ħ.ħ.ħ.ħ] ‘and Bakbukiah’ (Neh 12.9)

The lengthening of the vowel is reflected by the Karaite transcriptions by an Arabic *mater lectionis*, although the *ga'ya* sign is not always marked in the manuscripts, e.g.

شَمَائِيْه (BL Or 2556, fol. 65r, 1 | L [BHS]: Neh. 10.9
‘Shemaiah’)

فَتَحِيَا (BL Or 2556, fol. 54v, 2 | L [BHS]: Neh. 9.5
‘Pethahiah’)

لَا عَلَيْكُ (BL Or 2552 fol. 7v, 4 | L [BHS]: Job. 5.27
‘know you!’)

سَمِاعٌ نَّاهِيْ (BL Or 2552 fol. 47v, 1 | L [BHS]: Job. 33.1
‘hear please!’)

لَوْ لَاقَهُ (BL Or 2542, fol. 50r, 5 | L [BHS]: Exod. 6.25 ‘he took him’)

لَأَشْبَعُ (BL Or 2549 fol. 226v, 9 | L [BHS]: Ezek. 16.8 ‘and I swore to you’)

لَأَسْبِعُ (BL Or 2551 fol. 96r, 13 | L [BHS]: Psa. 132.15 ‘I will satisfy (with) bread’)

لَهُمْ عَامٌ (BL Or 2539 MS A, fol. 88v, 1 | L [BHS]: Deut. 4.33 ‘did a people hear’)

شاواعات (BL Or 2549 fol. 65v, 1 | L [BHS]: שְׁעָעַת Jer. 8.19

‘cry of’)

حَاسْدِي (BL Or 2548 fol. 168r, 7 | L [BHS]: حَسْدٍ Isa. 55.3

‘love of’)

كَاذْخُوذ (BL Or 2548 fol. 164v, 11 | L [BHS]: كَذَبَل Isa. 54.12

‘ruby’)

وَبَقْبُوقِيَا (BL Or 2556, fol. 79r, 9 | L [BHS]: وَبَقْبُوكِيَّة Neh. 12.9

‘and Bakbukiah’)

وَبِصِيقْلَاغ (BL Or 2556, fol. 78r, 2 | L [BHS]: وَبِظِيقْلَاغ Neh.

11.28 ‘and in Ziklag’)

In some manuscripts, the *mater lectionis* is occasionally omitted in places where the *ga'ya* in L occurs on high vowels, e.g.

مشحو (BL Or 2542, fol. 58v, 7 | L [BHS]: מִשְׁחָה Exod. 12.21

‘pull out!’)

This is analogous to the omission of a *mater lectionis* where minor *ga'ya* or *shewa ga'ya* occur on a high vowel. It indicates that the duration of the vowel lengthened by this type of phonetic *ga'ya* was less than that of a long bimoraic vowel in an open syllable and that high vowels were inherently shorter than low vowels. The vowel, therefore, should be represented as half-long in roman transcription, e.g. [a'], [i'], [u'], as is the case with the vowels with minor *ga'ya* or the vowels of *shewa ga'ya*.

The *shewa* after this type of *ga'ya* was silent. This is shown by the representation of the silent *shewa* by Arabic *sukūn* in some of the Karaite transcriptions and by the fact that A regularly has a simple *shewa* sign rather than a *hatef patah*. This should be contrasted with cases of phonetic *ga'ya* that augment the short vowel by an extra mora and cause the *shewa* to be vocalic by inducing a resyllabification (§I.2.5.8.), e.g.

- L: קַלְמָתָה [ha.θi:.ma.'lo:.oχ] ‘Are you a king?’ (A קַלְמָתָה, Jer. 22.15)

In such cases, the vowel should be transcribed as fully long, viz. [a:], [i:], [u:].

The purpose of the phonetic *ga'ya* before a silent *shewa* in forms such as יהִישָׁוּ [ja.ʃa.ʔ.ʃɔ:.hu:] was orthoepic, just as was the case with the phonetic *ga'ya* before a vocalic *shewa* in a word such as קַלְמָתָה [ha.θi:.ma.'lo:.oχ]. Both cases were a measure to avoid the slurring of the weak letters together in the reading. They were evidently felt to be vulnerable to such slurring due to the fact that they formed a suboptimal syllable contact. 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 (Vennemann 1988, 40).

In forms such as יהִישָׁוּ [ja.ʃa.ʔ.ʃɔ:.hu:], the clash of two prominent syllables can be assumed to have induced a repair mechanism in the form of a short pause equivalent to a weak beat, in effect a metrical epenthetic or zero syllable. The foot and grid structure of this can be represented thus (the final syllable enclosed in angular brackets is extra-metrical):

Level 4			x	
Level 3		x	x	
Level 2		x	x	<x>
Level 1	x	x	x	<x>
Feet	(.	*)	(.	*)
	ja	ʃa·�	∅	'jo:
				hu:

In some cases lengthening of the vowel before the weak consonants is represented in the Karaite transcriptions where a *ga'ya* is not marked in L. It regularly occurs, for example, in the word יִשְׁעֵיהוּ even where L does not have *ga'ya* on the *shin*, e.g.

ישעיהו (BL Or 2548 fol. 14r, 9 | L [BHS]: ישְׁעֵיהוּ Isa. 37.5
'Isaiah')

A minor *ga'ya* is marked on some constructions that have a phonetic *ga'ya* of this nature, e.g.

- A: שָׁפַח־רַגְלָה, [ʃa·p̚aχ·ra·g̚al̚a] 'the breathing out of the soul' (L [BHS]: שָׁפַח־נֶפֶשׁ Job. 11.20)
- L: וַיִּשְׁמַעְיָה [vi·ji·ʃ̚ma·y̚a·∅·j̚o:] 'and Ishmaiah' (1 Chron. 12.4)
- L: וַיִּקְחֵה־לוֹ [va·j̚i·q̚aq̚a·h̚∅·lo:] 'and he took for himself' (Gen. 4.19)

The lengthening is reflected in the Karaite transcriptions, e.g.

mafāḥ-^{نافس}_{ما} (BL Or 2552 fol. 16r, 5 | A מַפְחַד־נֶפֶשׁ Job. 11.20)

וַיִּזְרַח לֵב (BL Or 2544, fol. 34r, 9 | L [BHS]: Gen.

32.32 ‘and it rose for him’)

This indicates that the pattern of the constructions was prosodically equivalent to the regular structures of minor *ga'ya*. They may be compared, in particular, to the pattern מְתֻפָּעֲלִים. In a structure such as וַיִּשְׁמַעְיָה [vi.ji.ʃ̚.ma.∅'jɔ:], therefore, the metrical epenthetic ∅ would correspond to the short *hatef* vowel of מְתֻפָּעֲלִים. This is evidence for the existence of the metrical epenthetic. Moreover, the equivalence of the two structures demonstrates that the duration of the *patah* before the *hatef* in מְתֻפָּעֲלִים and of the *patah* with the phonetic *ga'ya* in וַיִּשְׁמַעְיָה was equivalent, i.e. a half-long [a̚].

Metrical epenthesis between two weak consonants in the contact of two syllables can be identified as an orthoepic strategy in some forms of the verbs הִיה ‘to be’ and חִיה ‘to live’. This is achieved by lengthening the *hireq* of prefixes before *he* or *het* and lengthening the *patah* of the conjunctive prefix *va-* before *yod*, e.g.

יְהִי [ji.h'je:] ‘it will be’ (Gen. 1.29)

יְחִי [ji.h'je:] ‘he lives’ (Ecc. 6.3)

מִקְהִיוֹת [mi.h'jo:oθ] ‘from being’ (Jer. 31.35)

וַיִּהְיָה [va.j'hi:] ‘and it was’ (Gen. 4.3)

וַיִּחְיָה [va.j'hi:] ‘and he lived’ (Gen. 5.3)

In the model Tiberian codices, the prefixes of these verbs are frequently, though not regularly, marked with a *ga'ya* sign.

The marking of *ga'ya* differs across the manuscripts. In places where it is omitted in L and A, it is often marked in C. The Karaite transcriptions indicate that the vowel of the prefixes was regularly lengthened, including where it is omitted in L and A, e.g.

يَبْهِيَا (BL Or 2549 fol. 87r, 6 | L [BHS]: יְהִיָּה Jer. 23.17 ‘it (ms) will be’)

وَيَبْهِيُونُ (BL Or 2549 fol. 55r, 14 | L [BHS], A: וַיְהִי, C: וַיְהִי Jer. 7.24 ‘and they were’)

تَبْهِيَا (BL Or 2549 fol. 58r, 12 | L [BHS], A: תְּהִיָּה, C: תְּהִיָּה Jer. 7.34 ‘it (fs) will be’)

مِهْيَوْثٌ (BL Or 2549 fol. 92r, 12 | L [BHS]: מִקְיּוֹת Jer. 31.35 ‘from being’)

تَبْحَيُونُ (BL Or 2549 fol. 120r, 10 | L [BHS]: תְּחִי Jer. 35.7 ‘you (mpl) will live’)

وَيَبْهِي (BL Or 2540, fol. 3v, 4 | L [BHS]: וַיְהִי Exod. 1.5 ‘and it was’)

وَايْحَى (BL Or 2548 fol. 28r, 9 | L [BHS]: وַיְחִי Isa. 38.9 ‘and he lived’)

Since the Karaite transcriptions mark the vowels as long even where the model codices, even C, do not mark *ga'ya*, the

lengthening of the vowel is not directly correlated with the marking of the *ga'ya*.

When the prefix of the verb begins with a consonant other than *yod*, the *patah* in the *va-* prefixed particle is not lengthened, since there was no contact of two weak consonants and metrical epenthesis was unnecessary, e.g.

וְתַהֲיִ [vatt^{hi}'hi:] ‘and it (fs) was’ (Jud. 11.29)

This is shown by the fact that Karaite transcriptions regularly have no *mater lectionis* in such contexts, e.g.

וְתַהֲיִ (BL Or 2547 fol. 34r, 5 | L [BHS]: וְתַהֲיִ Jud. 11.29 ‘and it (fs) was’)

Some manuscripts of the Karaite transcriptions represent only the *patah* of the forms וְיַהְיִ and וְיַחְיִ but not *hireq* in the prefixes of these verbs, reflecting the lengthening only of *patah*, e.g. Or 2539 fols. 56–114:

וְיַהְיֵ (BL Or 2539 MS A, fol. 71v, 6 | L [BHS]: וְיַהְיֵ Gen. 24.15 ‘and it was’)

יְהִיא (BL Or 2539 MS A, fol. 97r, 8 | L [BHS]: יְהִיא Deut. 18.22 ‘he will be’)

יְהִיּוּ (BL Or 2539 MS A, fol. 103r, 4 | L [BHS]: יְהִיּוּ Deut. 20.11 ‘they will be’)

Manuscripts such as Or 2539 fols. 56–114 that do not represent the *hireq* with *mater lectionis* mark long *hireq* in other contexts with a *mater lectionis*, e.g.

مِيقُوت (BL Or 2539 MS A, fol. 57r, 8 | L [BHS]: תִּחְנַת- Gen.

14.23 ‘from a thread’)

This suggests that the *hireq* in the prefixes of these verbs was long, but was perceived to be shorter in duration than the *patah* in prefixes of these verbs and shorter than long *hireq* in other contexts. This is reminiscent of the short vowels in closed syllables that were lengthened by minor *ga'ya*. These, likewise, were only half-long and exhibit a lesser duration when the vowel is a high vowel (§I.2.8.2.2.).

I have presented evidence elsewhere (Khan 2018b) that the orthoepic measure of lengthening the vowels before two weak consonants in forms of the verbs הָיָה and חָיָה had deep historical roots that can be traced to the proto-Masoretic reading in Second Temple Palestine before the split of the Tiberian and Babylonian branches. It arose as a measure to ensure that the gutturals were not weakened in these verbs and thus to prevent them from being confounded. The argument, in brief, is that all initial *he* and initial *het* verbs originally had an /i/ vowel in prefixes in the proto-Masoretic reading. This situation has been preserved in the Babylonian reading tradition, whereas in the Tiberian tradition the vowel generally underwent lowering to a *segol* or *patah* (Yeivin 1985, 302), e.g.²³⁴

²³⁴ Data supplied by Shai Heijmans.

תְּהַדֵּפּוּ [tihdo:fu:] (L [BHS]: תְּהַדֵּפּ פֹּ Ezek. 34.21 ‘you will push’)

יְהִרְגּוּן [yihro:gsu:] (l [BHS]: יְהִרְגּוּנָה Psa. 94.6 ‘they will kill’)

The /i/ has been preserved in the verbs חִיה and חִיה in the Tiberian tradition because it was lengthened for orthoepic reasons. This must have taken place before the vowel lowering took place in initial *he* and *het* verbs at a remote historical period when such verbs originally had /i/ in the prefixes before the Babylonian and Tiberian branches split.

This demonstrates that orthoepy was already a feature of the ancient reading and that care over the oral reading of the text went hand in hand with care over the copying of the written text at an ancient period, presumably within Temple circles.

Vowels lengthened before weak consonants for the purpose of orthoepic metrical epenthesis such as the constructions mentioned in this section, although not fully bimoraic vowels, appear to have been of a slightly longer duration than vowels in closed syllables lengthened by musical minor *ga'ya*. This is shown by the fact that there are manuscripts of Karaite transcriptions that transcribe the *hireq* or prefixes of the verbs חִיה and חִיה with an Arabic *mater lectionis* but omit the *mater lectionis* where a *hireq* has minor *ga'ya*, e.g.

يَهْيُون (BL Or 2549 fol. 59r, 1 | L [BHS]: יְהִיּוּ Jer. 8.2 ‘they will be’)

هُشْتَاجُون (BL Or 2549 fol. 58v, 13 | L [BHS]: הָשְׁתַּחֲוָה Jer. 8.2 ‘they worshipped’)

Likewise, there are some manuscripts that regularly transcribe a *pataḥ* lengthened in metrical epenthesis constructions by an Arabic *mater lectionis*, but sometimes omit a *mater lectionis* in the transcription of *pataḥ* with minor *ga'ya*, e.g.

وَيَهِيٌ (BL Or 2542, fol. 43r, 3 | L [BHS]: וַיְהִי Exod. 1.5 ‘and it was’)

لَوْ لَاقَهُ (BL Or 2542, fol. 50r, 5 | L [BHS]: לְקַח־לֹא Exod. 6.25 ‘he took for himself’)

وَيَشَرَّصُو (BL Or 2542, fol. 43r, 6 | L [BHS]: וַיִּשְׁרַׁץּוּ Exod. 1.7 ‘and they swarmed’)

The lengthening of the vowel before weak consonants in syllable contact in constructions with metrical epenthesis described in this section is occasionally extended by analogy to situations in which the vowel occurs before weak consonants but is not immediately followed by the syllable bearing the main stress. These often occur before *maqqef*, e.g.

אֶרְבָּע־עֲשָׂרָה [ʔar̩ba.ʕ-ʕes̩'re:] ‘fourteen’ (Gen. 31.41)

וַיְהִי־עָרֵב [va:jhi:-'ʕe:rev] ‘and it was evening’ (Gen. 1.5)

I.2.11. MAQQEF

The *maqqef* sign joins words that are read together as a group with a single main stress.²³⁵ The number of words joined in this way is most frequently two, e.g.

- L: אֹרֶת-הָאֵת ‘the light’ (Gen. 1.4)

There are some cases of three, or, sporadically, even four words joined together into a single main stress group, e.g.

- L: פְּרֻעַה-לִבְתְּ-אֹת ‘the heart of Pharaoh’ (Exod. 14.4)

- L: עֲלֵל-כָּלְדָּבָר-פְּשֻׁעַ ‘for every case of crime’ (Exod. 22.8)

There are three main factors that condition the use of *maqqef*.

(i) When there would be a clash of two main accents across two words, i.e. where one word has word-final stress and the following has word-initial stress, the stress of the first word is sometimes eliminated by joining it together with second by *maqqef*, e.g.

- L: יְמִרְאֵת ‘say with regard to me’ (Gen. 20.13)

- L: בָּם-אֲוֹתָנָם ‘they were found among them’ (Jer. 41.8)

- L: סִפְרַת-מְגֻלָּת ‘the scroll of a book’ (Jer. 36.2)

(ii) Small monosyllabic words are often attached to a following word even if there would not have been a clash of accents.

²³⁵ For a detailed description of the use of *maqqef* see Yeivin (1980, 228–36) and the literature cited there. See also Holmstedt and Dresher (2013).

This occurs particularly frequently when the short word has a short vowel in a closed syllable, e.g.

- L: אֶל־אַבְרָהָם ‘to Abraham’ (Gen. 20.10)
- L: בְּלִ-הַדְבָּרִים ‘all the words’ (Exod. 4.30)
- L: בָּנֵי-הַאֲמָה ‘son of the slave woman’ (Gen. 21.10)

(iii) *Maqqef* that does not fall into one of the two previous categories may be motivated by the constraints of the musical accent system. This is the case where a particular disjunctive can be preceded only by a limited number of conjunctive accents. In the following extract, for example, the *tifha* can only be preceded by one conjunctive, so the two preceding words are joined together in a single accent group by *maqqef*:

- L: וְאִם־רֹעַ בְּעִינֶיךָ לְבָזָא־אַתִּי בְּבֵל חָדָל ‘but if it seems wrong in your eyes to come with me to Babylon, desist.’ (Jer. 40.4)

As remarked, a *maqqef* after a word, in principle, deprives the word of its main stress. As a result, vowels that do not have an inherent length feature are pronounced short when they are left unstressed, e.g.

- כָּל /k^hol/ [k^ho:ol], בָּל /k^hol/ [k^hɔl] ‘all’
- עַזְּזָעַז /'fɔ:oz/, עַזְּזָעַז /fɔz/ [fɔz] ‘strength’ (Isa. 26.1)
- תִּמְשָׁל /t^himʃol/ [t^himʃɔ:ol] (Gen. 37.8), תִּמְשָׁל /t^himʃol/ [t^himʃɔl] (Gen. 4.7) ‘you master’
- תְּאֵת /?eθ/, תְּאֵת /?eθ/ [?ɛθ] object marker
- וַיְתַּعֲבֵן /vajjitt^hen/ [vajjit't^heen], וַיְתַּעֲבֵן /vajjitt^hen/ [vajjitt^hɛn] ‘and he gave’

Vowels with an inherent length feature do not in principle undergo such shortening in words followed by *maqqef*, e.g.

L: בֵּית־אָבִיךְ /bēθ/ [be:eθ] ‘your father’s house’ (Gen. 24.23)

L: אִישׁ־אֶחָד /?iʃ-/ [?i:iʃ] ‘one man’ (Gen. 42.11)

L: שָׁלֹשׁ־מֵאוֹת /ʃlōʃ-/ [ʃalo:oʃ] ‘three hundred’ (Num. 31.36)

On some sporadic occasions, an inherently long *holem* in a closed syllable in a word with *maqqef* is shortened to short *qames*, e.g.

L: וְאַם־שָׁלֹשׁ־אֶלְהָה /wə'am-ʃlōʃ-/ [wə'a'm-ʃlōʃ-ələh] ‘if these three’ (Exod. 21.11)

On a number of occasions, the Karaite transcriptions omit a *mater lectionis* in their representation of inherently long *holem*, *qames* or *sere* in closed syllables in words with *maqqef*, which reflects a wider range of shortening of inherently long vowels than is represented by the Masoretic vocalization, e.g.

شָׁלֹשׁ-מֵאוֹת (BL Or 2549 fol. 145v, 15 | L [BHS]: شَلْسُ-مِائَةٌ

Ezek. 4.5 ‘three hundred’)

הַזְּדָה (Genizah MS 13, Khan 1990a, 13 | L [BHS]: الْهُدَى Psa.

111.3 ‘majesty’)

الْهُزُّ (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הַזְּעַן Psa.

112.3 ‘wealth’)

يَمْ-كَنِيرָת (Or. 2546, fol. 118v, 5 | L [BHS]: يَمْ-كَنِيرָة Num.

34.11 ‘sea of Chinnereth’)

לְבַ-פָּרָעָה (BL Or 2540, fol. 20v, 7 | L [BHS]: Exod. 7.22 ‘the heart of Pharaoh’)

בֵּית-אֲבֹתָם (BL Or 2540, fol. 17r, 2 | L [BHS]: Exod. 6.14 ‘the house of their fathers’)

In contrast to these indicators of prosodic reduction due to lack of stress, there are some features of words with *maqqef* that reflect an effort to pronounce such words with some degree of prosodic independence.

In some cases, for example, an intrinsically short /o/ vowel in a word with *maqqef* is represented by *holem* [o:] rather than the expected short *qames* [ɔ]. In the following two examples, the syllable with the *holem* is marked by a *ga'ya*, reflecting a secondary stress:

- L: יְנַבֵּ-אִישׁ ‘a man steals’ (Exod. 21.37)
- L: עַזְלָמָו ‘strength to them’ (Psa. 28.8)
- L: רַבְ-פָשָׁעָה ‘the multitude of her sins’ (Lam. 1.5)

Compound numerals with elements joined by *maqqef* generally reflect a secondary stress on the first element before the *maqqef*, either by a *ga'ya* or by a long realization of an intrinsically short vowel, e.g.

- L: אַרְבָּעַ-עָשֶׂרָה ‘fourteen’ (Gen. 14.4)
- L: שְׁבָעַ-עָשֶׂרָה ‘seventeen’ (Gen. 37.2)
- L: וְשִׁשְׁ-עָשֶׂרָה ‘and sixteen’ (2 Kings 15.33)

The Masoretic treatises discuss the distribution of monosyllabic words with the intrinsically short vowels /e/ and /o/, which, in principle, are realized as the long vowels *sere* [e:] and *holem* [o:] respectively when stressed and the short vowels *segol* [ɛ] and *qames* [ɔ] when in words with *maqqef*, e.g. חַשְׁשָׁ/שַׁשְׁׁשָׁעִירִים, שַׁשְׁׁשָׁעִירִים, קֶלֶלֶל, שֶׁזֶן/שְׁזֶן, בָּזָבָז, לֶבֶלֶב, עַתָּעַת. ²³⁶ The sources point out, however, that these vowels have a long realization in a word with *maqqef* when they are separated from the main accent by at least one intervening syllable, e.g.

- L: שְׁשַׁ-הַשְׁעָרִים ‘six (measures) of barley’ (Ruth 3.17)
- L: שְׁזַ-הַסְּלָעַ ‘a crag of rock’ (1 Sam. 14.4)
- L: בָּזַ-פְּרִיז ‘a robber son’ (Ezek. 18.10)
- L: אֲתַ-כְּלָגְבָּה ‘everything that is high’ (Job 41.26)

This, likewise, may have been conditioned by secondary stress, although a *ga'ya* is not marked on the syllable in all these cases in L, A and C.

Conversely, forms of these words with *segol* or *qames* occasionally take an accent (§I.2.3.2.), e.g.

- L: בֵּן יָאִיר (Esther 2.5) ‘son of Yair’
- L: אֶת אַרְם נָהָרִים (Psa. 60.2) ‘with Aram-naharaim’
- L: כָּל אֲחִי-רָש (Prov. 19.7) ‘all the brothers of a poor man’

These may have arisen by a process of giving greater prosodic independence to a word that was originally unstressed.

²³⁶ E.g. *Diqduqe ha-Te'amim* (ed. Dotan, 1967, §§6-8), *Hidāyat al-Qāri'*, long version, edition in vol. 2 of this book, §II.L.3.2.4.

There are, indeed, some variants in the sources. According to *Diqduqe ha-Te'amim* (ed. Dotan, 1967, §8), for example, the word בָּל in Psa. 87.7 has its own accent but in L it has a *maqqef* (כָּל-) ‘all my springs’).

The lists of differences in *Kitāb al-Khilaf*, moreover, show that Ben Naftali in a number cases read a word with a conjunctive accent where Ben Asher read it with *maqqef* (A. Ben-David 1957b, 391–92), e.g.

Lev. 24.16:

Ben Asher: בְּנַקְבֹּשׁ שֵׁם Ben Naftali: בְּנַקְבֹּשׁ שֵׁם ‘when he blasphemes the Name’

Gen. 39.6:

Ben Asher: יְפֵה תָּאֵר, Ben Naftali: יְפֵה־תָּאֵר ‘beautiful in form’

Job 12.3:

Ben Asher: וְאֶת־מִצְאֵן, Ben Naftali: וְאֶת־מִצְאֵן ‘with whom is not?’

This is a reflection of the general tendency of Ben Naftali to introduce a greater number of orthoepic innovations into the reading than Ben Asher, who was usually more conservative.²³⁷

²³⁷ In the manuscript II Firkovitch Evr. II B 159 (referred to as L² by Yeivin 1980, 23) the *maqqef* sign is sometimes marked when the first word has a conjunctive accent, e.g. בְּטֻרְמָאָבְיָנָנָה ‘before I brought them’ (Deut. 31.21) and conversely a *maqqef* sign is sometimes omitted after a short word without an accent, e.g. וְאֶל יָמָת ‘and may he not die’ (Deut. 33.6). This appears to reflect the overlapping of two traditions with regard to the division of words.

In some cases, there are variations between the *qere* and the *ketiv* of a word with *maqqef*, e.g.

Josh. 9.7: *ketiv* לְךָ, *qere* אַכְרֹת־לְךָ 'I make (a covenant) for you'

Hosea 8.12: *ketiv* לְוּ, *qere* אַכְתֹּב־לְוּ 'I write for him'

In such cases, the *ketiv* with *mater lectionis vav* reflects a reading with greater prosodic independence than the *qere*.

In the early manuscripts, when a word with *maqqef* ends in an open syllable and the subsequent word has the stress on its initial syllable, the final open syllable of the first word often has a *ga'ya* (Yeivin 1968, 165; 1980, 250), e.g.

L: כִּי־אָשׁ (Jer. 17.4) 'for fire'

A: אֲנִישׁ־תִּילָּ (Nah. 2.4) 'men of strength'

The occurrence of secondary stress on the syllable immediately adjacent to the main stress implies that the two words were separated somewhat, since otherwise there would be a clash of prominent accent syllables. The metrical structure of a phrase such as כִּי־אָשׁ, therefore, may be represented as follows:

[($k^h i$):(\emptyset)('?exe)]

A metrical epenthesis of an intervening interval between the two prominent syllables can be assumed to have occurred. This is analogous to the analysis of the metrical structure of words such as יְשֻׁעָה [jaʃa'∅jɔ:hu:], in which metrical epenthesis makes a clear division between weak consonants (§I.2.10.).

In the discussion of *dehqiq* above in §I.2.8.1.2. we have seen that the vowel in a final open syllable in a word with *maqqef* is

given sufficient duration to be represented by the Karaite transcriptions with a *mater lectionis*. This applies even to the *patah* in constructions with the interrogative word מַה, which must have been short at some earlier period, e.g.

L: מַה־לְקָצֶת [ma'-ləqət] (Gen. 21.17) ‘What [is] to you (fs)’

This was a strategy of making a clear division prosodically between the orthographically separate word with *maqqef* and the word following it. Another strategy to achieve the same purpose that is reflected by some of the Karaite transcriptions was to glottalize the offset of the *patah* vowel of מַה. This is represented by an Arabic *hā'*, e.g.

مَهْ-شَمَاخٌ [mah-ʃʃa'meχɔ:] (BL Or 2544 fol. 33v, 1 | L [BHS]: מַה־שְׁמָאֵךְ Gen. 32.28 ‘What is your name?’)

مَهْ-شَمُونٌ [mah-ʃʃa'mo:] (BL Or 2544 fol. 76v, 12 | L [BHS]: מַה־שְׁמוֹן Exod. 3.13 ‘What is his name?’)

مَهْ-زَّا [mah-'zze:] (BL Or 2544 fol. 79v, 8 | L [BHS]: *ketiv* מה-זָה, *qere* מה-זָה Exod. 4.2 ‘What is this?’)

مَهْ تَاعِيرُو وَمَا تَعُورِرُو [mah-tt^hɔ:ʃi:rū:, wu'mah-tt^hoʃɔ:rā'ru:] (BL Or 2554 fol. 86v, 11 | L [BHS]: מַה־תִּעְירֹו | וְמַה־תִּעְרֹרֹו Cant. 8.4 ‘What do you stir up and what do you awaken?’)

مَهْ شَاهَايَا [mah-ʃʃe:hɔ:hɔ:] (BL Or 2555 fol. 12v, 1 | L [BHS]: מַה־שְׁחַהִיל Ecc. 3.15 ‘that which was’)

Such glottalization involves the devoicing of the offset of the vowel, which is a cross-linguistically attested device for marking divisions between prosodic words.²³⁸

Glottalization of final vowels as a strategy to separate words joined by *maqqef* is attested in other contexts in the Karaite transcriptions, e.g.

نَقْرَاهْ شَمِيْ [niq̚r̚ah-ʃam̚i:] (Genizah MS 14, Khan 1990a,

2r, 8 | L [BHS]: נִקְרָא-שִׁמֵּי Jer. 32.34 ‘My name is called’)

Evidence for glottalization of word-final vowels can also be found in the use of the *dagesh* sign in some manuscripts with Palestinian vocalization, e.g. נִקְרָה (Revell 1970a, 21). The use of the element [h] as a pausal device is reminiscent of the Arabic *hā'u al-sakt*, which was used to preserve a final short vowel from being elided in pause, especially in the recitation of poetry.²³⁹ A number of instances of it occur in the Qur'ānic reading tradition of Ibn Kathīr.²⁴⁰

I.2.12. FURTHER CASES OF SECOND ACCENTS IN A WORD

ON CLOSED SYLLABLES WITH SHORT VOWELS

In some cases, a word contains an accent sign on a closed syllable before the accent marking the main stress.

²³⁸ See, for example, Vayra (1994) for this function of glottalization in Italian and Khan (2016b vol. 1, 144-45) for Neo-Aramaic.

²³⁹ Birkeland (1940, 31–45), Roman (1983, 494–501).

²⁴⁰ Nöldeke et al. (1938, vol. 3, 199), Ibn Khālawayh (ed. Bergsträsser, 1934, 109).

We have seen (§I.2.5.8.5.) that *merkha* often occurs in the three books on closed syllables containing short vowels with the function of a phonetic *ga'ya* in order to lengthen the vowel and cause the following *shewa* to be read as vocalic, e.g.

L: תִּבְחַר ‘you choose’ (A: תִּבְחַר, Psa. 65.5)

L: תָּלַעַג ‘it mocks’ (A: תָּלַעַג, Prov. 30.17)

Under certain conditions (Yeivin 1980, 185) a *zaqef* accent is preceded in the same word by a *metiga* accent on a closed syllable with a short vowel that is separated from the main *zaqef* accent by another syllable, e.g.

L: וְבָבֹזֶה ‘and on the plunder’ (Esther 9.10)

L: וּמְקֻצְבָּם ‘at the end of them’ (Dan. 1.5)

The Karaite transcriptions do not represent the vowel of the syllable with *metiga* with an Arabic *mater lectionis*, e.g.

וַيֵּقֶע صُور (BL Or 2548 fol. 128r, 5 | L [BHS]: יָבֹקָע־צֹור Isa.

48.21 ‘and he cleaved the rock’)

وَمَقْصَاثَام (BL Or 2556, fol. 2v, 5 | L [BHS]: مَكْعَظَةٌ مَّا Dan. 1.5

‘at the end of them’)

لِزْرَعْخَا (BL Or 2539 MS A, fol. 70v, 4 | L [BHS]: لِزْرَعْخَا Gen.

24.7 ‘unto your seed’)

The same applies to accents on short vowels in closed syllables before the main stress in the three books, such as the first accent of the composite *revia^c mugrash*. Transcriptions such as the

following show that the vowel was not lengthened by the first accent:

מִסְלָחַת (BL Or 2551, fol. 31r, 3 | L [BHS]: מִשְׁלָחָת Psa.

78.49 ‘delegation’)

This suggests that *metiga* and the first element of composite accents in the three books did not represent a secondary stress beat, but rather some musical phenomenon that did not result in the lengthening of the vowel.

I.3. DAGESH AND RAFE

I.3.1. DAGESH

I.3.1.1. Preliminary Remarks

Dagesh is a dot that is marked within a letter. It is in origin an Aramaic active participle meaning ‘stabbing’ from the Aramaic root *d-g-š* ‘to stab’. This referred, it seems, to the ‘stabbing’ of the letter by the pen when the sign was marked.

The *dagesh* sign was used mainly in two contexts. These are (i) on a consonant that was geminated (traditionally referred to in modern grammars as *dagesh forte*) and (ii) on the consonants בגדכפת when they were realized as plosives (traditionally referred to as *dagesh lene*).¹ In both cases the letter with *dagesh* was pronounced with greater pressure than its counterpart without *dagesh*.

The majority of consonants in the Tiberian pronunciation tradition could be marked with a *dagesh*.

¹ Our terms *dagesh forte* and *dagesh lene* go back to David Qimḥi (1160–1235), who uses the Hebrew terms דגש חזק (*dagesh forte*) and דגש קל (*dagesh lene*) in his *Mikhlol*. The terms דגש חזק and דגש קל are used also by Yequti'el ha-Naqadan, who was active in medieval Ashkenaz in the second half of the thirteenth century. He does not mention David Qimḥi's *Mikhlol*, which was written earlier, but it is possible that Yequti'el borrowed this terminology from Qimḥi (Yarqoni 1985, 105–13).

Dagesh is not marked, however, on the laryngeals and pharyngeals (חָאַת) in the Standard Tiberian tradition, except in a few isolated cases to ensure correct reading (e.g. the *dagesh* in 'alef in four words, see §I.1.1.). In principle, therefore, these consonants are not geminated.

The letter *resh*, like the laryngeal and pharyngeal consonants, is generally not geminated by *dagesh*. Occasionally, however, the *resh* does have *dagesh*, e.g.

- L: לֹא־כְּרֻת שִׁירֵךְ 'your navel string was not cut' (Ezek. 16.4)
- L: מִרְתָּה נְפָשָׁו 'the bitterness of its soul' (Prov. 14.10)
- L: שְׁרָאַנְשֵׁי 'because my head' (Cant. 5.2)
- L: מִאֲוָמָה רַע 'anything bad' (Jer. 39.12)
- L: הַרְעַמָּת 'to irritate her' (1 Sam. 1.6)

When it is marked in cases such as these, it should be identified as *dagesh forte*, indicating the gemination of the consonant. In the attested examples, the *resh* with *dagesh* in the Tiberian Masoretic tradition would have had its primary realization as an uvular trill according to the rules that have come down to us from the medieval sources (§I.I.1.20.). This does not appear, however, to have been a relevant conditioning factor for the *dagesh*. Some Middle Eastern Jewish communities pronounce the *resh* as geminate in their biblical reading where the *dagesh* was marked, but in all cases they pronounce the *resh* as an apical-alveolar.²

In medieval manuscripts of Rabbinic Hebrew that belong to the eastern tradition of transmission, *dagesh* is marked on *resh*

² Morag (1960, 207–8).

more frequently than it is in the Tiberian biblical text.³ The tendency to mark *dagesh* is greater in some eastern manuscripts than in others. It is particularly common in the Parma B manuscript of the Mishnah. The *dagesh* is marked on *resh* after the relative particle ψ še and on the medial *resh* of a number of verbal and nominal morphological patterns with a geminated middle radical, e.g. שִׁירָב ‘he mixed’ (*pi’el*) and מְשֻׁרְבָּת ‘mixed’ (*pu’al*), ‘weavers’.⁴ The *resh* is pronounced geminated in a similar range of contexts in Middle Eastern reading traditions of Rabbinic Hebrew that have survived into modern times, e.g. Aleppo [ʃerra?ta] (הַשְׁרָאֵתָ) ‘who has seen (fs)’ (*Berakhot* 3.6), [ʃər're:b] (עֲרָבָ) ‘he created an ‘eruv’ (*Eruvin* 2.6), [leharra'gin] ‘to murderers’ (לְהַרְגִּין) (*Nedarim* 3.4).⁵ The gemination is more widespread in some traditions than in others. Also in verbal and nominal patterns with a geminated middle radical it tends to be restricted to certain verbal roots and lexical items, as is the case in the medieval manuscripts. Sometimes there are variations within the same root that are exploited to express a semantic distinction. In Jerba, for example, the *resh* in the root שְׁרָב is geminated in the *pi’el* when it has the meaning of mixing one thing with another, but it is not geminated when it has the sense of creating an ‘eruv. Morag believes that the lack of consistency in the gemination of the *resh* across the traditions of Rabbinic reading and within

³ Bar-Asher (1987).

⁴ Bar-Asher (1987, 13–14).

⁵ Katz (1981, 32–36).

individual traditions may have been the result of varying degrees of influence from biblical reading traditions.⁶

The *dagesh* in the *resh* in the Tiberian biblical tradition in a case such as שֶׁרְאַלְיָ ‘because my head’ (Cant. 5.2) after the particle -ψ, which corresponds to one of the contexts where it occurs in the eastern Rabbinic traditions, suggests that the tradition of gemination of this letter is of considerable time depth. It is likely to have had its origin at a period when Hebrew was a living language, assuming that Rabbinic Hebrew originated in the vernacular of the Tannaitic period. Its occurrence here may reflect the influence of spoken Hebrew at the time of the formation of the Tiberian reading tradition, the particle -ψ itself being a feature of Rabbinic Hebrew.

I.3.1.2. Morphological Gemination

A *dagesh* may reflect gemination that is a feature of the morphological pattern of a word. This typically occurs in the second radical of the root, e.g. בָּקַשׁ ‘he sought’, גִּנְבֵּ ‘thief’, חֲנֹן ‘gracious’. A possible case of morphological gemination of *resh* in the Tiberian biblical tradition is לֹא-כָּרַת שִׁירָךְ ‘your navel string was not cut’ (Ezek. 16.4).

Morphological gemination also includes gemination that is inherent to the root. When a root has identical consonants as its two final radicals, these appear as a geminated consonant with *dagesh* when adjacent to each other before an affix. This

⁶ Morag (1960, 208–16).

gemination does not occur in word final-position when the stem does not have an affix, e.g.

עִמִּים ‘peoples’, **עַמּוֹ** ‘his people’; cf. sing. **עַם** < **amm*

גָּנִים ‘gardens’, **גַּנּוֹ** ‘his garden’; cf. sing. **גַּן** < **gann*

I.3.1.3. *Dagesh* to Distinguish Meaning

In various cases, gemination of a consonant reflected by a *dagesh* sign is used in the Tiberian tradition as a strategy to distinguish homophones (Yeivin 1980, 49, 294).

This may be contextually dependent. When, for example, the negator **לֹא** is juxtaposed with the homophonous prepositional phrase **לְ** a *dagesh* is added to the negator to distinguish the two, e.g.

L: **לֹא לוֹ יִהְיֶה הַרְעֵעַ** [llo: 'lo:] ‘The offspring would not be his’
(Gen. 38.9)

L: **לֹא לוֹ עַל־רִיב לֹא־לוֹ** [llo:-'lo:] ‘in an argument that is not his’ (Prov. 26.17)

Gemination to distinguish homophones, however, is generally a permanent feature of the morphological pattern. It can be regarded, therefore, as a type of morphological gemination. Examples of this include cases such as **אָבִיר** ‘powerful’ referring to God, used in phrases such as **אָבִיר יְעָקֹב** ‘the Mighty One of Jacob’ (Gen. 49.24, Isa. 49.26, Isa. 60.16, Psa. 132.2, 5) vs. **אָבִיר** ‘powerful’, used to refer to humans, **עֲצָבִים** ‘toils’ vs. **עֲצָבִים** ‘idols’, **יִגַּת** ‘he gives rest’ vs. **יִתְלִין** ‘he places’, **תִּלְנִית** ‘you spend the night’ vs. **תִּלְנִינוּ** ‘you murmur against’, and the historical gemination

separating the pairs **יְחִיל** ‘he begins’ (Jud. 10.18) vs. **יְחִיל** ‘he profanes’ (Num. 30.3).⁷ The gemination in these pairs of forms most likely originates in existing variant morphological patterns that have been exploited to avoid homophony.⁸

The gemination marked by *dagesh* in the interjection word **אֲזֹה** (also written **אֲזָה**) may have been a device to distinguish it from **אֲזֶה** ‘to where?’.⁹

The use of *dagesh* to distinguish the meaning of homophones or polysemous words is more frequently encountered in the Babylonian tradition of Biblical Hebrew (Yeivin 1985, 355–63). In Babylonian vocalization, a *dagesh* (known as *digsha* in the Babylonian tradition) is represented by a superscribed minute *gimel* and *rafe* (known as *qipyā*) by a superscribed minute *qof*.

In many cases in the Babylonian tradition a *dagesh* is added to distinguish between the use of a word that has an association with God and the use of the same word that has an association with humans (often with negative connotations) or foreign gods. This has been seen already in the Tiberian tradition in pairs such as **אֱבֵיר** vs. **עַצְבִּים** and **עַצְבִּים** vs. **אֱבֵיר**. As in the Tiberian tradition, the *dagesh* is used in the Babylonian tradition in the member of the pair associated with humans or foreign gods. The word

⁷ Yeivin (1985, 361–63).

⁸ A few cases of a *dagesh* that appear in the BHS edition and were identified by Knauf (1979) as serving to distinguish meaning have recently been shown by Golinets (2013, 247–52) to be no more than specks on the parchment of the manuscript.

⁹ Yeivin (1985, 1119).

אֱלֹהִים, for example, is marked with *dagesh* when it refers to foreign gods (Yeivin 1985, 357, 909–10), e.g.¹⁰

אֱלֹהִים אֶחָד (OB | L [BHS]: אֱלֹהִים אֶחָדים) Deut 11.16 ‘other gods’

אֱלֹהִים מִצְרַיִם (OB | L [BHS]: אֱלֹהִים מִצְרַיִם) Exod. 12.12 ‘the gods of Egypt’)

The *dagesh* is used also in the cognate word in Biblical Aramaic when it refers to foreign gods, e.g.

לְאֱלֹהִי דְּהָבָא (MB | L [BHS]: לְאֱלֹהִי דְּהָבָא) Dan 5.4 ‘the gods of gold’)

הַכֹּנִים is marked with a *dagesh* when it refers to ‘priests of foreign gods’ (Yeivin 1985, 358), e.g.

הַכֹּנִים (MB | L [BHS]: הַכֹּנִים) Zeph 1.4 ‘the priests’)

וְתַעֲשׂُו לְכֶם כְּהָנִים בְּעֵמִי הָאָרֶץ (MB | L [BHS]: כְּהָנִים) 2 Chron. 13.9 ‘and you will make for yourselves priests like the peoples of the lands’)

A *dagesh* is used elsewhere in manuscripts with Babylonian vocalization to mark other types of semantic distinctions of homophones. It is frequently marked on the prepositional phrase לוֹ, for example, to distinguish it from the homophone לְאָ (Yeivin 1985, 1132–33), e.g.

יְשַׁלֵּם לוֹ (OB | L [BHS]: יְשַׁלֵּם לוֹ) Job 21.31 ‘who will repay him’)

¹⁰ Data supplied by Shai Heijmans. OB = Old Babylonian, MB = Middle Babylonian.

לֹא־זָבֵל (OB | L [BHS]: Job 33.10 ‘as an enemy for him’)

This includes cases where the *qere* is לֹ but the *ketiv* is זָ, e.g.

וְלֹא־שָׁם (OB | *ketiv* וְלֹא־שָׁם, *qere* וְלֹא־שָׁם 1 Chron. 11.20 ‘and he has a name’)

Other cases include, for example, a *dagesh* on the word נָ in Exod. 12.9, where it denotes ‘raw’, to distinguish it from נָ expressing a request (Yeivin 1985, 357) and a *dagesh* on the *resh* of עָרִיךְ ‘your enemy’ in 1 Sam. 28.16 presumably to distinguish it from the plural of עָרִים ‘towns’ (Yeivin 1985, 354):

אַל־תִּאכְלֶנּוּ נָ (OB | L [BHS]: מִמְנָנוּ אַל־תִּאכְלֶנּוּ Exod. 12.9 ‘do not eat any of it raw’)

עָרִיךְ (OB | L [BHS]: עָרִיךְ 1 Sam. 28.16 ‘your enemy’)

The examples of *dagesh* functioning to distinguish meaning in the Babylonian tradition cited above are most easily interpreted as innovative additions to existing forms rather than morphological variants. It should be noted that in some cases the *dagesh* is marked after a long vowel, e.g. לְמֻלָּעַ, תְּמֻלָּעַ. The question arises as to whether these *dagesh* signs reflect gemination or are simply diacritical signs. Yeivin (1985, 355–63) believes they indeed have the function of *dagesh forte*. There is, moreover, objective evidence of gemination of *dagesh* to distinguish meaning in the Tiberian tradition in forms with a long vowel such as קְרָאָה by the marking Arabic *shadda* in the Karaite transcriptions, e.g.

אָתָּה (BL Or 2556, fol. 40r, 9 | L [BHS]: אָתָּה Neh. 1.5. ‘Oh!’)¹¹

There is also evidence of morphophonemic restructuring by means of innovative gemination in a variety of other reading traditions, including those that have come down to modern times in oral form.

The function of gemination to distinguish meanings of homophones is identifiable, for example, in the reading traditions of Rabbinic Hebrew that are reflected in the early vocalized manuscripts of the Mishnah. Kutscher (1969, 56, 76) drew attention to the following pair of words in the Kaufmann manuscript:

חַתִּיבָה ‘cutting’ vs. חַתִּיבָה ‘piece’

The use of the pattern with *dagesh* to distinguish the concrete entity that is the result of the cutting from the verbal noun of the same root is likely to have developed by analogy with other nouns with the morphological pattern *CCiCCa* that express concrete entities in Rabbinic Hebrew (Bar-Asher 2015, 1342).

Various cases of gemination to distinguish meaning have been identified in the living oral tradition of Rabbinic Hebrew of the Yemenite Jews and the Hebrew component in their speech by Gluska (1995). These include distinctions between verbal forms and nouns, in which the noun has the gemination, e.g.

¹¹ In this manuscript initial *'alef* + long *qameṣ*, i.e. [?ɔ:], is represented by a single Arabic *'alif*. In Biblical Aramaic a long vowel is more widely tolerated in an unstressed syllable closed by a geminated consonant, e.g. מְלַעַ ‘they enter’ (Dan. 4.4 *qere*); cf. also Syriac ‘āllīn (Nöldeke 1869, 457).

‘making cheese’ vs. גְבָנָה ‘cheese (noun)’

‘living (3pl. verbal adjective)’ vs. חַיִים ‘life (noun)’

Morag (1996) draws attention to some uses of gemination to distinguish meaning in the living oral tradition of Aramaic among the Yemenite Jews, e.g.

אֶחָי ‘living’ (referring to God) vs. חַיִיא ‘living’ (referring to humans)

In the Samaritan oral tradition of reading the Pentateuch there are numerous examples of morphophonemic restructuring to distinguish homophones.¹² These include the strategy of distinguishing forms by the addition of gemination to one of the pair, e.g.

‘ā:rəm ‘the cities’ (Tiberian הָעֲרִים) vs. ‘arrəm ‘cities’ (Tiberian עָרִים)¹³

wāmmå ‘and the cubit’ (Tiberian וְאַמָה) vs. wåmmå ‘and a cubit’ (Tiberian וְאַמָה)¹⁴

ādāni ‘Lord’ (divine) vs. ādanni ‘master’ (human)¹⁵

ā:sidå ‘the stork’ (animal) (Tiberian הַקְּסִידָה Lev. 11.19) vs. assidåk ‘your pious one’ (human) (Tiberian חַסִידָךְ Deut. 33.8)¹⁶

¹² See in particular Florentin (1996) for examples of this phenomenon.

¹³ Ben-Hayyim (2000, 92).

¹⁴ Ben-Hayyim (2000, 92).

¹⁵ Ben-Hayyim (1957a-77 vol. 4, 8-9, vol. 5, 194, 2000, 260).

¹⁶ Florentin (1996, 231).

yamən ‘Yamin’ (proper name) (Tiberian יָמִן Gen. 46.10) vs.
yammən ‘right hand’ (Tiberian יָמַן)¹⁷

wyābād ‘and he perished (past)’ (Tiberian וַיָּאֶבְדָּ) vs. yābbād
‘he perishes (non-past)’ (Tiberian וַיָּאֶבְדֵּ¹⁸)

I.3.1.4. Gemination Resulting from Assimilation

In some cases, gemination has resulted from the process of a consonant assimilating another consonant with which it is contact. This typically occurs at the boundary between the stem of a word and an affix. It also functions, therefore, as a marker of a morphological boundary, e.g.

לִפְלִי [jip-'p^ho:ol] ‘he falls’ < *yinpol

תְּנָתַתְּ [no:'θa:at^h-t^h] ‘you (fs) gave’ < *natant

מִשְׁמָרָה [miʃ'-ʃ:cm] ‘from there’ < מִשְׁמָרָה

תָּקַחַתְּ [jiq-'qa:ah^h] ‘he takes’ < *yilqah

וְתִּכְבֹּנְתָּ [vaθik^h-k^ho:'neen] ‘and let it be established’ < תִּכְבֹּנְתָּ

¹⁷ Florentin (1996, 234).

¹⁸ Florentin (1996, 218). This particular minimal pair is not attested in the Samaritan Pentateuch, but it can be inferred from the contrasting patterns used for the attested forms of the past and non-past, e.g. wyābādu וַיָּאֶבְדָּ ‘and they perished’ (Num. 16.33) vs. tābbād תָּאֶבְדָּ ‘it becomes lost’ (Deut. 22.3).

I.3.1.5. Gemination to Preserve High Lexical Vowels

In a number of cases a consonant after a high lexical vowel, most commonly /u/, though occasionally /i/, has been geminated to preserve it. High lexical vowels exhibit a higher tendency to be reduced to an epenthetic *shewa* than low vowels:

I.3.1.5.1. After *qibbus*

עַמְקִים, עַמְקָה ‘deep (fs, mpl)’; cf. ms. עַמּוֹק *^c*amuq*

אַדְמִים, אַדְמָה ‘red (fs, mpl)’; cf. ms. אַדּוֹם *^c*aðum*

עַירְמָה (Gen. 3.7) ‘naked’ (mpl); cf. ms. עַירְוָם *^c*ērum*

קָרְדָּמָה (1 Sam. 13.20) ‘his axe’; cf. sing. קָרְדּוֹם *^c*qardum*

This can be identified in various *pu‘al* forms verbs that appear to be in origin passives of the *qal* pattern without morphological gemination (Gesenius, *Hebrew Grammar*, §52e):

אָכְלָה ‘they have been eaten’ (Neh. 2.3) < *^c*ukalū*

לְקַח ‘he was taken’ (Gen. 3.23) < *^c*luqah*

וְשִׁפְךָ ‘and it will be poured’ (Zeph. 1.17) < *^c*šupak*

I.3.1.5.2. After *hireq*

אָסָר ‘bond’ < *^c*isār*

I.3.1.6. Gemination of a Consonant in Place of Vowel Lengthening

In a number of cases, a consonant is geminated after an original short **a*. This is attested predominantly at a morphological

boundary between the stem of a noun or adjective and an inflectional suffix. As a result, the vowel remains short and does not undergo pretonic lengthening, as would have typically been the case if the **a* was in an open pretonic syllable, e.g.

גָּמְלִים ‘camels’; cf. sing. גָּמֵל

קָטָנִים ‘small (mpl)’; cf. ms. קָטָן

מַעֲטִים ‘few’; cf. ms. מַעֲטָה

אֶגְמִים ‘marshes’; cf. sing. אֶגֶם

הַדְסִים ‘myrtles’; cf. sing. הַדֵּס

עַקְרָבִים ‘scorpion’

נְכֹזֶד (Isa. 23.8) ‘honoured of’; cf. ms. נְכֹזֶה

מִשְׁגָּבִי (Psa. 18.3) ‘my stronghold’; cf. sing. מִשְׁגָּב

מִעֻמָּקִי (Isaiah 51.10) ‘the depths of’

בְּפָלָגּוֹת (Jud. 5.15) ‘among the clans’

מִטְעָמִים (Gen. 27.4) ‘tasty foods’

מִחְמָדִים (Cant. 5.16) ‘desirable things’

In the following the **a* vowel undergoes attenuation to a *hireq*:

וְהַמְּרָגִים (2 Sam. 24.22) ‘and the threshing-sledges’; cf. sing. לְמוֹרָגָן (Isa. 41.15)

Historical gemination of this nature can be reconstructed for *het* in various forms where this letter is now preceded by *patah*, e.g.

בְּחוֹזִים (< **bahhūrim*) ‘young men’; cf. sing. בְּחוֹזָר (< **bāhūr*)

מִבְטָחִים (< **mibṭahîm*) ‘confidences’; cf. sing. מִבְטָח (< **mibṭâh*)

אֶחָד (< **ahhîm*) ‘brothers’; cf. sing. אֶחָד (< **āhî*)

I.3.1.7. Gemination Associated with Stress

In a few verbal forms, a final sonorant radical is geminated when preceded by a main stress accent and followed by an inflectional suffix, e.g.

צְלַלּוּ (Jud. 5.7) ‘they ceased’

וַיְתַלֵּל (Job 29.21) ‘and they waited’

רָמָנוּ (Job 29.12) ‘they are lofty’

נָתְנָה (Ezek. 27.19) ‘they gave’

I.3.1.8. Gemination after a Prefix

In some cases, gemination occurs at the boundary between a prefixed particle and the stem of a word, e.g.

בָּמָה ‘in what?’ < **ba* + *mā*

כָּמָה ‘how much?’ < **ka* + *mā*

עַד שְׁקֹמָתְךָ (Jud. 5.7) ‘until you (fs) arose’ < **ša* + stem

שְׁרָאֵלִי ‘because my head’ (Cant. 5.2) < **še* + stem

We can include here מַהֲן ‘why’ < **la* + *ma*. The gemination in this word is also associated with stress on the preceding syllable (see §I.3.1.7.), since it, in principle, does not occur in variant forms in which the stress occurs on the final syllable, e.g.

להַמְּהָ (Exod. 5.22). Gemination, however, still occurs when the word has *maqef* and so is unstressed, e.g. להַתֵּה (Prov. 17.16).

Another possible case of this type of gemination is the *dagesh* that occurs after the prefixed conjunction *vav* in the נִקְרָא וַיַּקְרֹא [vajjiq^to:ol] verbal form. Another motivation for the *dagesh* here, however, is likely to be to distinguish the meaning of this form from the potentially homophonous but semantically distinct form נִקְרֶל (§I.I.3.1.3.).

Gemination is occasionally used as a strategy to mark a morphological boundary between the interrogative particle *he* and what follows, when the following word begins with *shewa*, e.g.

הִכְרִין־אָה הַכְתָּנָת בְּנֵךְ הוּא [hakk^ha'θo:nəθ] ‘acknowledge now whether it is your son's robe’ (Gen. 37.32)

הָרְאִיתָם [harri:i:'θε:em] ‘Have you seen?’ (1 Sam. 10.24)

הַפְצֻחָתָה [hakk^has'a:nəq^t:θə:h] ‘Is it according to its outcry’ (Gen. 18.21)

הַבְּמִחְנָה [habbama:ha'ni:im] ‘is it in camps?’ (Num. 13.19)

When the word following interrogative *he* begins with a guttural, the particle has a full *patah* vowel or, before *qames*, a full *segol*. These were pronounced as long vowels and can be regarded as substitutes for gemination of the initial guttural, e.g.

הָעֵד [ha:'yə:o:əd] ‘is here still’ (Gen. 31.14)

הָלֵךְ [ha:yə'lə:əχ] ‘shall I go’ (Exod. 2.7)

הָאָנוֹכִי [ha:yə'no:k'i:] ‘Is (it the case that) I ...’ (Job 21.4)

I.3.1.9. Gemination at Word Boundaries (*Dehqiq*)

The phenomenon known as *dehqiq* (Aramaic ‘compressed’) has been described in §I.2.8.1.2. This involves the gemination of a word-initial consonant after an unstressed vowel in the preceding word, e.g.

וְעִזָּה בֶּם
‘I shall cause to witness against them’ (Deut. 31.28)

תַּשְׁלֵח-לְךָ
‘you make for yourself’ (Prov. 24.6)

Hidāyat al-Qāri' includes constructions with the interrogative word מה such as the following in the category of *dehqiq*:

מַה-זָּאת
‘what is this?’ (Exod. 13.14)

In all cases in the Tiberian tradition the final vowel of the word before the geminated consonant was pronounced long but with reduced duration. In other traditions of Hebrew, there is evidence that the final vowel was pronounced short (see §I.2.8.1.2. for details). The *dagesh* exhibits properties of the *dagesh* in forms such as בְּמֹה ‘in what?’, in which it marks the boundary between morphemes, and the *dagesh* in forms such as גִּמְלִים ‘camels’, where it substitutes for the lengthening of the preceding vowel. Also in words such as גִּמְלִים ‘camels’, as remarked above, the *dagesh* coincides with a morpheme boundary. The *dagesh* of *dehqiq* can, therefore, be identified as primarily a marker of a boundary between two words that were closely connected prosodically. In the Tiberian tradition, efforts were made to make a clear prosodic division between the words also by maintaining some degree of vowel length in the final vowel or, in the case of

constructions with מֵה־, by introducing length in a fully shortened vowel.

I.3.1.10. The Distribution of the Fricative and Stop Variants of the Letters

בגדיות האותיות
For the distribution of the fricative and stop variants of consonants within words, see §I.1.25.

When a בגדכפת consonant occurs at the beginning of a word and the preceding word ends in a vowel, the general rule is that the consonant is fricative if the accent of the preceding word is conjunctive or if the preceding word is connected by *maqqef*, but is plosive if the accent of the preceding word is disjunctive, e.g.

שְׁלִישָׁה בָנִים [ʃalo: cɔ:nim] ‘three sons’ (Gen. 6.10)

זֶכֶר וּקְבָּה בָרָאָם [mɔ:ɔ:zɔ:wunqə: cɔ:z] ‘male and female he created them’ (Gen. 5.2)

נִמְצָאוּ-בָם [nimsɔ:u:bam] ‘they were found among them’ (Jer. 41.8)

There are several exceptions to this principle. These are mentioned in the Masoretic treatises¹⁹ and include the following.

(i) When a *paseq* occurs after a word with a conjunctive accent, e.g.

עָשׂוּ פְלָה [ʕas:u plah] ‘They have done completely’ (Gen. 18.21)

¹⁹ Cf. *Hidāyat al-Qāri‘i*, long version, edition in volume 2 of this book, §II.L.1.7., short version, edition in volume 2 of this book, §II.S.2.0. A version of these exceptions appears also in the Hebrew Masoretic treatise published by Ginsburg (1885, 36-37).

יְהוָה עַל־עָמָךְ מֵאֶת־בָּנָיךְ 'May the Lord add to his people (a hundred times as many) as them' (1 Chron. 21.3)

- (ii) When the first word ends in a consonantal *vav*, the letter at the beginning of the next word is normally a plosive, as it is after words ending in other consonants, e.g.

בְּגִדְכְּפָתָה בְּתִהְלָה 'enter his courts with praise' (Psa. 100.4)

אֱלֹהִים פִּירָאָתִי 'I cried aloud to him' (Psa. 66.17)

There are, however, two cases where the consonant בְּגִדְכְּפָתָה is fricative after consonantal *vav*:

וְנַטֵּה עַלְתָּה קַוְתָּה 'He will stretch the line of confusion over it' (Isa. 34.11)

וְקוֹל הַמִּזְרָח שָׁלוּ בָּהּ 'The sound of a carefree multitude was with her' (Ezek. 23.42)

- (iii) When the first word ends in a consonantal consonant *yod*, the letter at the beginning of the next word is normally a plosive, e.g.

אָוְלִי תִּעֲרֹצִי 'perhaps you may inspire terror' (Isa. 47.12)

בַּי מִינְגָּדָל 'for what great nation' (Deut. 4.7)

לְגֹיִינְגָּדָל וּמְעֻצָּם 'into a great and mighty nation' (Num. 14.12)

There is one exception to this:

אָדָן בְּם 'the Lord in them' (Psa. 68.18)

- (iv) If two *bets* or *kafs* follow one another and under the first of them there is a vocalic *shewa*, then the first of the pair is plosive even when the preceding word ends in a vowel and has a conjunctive accent, e.g.

וְיָחִי בְבֹאָה ‘and when she came’ (Josh. 15.18)

וַתִּתְפְּשֶׁה בְבִגְדוֹ ‘and she caught him by his garment’ (Gen. 39.12)

הֲלֹא כְּכַרְמֵלִישׁ ‘Is it not like Carchemish?’ (Isa. 10.9)

If a vowel occurs under the first of the two consonants rather than *shewa*, the first remains fricative according to the usual rule, e.g.

וְהִיא אֲשֶׁר בְּבִתּוֹלִיהָ ‘And he (shall take) a wife in her virginity’
(Lev. 21.13)

וְאֱנֶשֶׁי בָּבֶל ‘men of Babylon’ (2 Kings 17.30)

We can generalize and say two fricative *bets* or *kafs* are avoided in syllable onsets in the same foot (feet indicated below by round brackets, extrametrical syllables are in angled brackets):

בְּבִגְדוֹ [(ba.vi.غ.)('do:)]

בָּבֶל [(כְּ)('ve..el)]

בְּבִתּוֹלִיהָ [(viv.)(θu:.)('le:.)<hc:>]

A further factor is that the initial *bet* and *kaf* in constructions such as and are prepositional affixes. Other consonants that are not prepositions under the same conditions remain fricative, e.g.

וּבְנֵי דְּדָן ‘and the sons of Dedan’ (Gen. 25.3)

לֹא-תִתְעַבֵּךְ ‘you shall not abhor’ (Deut. 23.8)

The plosive pronunciation of the *bet* and *kaf*, therefore, is made further optimal by the fact that it clearly demarcates a morpheme boundary. This factor can be identified in a variety of other features of the reading tradition (§I.3.1.8.).

(v) Likewise, when the preposition *bet* has *shewa* and is followed by *pe*, the *bet* is plosive even when preceded by a word with a conjunctive accent ending in vowel, e.g.

וְאֶכְבֹּדָה בְּפִרְעָה
14.4)

‘and I will get glory over Pharaoh’ (Exod. 14.4)

וְד֖בָּרִי אֲשֶׁר-שִׁמְתִּי בְּפִיךְ
59.21)

‘and my words which I have put in your mouth’ (Isa. 59.21)

When the *bet* has a vowel, it is fricative in these conditions, e.g.

אַל-יְרֹא בְּפֶלַגּוֹת
Job 20.17)

‘He will not look upon the rivers’ (Job 20.17)

A *pe* is closely related to *bet* in its articulation. A preposition *bet* or *kaf* that is followed by a fricative בְּגַדְכָּתָה consonant that is not of similar articulation is not made plosive under the conditions in question, e.g.

וַיְנַצֵּחַ בְּגֹן-עֵדָן
2.15)

‘and he put him in the garden of Eden’ (Gen. 2.15)

הִלְאָא כִּנְעַשְׂתָּה
17.10)

‘surely when [the east wind] strikes it’ (Ezek. 17.10)

(vi) Seven cases do not fit into the previous categories, over which there was no disagreement by the Masoretes. Four of these are in the Song of the Sea (Exod. 15):

וְאָזֶן אֱמֹרָה
‘he has triumphed gloriously’ (Exod. 15.1, 21)

מַיְ כָּמֹכָה ‘Who is like you?’ (Exod. 15.11)

יְדֻמּוּ כָּאֲבָנָה ‘they are as still as a stone’ (Exod. 15.16)

וְשִׁמְתִּי בְּקֶדֶם ‘and I shall make (your pinnacles) of agate’ (Isa. 54.12)

וְגַלְאַיְתִּי בְּלִכְלָל ‘and I am weary of holding it in’ (Jer. 20.9)

וְחִכְמָה בְּחִכְמַת־אֱלֹהִין ‘and wisdom like wisdom of the gods’ (Aramaic, Dan. 5.11)

Some of these appear to have been motivated by an effort to avoid a series of identical fricative consonants in contiguous syllables or words.²⁰

Cases over which there is said to be disagreement between Ben Asher and Ben Naftali include the following. L in some cases follows Ben Asher and in others Ben Naftali:

Ben Asher (L): עַם־זֶה גָּאֵלָת ‘the people whom you have redeemed’ (Exod. 15.13); Ben Naftali: גָּאֵלָת

Ben Asher: בְּחִדְשׁ הַשְׁמִינִי בְּחִמְשָׁה־עִשְׂרֵל ‘in the eighth month on the fifteenth (day)’ (1 Kings 12.32); Ben Naftali (L): בְּחִמְשָׁה

Ben Asher (L): אֲדָרְגָּרִיאָ גְּדִבְרִיאָ דְּתִבְרִיאָ ‘the counsellors, the treasurers, the justices’ (Aramaic, Dan. 3.2, 3); Ben Naftali: גְּדִבְרִיאָ.

²⁰ According to the Hebrew Masoretic treatise published by Ginsburg (1885, 37) the *kaf* in בְּחִכְמָה (Dan. 5.11) was made a plosive since *het* and fricative *kaf* were difficult to combine due to the fact that they were similar in articulation (קָרוּבִים בָּמוֹצָא הַבְּטוּי).

Ben Asher: סִבְכָּא פַּסְנְתֶּרְיוֹן ‘trigon, harp’ (Aramaic, Dan. 3.5);
 Ben Naftali (L): פַּסְנְתֶּרְיוֹן.

On balance, Ben Naftali prefers clearer separation by reading *dagesh* in the majority of these cases.

(vii) Ben Naftali reads the preposition *kaf* as plosive after *וַיְהִי* with a conjunctive accent in seven cases where Ben Asher reads the *kaf* as fricative according to the usual rule.²¹ L follows Ben Asher in this respect:

Ben Asher (L)	Ben Naftali
וַיְהִי בָּשָׁמָע אֲדֹנֵי	וַיְהִי בָּשָׁמָע אֲדֹנֵי
‘when his master heard’ (Gen. 39.19)	
וַיְהִי בָּשָׁמָעוֹ	וַיְהִי בָּשָׁמָעוֹ
‘and when he heard’ (Gen. 39.15)	
וַיְהִי קָרְאוֹת	וַיְהִי קָרְאוֹת
‘and when (the king) saw’ (Esther 5.2)	
וַיְהִי קָרְאוֹתוֹ	וַיְהִי קָרְאוֹתוֹ
‘and when he saw’ (Jud. 11.35)	
וַיְהִי כְּהֻזְצִיאָם	וַיְהִי כְּהֻזְצִיאָם
‘and when they brought out’ (Gen. 18.17)	
וַיְהִי בָּמְלָכֹו	וַיְהִי בָּמְלָכֹו
‘when he became king’ (1 Kings 15.29)	
וַיְהִי בָּאֵשֶׂר-תָּמוֹ	וַיְהִי בָּאֵשֶׂר-תָּמוֹ
‘and when they had perished’ (Deut. 2.16)	

²¹ *Kitāb al-Khilaf* (ed. Lipschütz, 1965, 18-19).

I.3.1.11. Orthoepic Uses of *Dagesh*

In a number of circumstances, gemination marked by *dagesh* has been introduced into the reading for orthoepic purposes to ensure that letters are clearly articulated and not slurred over. The cases in question fall into various categories.

I.3.1.11.1. Splitting Weak Consonants by *Shewa*

When two weak consonants are in contact across a syllable boundary, the first is sometimes geminated and marked with *dagesh*. This has the effect of introducing a vowel in the form of vocalic *shewa* between the two consonants, which increases their distinctness and reduces the risk of elision. This is found in particular in syllable contact involving sonorants (לִמְנָר), gutturals and *qof*, e.g.

מִקְרָה-לִילָה [miqqare:-lilah] ‘accident of the night’ (Deut. 23.11)

מִמְרָרִים [mammaro:'ri:im] ‘bitterness’ (Job 9.18)

וַיַּעֲקֹב [wunθaqqa'nu:hu:] ‘and we shall draw him away’ (Jud. 20.32)

חִקְרָת [jiqqa'ha:aθ] ‘obedience of’ (Gen. 49.10)

הַרְעֵמָה [harrifi:mɔ:h] ‘to irritate her’ (1 Sam. 1.6)²²

²² According to Melamed (1948, 1) the purpose of the *dagesh* in *הַרְעֵמָה* (1 Sam. 1.6) is to distinguish this human activity ('to irritate her') from the meaning of the verb in *אֱלֹהֶכְבֹּד הַרְעֵם* 'the God of glory thundered' (Psa. 29.3), which refers to an action of God. This is a possible interpre-

In some cases, this strategy is applied when only one of the consonants in contact belong to this group, and occasionally also elsewhere, e.g.

עֲקָבוֹת [ʔiqqa'vo:oθ] ‘footprints of’ (Psa. 89.52)

מִקְדֵּשׁ [miqqa'ðca:os] ‘sanctuary’ (Exod. 15.17)

מַטְהָרָה [mitt̚'ha:ro:] ‘his lustre’ (Psa. 89.45)

מַצְעִירָה [miss̚'i:ra:] ‘small’ (Dan. 8.9)²³

הַצְפִּינָה [hass̚'afi:'no:] ‘to hide him’ (Exod. 2.3)

As can be seen from the list of examples above, the letter before the geminated consonant is frequently *mem*, especially when the *mem* has a *hireq*. Such forms may have been facilitated by the fact that similar sequences occur when the preposition *ן* assimilates to a word. The same may apply to examples with initial *he* with *patah*, which resemble the prefixed definite article (Ariel 2020, 142).

This orthoepic strategy achieves a similar result as the strategies of lengthening the preceding vowel to induce reading of the *shewa* as vocalic, e.g. סֶלֶעָי [sa:li'ʔi:] ‘my rock’ (2 Sam. 22.2, Psa. 18.3) (§I.2.5.8.5.), and the lengthening of the preceding vowel to

tation, especially since in such pairs of homophones the *dagesh* is typically put in forms relating to a human (see §I.3.1.3.). Ariel (2020), however, has argued that the motivation is phonetic rather than semantic, and I follow his view here.

²³ For the case for interpreting the *dagesh* in the forms מַטְהָרָה and מַצְעִירָה as orthoepic see Ariel (2020).

introduce metrical epenthesis between the two consonants, e.g. יְשַׁעְיָהוּ [ja:ʃa·yə'jɔ:huh:] ‘Isaiah’ (Isa. 1.1) (§I.2.10.).

A variant type of orthoepic strategy is to insert a vowel after the first of the two consonants in contact and geminate the second consonant, i.e. CC > CVCC rather than CC > CCVC. This is found in:

רָדֹדְךָם [ji:raddo:of] ‘let him pursue’ (Psa. 7.6)

This may have been applied to avoid geminating *resh*. Parallels to such restructuring of the syllable structure of words are found in the Samaritan reading tradition, e.g.

תְּשִׁבְבָּס < **tašbes* (Ben Hayyim 2000, 59 | L [BHS]: תְּשִׁבְבָּס Exod. 28.4 ‘checkered work’)

I.3.1.11.2. *Dagesh* to Strengthen Syllable Onsets

In the standard Tiberian manuscript codices there are a few cases of the marking of the *dagesh* sign on letters other than בְּגִדְבְּתָה on the second of two consonants in contact at the boundary of syllables for the purpose of ensuring that the consonants and syllables are kept distinct. This ensured a clear division of syllables and words. In L, for example, a *dagesh* is sometimes placed on an initial *lamed* of the second word of a phrase connected with *maqqef* when the first word ends in *nun*, e.g. וְלֹא-לֹא ‘and he gave him’ (Gen. 24.36) (Yeivin 1980, 294–95). This can be regarded as a measure to separate the two words clearly and prevent the coalescence and slurring of weak sonorant consonants. The *dagesh* would mark the articulation of the *lamed* with increased muscular pressure to ensure it maintains its correct articulation.

According to *Kitāb al-Khilaf*, Ben Naftali placed a *dagesh* in the first *nun* of the name נָנוֹן in the combination בֶּן־נָנוֹן ‘the son of Nun’ (ed. Lipschütz 1965, 47). This was a measure to prevent the coalescence of two identical weak sonorant letters across a word-boundary.²⁴ An alternative strategy to separate the two letters was to place a *paseq* between the words, e.g.

L: הַמְּגֹדֵל | לִמְעָד ‘to make exceedingly great’ (1 Chron. 22.5)

L: וּבְרִיאַל | לְרִב ‘iron in abundance’ (1 Chron. 22.3).

According to *Kitāb al-Khilaf*, Ben Naftali marked a *dagesh* in the *qof* of the verb עֲקָב ‘he supplants’ (Jer. 9.3, L: עֲקָב) (ed. Lipschütz 1965, 47) and this is found in C and in a number of other Tiberian Masoretic manuscripts (Yeivin 1968, 51). This ensured a clear syllable division and also, by implication, indicated that the ‘ayin had a silent *shewa*. This, moreover, alerted the reader to the fact that the syllable division was different from that of the more frequent form עַקְבָּ ‘Jacob’. *Qof* falls into the category of weak letters, which is demonstrated, for example, by the fact that it often loses *dagesh* when in a metrically weak syllable with *shewa* (§I.2.5.2.). The practice of the Masorete Ben Naftali to use *dagesh* 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 (A. Ben-David 1957b).

²⁴ For the need to avoid coalescence in such contexts see the discussion in *Hidāyat al-Qāri‘*, long version, edition in vol. 2 of this book, §II.L.1.4.10.

The phenomenon of marking *dagesh* 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 (Vennemann 1988, 40). According to this principle, strength is equated with the degree of sonority or the quality of being vowel-like. This optimality principle can influence how a sequence of phonological segments is syllabified.²⁵ 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 of fortition (Bybee 2015, 45), 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 בְּקָרֶב 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 to mark *dagesh* in a weak letter after a guttural with silent shewa (בְּקָרֶב) and in the second word in phrases such as בְּנֵנָן to mark a clear division of syllables occurs in a number of later Bible manuscripts, e.g. וַיִּאֲסַר ‘and he harnessed’ (Exod. 14.6), יָזֵר ‘Jazer’ (Num. 32.35), מִזְבֵּחַ ‘to eat bread’ (Gen. 31:54), לְהַמִּזְבֵּחַ ‘to them from sorrow’ (Esther 9.22) (Ginsburg 1897, 114–36; Luzzatto 2005, 169–

²⁵ Alvestad and Edzard (2009) have demonstrated how this principle can explain the distribution of the insertion of *hatef* vowels in verbs with initial *het* in Tiberian Hebrew.

72). 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.

There is a reference in some early Masoretic sources to the practice of marking *dagesh* in the *yod* of the word סָמֵךְ וּמְלֵאָה ‘and male donkeys’ (Gen. 32.16, L: סָמֵךְ וּמְלֵאָה), which is attributed to either Ben Asher or Moshe Mohe (Baer and Strack 1879, xxxviii–xxxix). This would be a use of *dagesh* on a weak letter after a vowelless guttural analogous to יְעַקֹּב.

I.3.1.11.3. Extended *Dagesh Forte*

There is evidence that the practice of strengthening syllable onsets for orthoepic purposes by geminating a syllable-initial consonant was more widespread than is apparent from the vocalized Tiberian manuscripts. The process in question involved the reading of the *dagesh lene* in the stop variants of the letters בְּגִדְכְּפָתְּ as *dagesh forte*, i.e. as geminate.

This is seen by examining in particular the Karaite transcriptions and passages in *Hidāyat al-Qāri*?

In several of the extant manuscripts of the Karaite transcriptions, the scribes marked the Arabic *shadda* sign where the Tiberian reading tradition had *dagesh*. In some manuscripts, the *shadda* is written only where the *dagesh* is *dagesh forte* according to the conventional interpretation of the distribution of *dagesh forte* and *dagesh lene*. In some manuscripts, however, the *shadda* sign is written both on letters with *dagesh forte* and on letters with what is conventionally interpreted as being *dagesh lene*. Some examples are given below.

Manuscripts that mark *shadda* corresponding to only *dagesh forte*

BL Or 2539, fols. 56-114

Dagesh forte

هَدَّابَار (BL Or 2539 MS A, fol. 63r, 8 | L [BHS]: הַדְבָּר Gen.

21.11 ‘the word’)

هَمَّايم (BL Or 2539 MS A, fol. 64r, 1 | L [BHS]: הַמְּיִם Gen.

21.15 ‘the water’)

Dagesh lene

دَبَارِي (BL Or 2539 MS A, fol. 84r, 1 | L [BHS]: דְּבָרִי Deut.

4.10 ‘my words’)

هَمْزِيْح (BL Or 2539 MS A, fol. 67v, 1 | L [BHS]: הַמְזִיחַ Gen.

22.9 ‘the altar’)

BL Or 2544 + Or 2545 + Or 2546

Dagesh forte

وَائِكْشُوم (BL Or 2546, fol. 3r, 7 | L [BHS]: וַיְקַשׁוּם Num. 14.45

‘and they beat them into pieces’)

يَجَّايل (BL Or 2545, fol. 207v, 5 | L [BHS]: יְגַל Lev. 27.33

‘it will be redeemed’)

הַמְּרָאָה (BL Or 2544 fol. 74v, 2 | L [BHS]: הַמְּרָאָה Exod. 3.3
 ‘the sight’)

Dagesh lene

בְּאֵישׁ (BL Or 2544 fol. 74r, 10 | L [BHS]: בְּאֵישׁ Exod. 3.2
 ‘with the fire’)

פָּנָיו (BL Or 2544 fol. 75r, 6 | L [BHS]: פָּנָיו Exod. 3.6 ‘his
 face’)

מִמְשֶׁחָה (BL Or 2546, fol. 132r, 11 | L [BHS]: מִמְשֶׁחָה
 Num. 36.1 ‘from the family of’)

Manuscripts that mark *shadda* corresponding to both *dagesh forte*
 and *dagesh lene*

BL Or 2540

Dagesh forte

נִשְׁחַקְמָה (BL Or 2540, fol. 4r, 4 | L [BHS]: נִשְׁחַקְמָה Exod.
 1.10 ‘let us deal wisely’)

וְאִתְصַפֵּנָה (BL Or 2540, fol. 5v, 4 | L [BHS]: וְאִתְצַפֵּנָה Exod.
 2.2 ‘and she hid him’)

Dagesh lene

يَرِبَّ (BL Or 2540, fol. 4v, 1 | L [BHS]: יָרַבְהָ Exod. 1.12 ‘He increases’)

جَادَ (BL Or 2540, fol. 3v, 4 | L [BHS]: גָּדָה Exod. 1.4 ‘Gad’)

دَانَ (BL Or 2540, fol. 3v, 3 | L [BHS]: דָּן Exod. 1.4 ‘Dan’)

مِهْرَتَانَ (BL Or 2540, fol. 7r, 5 | L [BHS]: מִהְרָתָן Exod. 2.18 ‘you hurried’)

BL Or 2548 fols. 1-185

Dagesh forte

مَدُوعٌ (BL Or 2548 fol. 3r, 10 | L [BHS]: מַזְעֵעַ Isa. 5.4 ‘why?’)

هَمَالَخ (BL Or 2548 fol. 13r, 9 | L [BHS]: הַמְלָךְ Isa. 37.5 ‘the king’)

Dagesh lene

صَمْدَيْ خَارِمَ (BL Or 2548 fol. 6r, 10 | L [BHS]: צָמְדִי־חֶרְםָם Isa. 5.10 ‘acres of the vineyard’)

عَذْ دُورَ (BL Or 2548 fol. 10r, 5 | L [BHS]: עַד־צֹור Isa. 13.20 ‘until generation’)

شَامَاعْتَا (BL Or 2548 fol. 14r, 10 | L [BHS]: תִּשְׁמַשׁ Isa. 37.6

‘you (ms) heard’)

ישָׁעֵרְיָהוּ כְּה (BL Or 2548 fol. 14r, 9 | L [BHS]: יִשְׁעֵרְיָהוּ Isa.

37.6 ‘Isaiah, thus’)

In Arabic orthography, the *shadda* sign represents the application of greater muscular pressure to a consonant in order to lengthen it. In medieval manuals concerning the correct reading (*tajwīd*) of the Arabic Qur’ān, descriptions are given of various degrees of lengthening expressed by *shadda*, but it was never used like *dagesh lene* to mark a non-geminated plosive consonant. The Karaite transcriptions that mark the *shadda* sign are essentially phonetic representations of the Hebrew reading with an Arabic orthography and so one can assume that when the *shadda* is marked, it was intended to represent lengthening of the consonant. What the data above reflect, therefore, are two varieties of reading. In one variety the *dagesh* is given its expected pronunciation, with *dagesh forte* strengthened but not *dagesh lene*. In the other variety, however, both *dagesh forte* and *dagesh lene* are strengthened and so are given the same phonetic realization. We may call this latter type of reading the ‘extended *dagesh forte*’ reading. The reading without this extension of *dagesh forte* will be referred to as the ‘*dagesh forte—dagesh lene* reading.’

A passage from *Hidāyat al-Qāri’* also reflects a type of reading that does not conform to the traditional classification of *dagesh* into *dagesh forte* expressing gemination and *dagesh lene*

expressing a non-geminated stop realization of a בגדכפת consonant.

The passage in question concerns the consonant *tav*, which is said to differ from other letters in having three grades of strength. The form of the passage from the long version of this work is as follows:²⁶

Chapter concerning letters that occur in three grades

Take note that just as there are among the letters those that when they are adjacent to another letter, this latter makes them light with *rafe*, 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 *dagesh*. The third is the major *dagesh*. This includes the *tav*.

Take note that the *tav*, unlike the other letters, may occur *rafe*, as in שַׁעֲרָה וְתַחַתּוֹ ‘and rooms of the gate’ (Ezek. 40.10); it may occur with *dagesh*, as in תְּמִימָה הַנְּתַשָּׁת ‘instead of bronze’ (Isa. 60.17), תְּמִימָה זָהָב ‘ornaments of gold’ (Cant. 1.11); and it may occur with major *dagesh*. The latter includes three *tavs*: וַיְשִׁימֵה תַּלְעֹלֶת ‘He made it an eternal heap of ruins’ (Josh. 8.28), וְאֶת-בָּתָיו וְגִנּוּבָיו ‘and its houses and its treasures’ (1 Chron. 28.11), וְבָבְרִיא אֶלְקָטְלָתָהוּן ‘and these three men’ (Dan. 3.23). I do not know anybody who differs (in reading) with regard to these three *tavs*. As for the form בָּתִים, there were differences (of reading) with regard to it. Take note that the Tiberians said that they have a *resh* that is not read (in the same way) by anybody else. It is likely that the climate of their town caused this.

²⁶ Edition in vol. 2 of this book, §II.L.1.9.2.

It has the same status as the *tav* in the word בָתִים according to the view of Ben Naftali, who gives it a grade in between two grades.

The short version of *Hidāyat al-Qāri'* supplies more details about the differences in the reading of בָתִים:²⁷

Take note that *tav* in three places is strengthened with *dagesh* to a greater degree than (other) cases of *tav* with *dagesh*. These are וַיְשִׁמֵּה תֶל־עֹלֶם שְׁמָמָה 'He made it an eternal heap of ruins' (Josh. 8.28), וְאֶת־בָּבֶן וְגַנְזִיר 'and its houses and its treasuries' (1 Chron. 28.11), וּבְרִיאָ אֶלְךָ תַּלְתָּהוּן 'and these three men' (Dan. 3.23). Note that there is disagreement concerning every *tav* in the form בָתִים, except in וְאֶת־בָּבֶן וְגַנְזִיר (1 Chron. 28.11). Whoever wishes to pronounce it with the normal *dagesh* of *tav*, may do so and whoever wishes to pronounced it with with the heaviness of the *tav* of וְאֶת־בָּבֶן וְגַנְזִיר (1 Chron. 28.11), may do so, on condition that this is when there are a conjunctive accent and a disjunctive accent in the word without an intervening letter.

Since in these passages it is stated that there are only three *tavs* that all readers agree should be given a major *dagesh*, this major *dagesh* must be something different from normal *dagesh forte*. Both what is traditionally regarded as *dagesh lene* and also what is traditionally regarded as *dagesh forte* would, therefore, have to be considered to belong to the second grade, the 'normal *dagesh*'. The examples cited for the 'normal *dagesh*' include only words that contain what is traditionally identified as *dagesh lene*,

²⁷ Edition in vol. 2 of this book, §II.S.3.0.

viz. תֹּרֶת and תֹּרֶתִי. It does not follow, however, that ‘normal dagesh’ must be identified as *dagesh lene*. Rather the author makes no distinction between *dagesh lene* and *dagesh forte*. This could have been because the ‘normal dagesh’ was considered to include a range of phonetic realizations and degrees of muscular pressure that included an ungeminated stop and a geminated stop. This is the usual interpretation of the function of the *dagesh* sign. Alternatively the passage could be interpreted as meaning that there was no phonetic distinction between what we call *dagesh lene* and *dagesh forte*. Rather *tav* with *dagesh* was normally realized with a similar degree of muscular pressure and duration, whether in contexts where it is traditionally interpreted as *dagesh lene* or in contexts where it is traditionally interpreted as *dagesh forte*. This, in fact, is the more straightforward interpretation of the passage, especially since the point of the passage is the division into ‘grades’ based on differences in degrees of ‘heaviness’ (*thiqal*), i.e. muscular pressure, and one grade would not be expected to contain a range of different pressures. The third grade would, therefore, involve an exceptionally high degree of muscular pressure and, one can infer, duration, which are found only in a few isolated words. What we seem to have here, therefore, is a description of an ‘extended *dagesh forte*’ type of reading with the addition of three cases of extra-long *dagesh*.

According to Misha’el ben ‘Uzzi’el in his *Kitāb al-Khilaf*, the Masorete Ben Naftali read all cases of בְּתִים that had two accents by applying more muscular force than in cases without two

accents (Lipschütz 1965, 4; Eldar 1994, 77).²⁸ Ben Asher, however, is said to have disagreed with Ben Naftali and read only וּבְתַּעֲבָה (I Chron. 28.11) and וּבְתַּעֲבִים (Deut. 6.11) with strong pressure. The second example is not mentioned in *Hidāyat al-Qāri'* but has the same accents (*'azla* and *geresh*). Ben Asher did not read any other cases of בְּתַּعַתִּים with the same degree of pressure.²⁹ Misha'el ben 'Uzzi'el (Lipschütz ibid.) cites a Masoretic statement that is attributed to Ben Asher: 'because he (Ben Asher) mentioned in his Masora saying that in the Bible are four cases with intense *dagesh*'.³⁰ These statements in *Kitāb al-Khilaf* indicate that the pronunciation of *tav* as extra-long in some cases was a feature of the reading of Ben Asher and Ben Naftali.

At the end of the passage from the long version of the *Hidāya* it is stated that in the Tiberian reading there is a realization of *resh* that is not found in any other reading and that this 'has the same status as the *tav* in the word בְּתַּעַתִּים according to the opinion of Ben Naftali,' who pronounced the *tav* of this word with 'a grade in between two grades' (*manzila bayna manzilatayn*). The author of *Hidāyat al-Qāri'* applies a

²⁸ כל לשון בתים מא כאן מנה בלחנין כאן בזנפתלי ידשה אענין ישד פיה זאיד על גירה 'Every case of בְּתַּעַתִּים with two accents was given *dagesh* by Ben Naftali, I mean he pronounced it with force more than other cases (of the word without two accents)'.

²⁹ 'ומה כאן גירה מא כאן ישד פיה אמתאל הדא אלשד' 'He did not pronounce other cases with the similar strength' (Lipschütz 1965, 4; Eldar 1994, 77).

³⁰ Ed. Lipschütz (1965, 4): לאנה דבר פי מסורתה וקאל אן פי אלקראן ארבעה בלשין מרובה דגשין.

classification based on grades (*manāzil*) to three variant articulations of *resh*. These were non-emphatic advanced uvular [ʀ], emphatic alveolar [r̊] and geminate respectively, which can, likewise, be correlated with three degrees of muscular pressure. The non-emphatic advanced uvular realization of *resh* is referred to in the *Hidāya* as the ‘light’ (*khafīf*) grade, the geminate *resh*, marked by a *dagesh*, is the ‘major’ (*kabīr*) grade, and the emphatic alveolar is ‘the grade between grades’ (*manzila bayna manzilatayn*) (Khan 1995, 2013c). Unlike the classification of the three variants of *tav*, the classification of three variants of *resh* is presented as two basic grades, with a third variant that is between two grades. The term *manzila bayna manzilatayn* is likely to originate in the Mu‘tazilite theological tradition.³¹ It is used in Arabic grammatical literature to refer to cases of intermediate grammatical status. Al-Jurjānī (d. 471/1078), for example, states that the Arabic negator *laysa* has an intermediate position (*manzila bayna manzilatayn*) between the verb *kāna* and the negative particle *mā* with regard to the extent of its inflection.³² Misha‘el ben ‘Uzzi‘el states that the distinctive feature of Ben Naftali’s reading of בַּתְּהִימָה was that he regularly pronounced the *tav* in it with more force when it had two accents than when it lacked a secondary accent. The term *manzila bayna manzilatayn*,

³¹ It was one of the principles of Mu‘tazilite doctrine that the term ‘unbeliever’ could not be applied to a Muslim believer who had committed a grave sin. The latter, therefore, could be neither a believer nor an unbeliever, but in an intermediate state (*manzila bayna manzilatayn*); cf. Gimaret (2015).

³² See Baalbakki (2008, 132).

therefore, must be referring to a degree of strength that was greater than a normal *dagesh*. In the passage on the *tav* in the *Hidāya*, the normal *dagesh* was read as a geminate so the intermediate position of Ben Naftali is presumably referring to a degree of strength that was greater than normal gemination but less than the extra-long pronunciation in the specified cases. The practice of pronouncing the *dagesh* of *tav* with a strength greater than normal gemination was, according to the *Hidāya*, unique to the Tiberian tradition.³³

The passage cited above from the original Arabic versions of *Hidāyat al-Qāri'* underwent an adaptation in the Hebrew versions of the work that were produced in medieval Europe, such as *Horayat ha-Qore* (twelfth century) and *Sefer Ta'ame ha-Miqra* (thirteenth century) (Eldar 1994, 16–18). In *Horayat ha-Qore* the passage has the following form:³⁴

³³ The Masorah Parva to I Chron. 28.11 contains the note: ‘הוּא תְּוֵין דָגְשִׁי’ ‘There are five *tavs* that have strong *dagesh*’. It is not clear in which words these *tavs* occur apart from the *tav* in בְּתַּרְבּוֹתִים in the 1 Chron. 28.11 (Dotan 1967, 15).

³⁴ Ed. Busi (1984, 60): שער התוי"ז. בג' מקומות נדגשת התוי"ז, מכל התוי"ז הנדגשות: והם וישימה תל עולם, ובתיו גנוcioו, וגבריא אלך תלתיהון. וכל בתים, שהן לשון מדה, אבל, בתים כגון: וין בתים עשרים אלף ושמן בתים עשרים אלף, דכותהון פתח ודgas. ובתים מלאים כל טוב, הניס את עבדיו ואת מקנהו אל הבתים, שהן לשון דירה, כגון: ואת בתויו גנוcioו, שאע"פ שהוא לשון דירה כולහון קמצין, ואין ידגיש בחוזק. מלעדי: הוא מדגיש בחוזק ובקמצין, מפני שיש בו משרת וטעם, ונראה כאילו הוא שני תיבות. ויש בתים מלאים טוב, הויל שהmarshut והטעם יחד שמוסיפין עליו, להdagish בחוזק: בתיבה.

Chapter on the *tav*. In three places *tav* has a (stronger) *dagesh* than all (other) *tavs* with *dagesh*, namely : וַיְשִׁמֶּה תָּלֵ – ‘He made it an eternal heap of ruins’ (Josh. 8.28), וְאֵת ‘and its houses and its treasuries’ (1 Chron. 28.11), וְגֹבְרִיא אֶלְךָ תְּלַחְזוֹן, and all cases of בְּתִים that denote measurement, such as וְיָם, ‘בְּתִים עָשָׂרִים אֶלְף וְשָׁמֶן בְּתִים עָשָׂרִים אֶלְף’, ‘and twenty thousand baths of wine, and twenty thousand baths of oil’ (2 Chron. 2.9) and the like with *patah* and *dagesh*. But (cases of) בְּתִים that denote habitation, like וְבָתִים מְלָאִים כָּל-טוֹב ‘and houses full of all good things’ (Deut. 6.11), הַנִּס אֶת-עֲבָדָיו וְאֶת-מִקְנָהוּ, אֶל-הַבָּתִים ‘he made his slaves and his cattle flee into the houses’ (Exod. 9.20), all have *qames* and are not given strong *dagesh* (i.e. they have *dagesh lene*), with the exception of וְאֶת-בָּתָרִים וְגַנְזִירִים (1 Chron. 28.11), which, although it denotes habitation, it has strong *dagesh* and *qames*, because it contains a conjunctive accent and main accent, and it is as if it is two words. Some add to the ones (i.e. these examples) that should be given strong *dagesh* וְבָתִים מְלָאִים כָּל- (Deut. 6.11), because the conjunctive accent and main accent are together in the word.’

Here a section has been added to the original passage referring to the plural form בְּתִים ‘baths’. This version of the passage conveys the sense that there are two types of *dagesh*, viz. *dagesh forte* and *dagesh lene*. The three cases of *dagesh* in the *tav* after *qames* in the *tav* after *qames* in (1 Chron. 28.11) and (Dan. 3.23), and some also include the *dagesh* after the *qames* in (Deut. 6.11), are equated with the *dagesh* of בְּתִים, i.e. they are interpreted as ‘normal’ *dagesh forte*. In all other cases of בְּתִים the *dagesh* is *dagesh*

lene. There is no reference here at all to an extra-long grade of *dagesh*. Evidently the author of *Horayat ha-Qore* was not familiar with the version of the Tiberian reading tradition in which the extra-long *dagesh* existed. For this reason, he misunderstood the point of the original passage that the *dagesh* in the *tav* after *qames* in the specified cases was exceptional in the degree of its strength and was not like the normal *dagesh forte* of words such as בְּתִים. The author of *Horayat ha-Qore* was also unfamiliar with the extended *dagesh forte* reading, since he alludes to a *dagesh lene* in most cases of בְּתִים.³⁵

One may infer from this that extra-long *dagesh* was a phenomenon of the extended *dagesh forte* reading and was not known in the *dagesh forte*—*dagesh lene* reading. It would appear that only the latter was transmitted to Europe, or at least in the circles where the European recensions of *Hidāyat al-Qāri'* were produced. If this is the case, then the reference to the Masoretes Ben Asher and Ben Naftali having extra-long *dagesh* in their

³⁵ The passage has the same adapted form also in *Sefer Ta'ame ha-Miqra*. Eldar (1984, 28) used this adapted version of the passage on the *tav* in his interpretation of the original Arabic version of *Hidāyat al-Qāri'* and this, therefore, led him to misinterpret the original. According to Eldar the *al-dagesh al-kabir* ‘major *dagesh*’ of *tav* was not a fully geminated *tav*, but only a half-geminated one [t']. The fully geminated *tav* [tt] is found in the word בְּתִים. This argument is based on the assumption that the passage is excluding consideration of *dagesh forte* used to express gemination. In the passage on the grades of *resh*, however, the ‘major’ (*kabir*) grade of the letter is said to be geminate *resh* with *dagesh*, as in הַרְאִיתָם (1 Sam. 10.24). This is evidence that the classification of the grades of strength of *tav* includes the full range of the realization of *tav*.

reading of *tav* in specific words would imply that their reading was of the extended *dagesh forte* type.

Another section of *Hidāyat al-Qāri'* that could be interpreted as evidence for the extended *dagesh forte* reading is one that concerns the reading of word-initial בְּגִדְכְּפָת letters with *dagesh* after a preceding word with a conjunctive accent in contexts where a fricative reading may be expected.³⁶ Most of the constructions in this section contain word-initial בְּגִדְכְּפָת consonants with what is normally interpreted as *dagesh lene*. The section, however, also includes word-initial בְּגִדְכְּפָת consonants in *dehq* constructions. There is no doubt that the *dagesh* of *dehq* constructions was *dagesh forte* (§I.2.8.1.2.). It appears that *Hidāyat al-Qāri'* considered these to have the same type of stop as the other constructions, which would imply that the word-initial בְּגִדְכְּפָת in the other constructions would have been pronounced with *dagesh forte*.

The extended *dagesh forte* reading arose by giving the *dagesh* sign its full value in all contexts. One motivation for this was an attempt to make a maximally clear distinction between fricative and plosive forms of the בְּגִדְכְּפָת letters. Another motivation for strengthening the pronunciation of the *dagesh* in this way was to mark a clear separation between syllables. This enhanced accuracy of reading words with בְּגִדְכְּפָת consonants was achieved without deviating from the standard Tiberian notation system.

³⁶ Long version, edition in vol. 2 of this book, §II.L.1.7; short version, edition in vol. 2 of this book, §II.S.2.0.

Without doubt, there was a distinction historically between geminate and non-geminate stops (i.e. between *dagesh forte* and *dagesh lene*). This is seen, for example, in pre-Masoretic Greek and Latin transcriptions such as the Greek transcriptions of the second column of Origen's Hexapla and the Latin transcriptions of Jerome:

$\beta\omega\kappa\rho$ = בָּקָר, ερδόφ = אֶרְדָּפָה, vs. ιδαββερ = יִדְבֵּר, σαδδικιμ = צִדְיקִים (Brønno 1943, 357, 383)

iegdal = יְגַדָּל (Sperber 1937, 158), marphe = מְרַפֵּא (Sperber 1937, 192), baddim = בְּדִים (Sperber 1937, 211), thephphol = תְּפֵל (Sperber 1937, 159)

The evidence we have of the extended *dagesh forte* reading is datable to the tenth and early eleventh centuries in the use of the *shadda* in a certain group of the Karaite transcriptions and in *Hidāyat al-Qāri'*. This can be interpreted as reflecting the fact that it was in the late Masoretic period that the extended *dagesh forte* reading began to be used by some readers. Since the orthoepic work *Hidāyat al-Qāri'* seems to be assuming that the extended system is the correct Tiberian reading, it can be hypothesized that the extended system was regarded as the preferred system among the surviving teachers of the Tiberian reading at that period. Indeed, we have argued above that the sources can be interpreted as indicating that this was a feature of the reading of Ben Asher and Ben Naftali, who belonged to the last generation of Tiberian Masoretes.

As the Karaite transcriptions suggest, the extended *dagesh forte* reading appears to have existed alongside the more conservative *dagesh forte*—*dagesh lene* reading. Fragments of anonymous Masoretic treatises datable to the tenth or eleventh centuries reflect this variation. In one such treatise (ed. Allony and Yeivin 1985, 101), there is a reference to a distinction between ‘heavy *dagesh*’ (*dagesh thaqil*) and ‘light *dagesh*’ (*dagesh khafif*) that corresponds to the normally accepted distinction between *dagesh forte* and *dagesh lene*. In another treatise, on the other hand, cases that are traditionally regarded as *dagesh lene* are referred to by the Arabic term for gemination *tashdīd* (II Firkovitch Evr.-Arab II 365, fols. 6r, 21r).

The orthoepic development of the orally transmitted Tiberian reading tradition appears not to have been known outside of Palestine and in the later Middle Ages it fell into complete oblivion. This lack of knowledge of the latest stages of the Tiberian reading arose because the tradition was disseminated outside Palestine and to later generations only in the form of the written vocalization. The vocalization in its standard form did not reflect these orthoepic developments. There is, therefore, a scholarly amnesia with regard to the final form of the Tiberian reading tradition, which can only be reconstructed in sources such as the Karaite transcriptions and the original Arabic versions of the orthoepic treatise *Hidāyat al-Qāri‘*.

This extended *dagesh forte* reading is likely to have been the stimulus for the use of *dagesh forte* on other consonants at the onset of syllables to mark clear syllable division in forms such as the verb בְּשַׁע ‘he supplants’ (Jer. 9.3), which is attributed to Ben

Naftali in *Kitāb al-Khilaf* (ed. Lipschütz 1965, לג), and the extended use of *dagesh* in non-Standard Tiberian manuscripts (see §I.3.3. below).

I.3.1.12. Dagesh in the Word בְּתִים

According to the passage on the *tav* in *Hidāyat al-Qāri'* that was discussed in the previous section, the *dagesh* in the word בְּתִים was pronounced in two ways. When the word had a secondary accent, it was pronounced extra-long, with the third grade of muscular force, greater than cases of בְּתִים without a secondary accent. Ben Naftali pronounced all cases of the word with a secondary accent in this way, whereas Ben Asher read it as extra-long only in one (or according to the *Kitāb al-Khilaf* two) specific verse(s). The *tav* of the word was pronounced as a ‘normal’ *dagesh* (second grade *tav*) when the word did not have a secondary accent and also, in the case of the reading of Ben Asher, in cases where it had a secondary accent outside of the one (or two) specific verse(s). As discussed, the term ‘normal’ *dagesh* in this passage referred to a ‘normal’ geminate *dagesh forte*, since *Hidāyat al-Qāri'* is describing an extended *dagesh forte* type of reading.

The extra-long duration of the *dagesh* is possibly the result of a prosodic epenthesis between stress prominences. When there was a secondary accent in the word, the *tav* was given an added duration to ensure a clearer separation between the stresses for the sake of rendering the reading eurhythmic to a maximal extent. The same applies to the other two words in which, according to *Hidāyat al-Qāri'*, the *tav* was pronounced extra-long, viz. These are וַיְשִׁמֶּה תַּלְ-עֹלָם שְׂמָה ‘He made it an eternal heap of

ruins' (Josh. 8.28, וְגַבְרִים אֲלֹךְ תָּלֻעֲתָהוּן, 'and these three men') (Dan. 3.23). In both cases the *tav* occurs in between two stress prominences that are close to each other. In one could assume that the word *תָּלָעֵת* had a secondary stress, although it is not marked by an accent or a *ga'ya*. The word has a short /e/ vowel, without inherent length (cf. *לֶבֶן*, like *לֶבֶן*, so it would be expected to be *segol* if not lengthened by some kind of stress (see §I.2.11.).

In the group of Karaite transcriptions that reflect an extended *dagesh forte* reading a *shadda* sign is marked on the *tā'* representing the Hebrew *tav* in all cases, e.g.

بَبَاتِي (BL Or 2550 fol. 18v, 5 | L [BHS]: *בְּבַתִּים* Zeph. 2.7 'in the houses of').

In the group of Karaite transcriptions that reflect a *dagesh forte*—*dagesh lene* reading, however, a *shadda* is not marked on the *tā'*, indicating that in this type of reading the word was read as a non-geminated stop, e.g.

هَبَاتِمْ (BL Or 2544, fol. 189r, 13 | L [BHS]: *הַבְּתִים* Exod. 9.20 'the houses')

مَنْ-هَبَاتِيمْ (BL Or 2544, fol. 159r, 8 | L [BHS]: *מִן-הַבְּתִים* Exod. 8.9 'from the houses')

بَاتِي (BL Or 2544, fol. 181v, 4 | L [BHS]: *בְּתִי* Exod. 8.17 'the houses')

בְּתִיהםּ (BL Or 2549, fol. 40v, 8 | L [BHS]: בְּתִיהםּ Jer. 6.12

‘their houses’)

וּמִבְּתָחוֹן (BL Or 2544, fol. 158r, 13 | L [BHS]: וּמִבְּתָחוֹן Exod.

8.5 ‘and from your houses’)

Also where there is a secondary accent in the word, the transcriptions of this group do not mark a *shadda* sign, reflecting a pronunciation with an ungeminated *tav*. This applies even to 1 Chron. 28.11, which is the form in which, according to the Masoretic treatises, both Ben Asher and Ben Naftali read the *tav* as extra-long:

וּמִבְּתָחוֹן (BL Or 2544, fol. 158v, 10 | L [BHS]: וּמִבְּתָחוֹן Exod.

8.7 ‘and from your houses’)

וּבְתָחוֹן (BL Or 2442, fol. 213v, 13 | L [BHS]: וּבְתָחוֹן Deut. 6.11

‘and houses’)

בְּתִיהםּ (BL Or 2556, fol. 122r, 7 | L [BHS]: בְּתִיהםּ 1 Chron. 28.11

‘its houses’)

We have seen that the author of *Horayat ha-Qore* in medieval Europe states that the *tav* of the word has *dagesh lene*, except in נְאָתָה-בְּתָחוֹן וְגַנְוֹנוֹן (1 Chron. 28.11) and נְבָתָהִים מְלֵאִים פֶּלֶטֶובָּן (Deut. 6.11).

Hayyūj, writing in Spain at the end of the tenth century, considered that the *tav* in all instances of בְּתָחוֹן was pronounced

as an ungeminated stop. This is implied by the following passage from his *Kitāb al-’Afāl Dhawāt Ḥurūf al-Līn*:³⁷

‘As for the “light” (type of בְּרִאָה, *bgdcbat*) this is like בְּרִאָה בְּרִאָה in the beginning God created’ (Gen. 1:1) ... and like ‘וְמַלְאָו בְּתִיק וּבְתִי כֹּל־עֲבָדִיךְ’ ‘and they shall fill your houses and the houses of your servants’ (Exod. 10.6).³⁸

Yequti’el ha-Naqdan, who was active in medieval Ashkenaz in the second half of the thirteenth century, writes in his work *En ha-Qore* that the *tav* in the word בְּתִים should be read with *dagesh lene* following Ḥayyūj:³⁹

‘I have found that Rabbi Yehudah Ḥayyūj, of blessed memory, said that there is a dagesh lene in the tavs of בְּתִים and the like. Be careful not to pronounce the dagesh strongly.’

³⁷ Ed. Jastrow (1897, 12–13): فاما الخفيف فمثل بِرَأْشِيَّةٍ بِرَأْا إِلَهِيْم ... وَمُثْلٌ وَمُلَاؤ: بَتَّيْكَ وَبَتَّيْ بَلْ عَبْدِيْكَ.

³⁸ The plosive pronunciation of the *tav* after long *qameṣ* was regarded as anomalous by Ḥayyūj and he is quoted by Ibn Ezra in his *Sefer Shaḥot* (ed. del Valle Rodríguez 1977, 1:289) to the effect that the *qameṣ* occurs to differentiate the word in meaning from بَتَّيْم ‘baths’ (measure of capacity); cf. Charlap (1999, 121–22). The source of such a statement about the differentiating function of the *qameṣ* cannot be identified in the extant corpus of Ḥayyūj’s writings. It may be based on Ibn Ezra’s misinterpretation of the passage concerning the consonants and بَتَّيْm in *Kitāb al-’Afāl Dhawāt Ḥurūf al-Līn* (ed. Jastrow 1897, 12–13) (José Martínez Delgado, personal communication).

³⁹ Ed. Gumpertz (1958, 46): מצאתי שאמר ר' יהודה חיוג ז"ל בתקיך בתיים ודומיי: יש בהם דגש קל בתוייהם ... השمر לך שלא תגדיש את התויין בחזק.

The reading traditions of the Jewish communities in Arabic-speaking countries in modern times preserved the gemination of *dagesh forte* according to the distribution of the *dagesh forte*—*dagesh lene* system of reading. There is no trace of an extended *dagesh forte* type of reading. Nor is there any trace of an extra-long gemination of *tav*. The plural form בָתִים is regularly read with *dagesh lene*, e.g. Yemen: bavo:t^he:xäm (בָתִים ‘in your houses’ Isa. 3.14) (Morag 1963, 38; Ya’akov 2015, 72 n.134). This applied even to cases where the word has a secondary accent.

It appears, therefore, that the extended *dagesh forte* reading, which included the reading of the *tav* of בָתִים as geminate and as extra-long in some cases where it had two accents, fell into oblivion in Jewish communities outside of medieval Palestine.

I.3.1.13. Loss of Gemination

Gemination has been lost in the Tiberian tradition in the following circumstances.

I.3.1.13.1. Guttural Consonants

Guttural consonants, and frequently also *resh*, lost their gemination in the pre-Masoretic period due to their weakness. In such cases the preceding vowel was lengthened by way of compensation:

םְאָמָה [ha:c:?'ɔm] ‘the man’ < *ha^vadam

ץְעֵדָה [ha:'fes] ‘the tree’ < *ha^ces

שְׁנַתְּהָרֶךְ [ha:'ho:ðeʃ] ‘the month’ < *hah^hodes̄

אֲזֶה [ha:'hu:] ‘that’ < **hahhū*

חָרְמֵשׁ [ha:χ̠r̠eməʃ̠] ‘the creeping creature’ < **harremes̠*

I.3.1.13.2. Weak Consonants with *Shewa*

Gemination is occasionally lost in a consonant that has vocalic *shewa*. This applies in particular to sibilants, sonorants (*yod*, *lamed*, *mem*, *nun*) and *qof*, which are weak consonants. The loss of gemination in such cases has two causes, viz. the articulatory weakness of the consonants and the prosodic weakness of the syllable of the *shewa* (§I.2.5.2.). There is some variation across the manuscripts with regard to the loss of gemination in such forms. In some cases, there is no compensatory lengthening of the preceding vowel, and the consonant that loses the gemination is syllabified as the coda of the preceding syllable, e.g.

L: הַשְׁלָבִים ‘the frames’ (1 Kings 7.28 < *hašl̠ab̠im*)

L: הַלְוִיִּם ‘the Levites’ (Exod. 6.25, etc. < *hal̠ovīim*)

L: וַיֹּדַבֵּר ‘and he spoke’ (Gen. 8.15, etc. < *wiy̠d̠aber*)

In some cases, the preceding vowel is lengthened, generally indicated by a *ga'ya*, and the consonant that has lost the gemination is read with vocalic *shewa*. This applies most commonly to a *mem* after the definite article (§I.2.5.8.1.) and a sequence of two identical consonants (§I.2.5.8.3.):

L: הַמִּדְבֵּר ‘the one speaking’ (Gen. 45.12, etc. < ‘*ha mid̠aber*’)

L: בְּקַלְלָוּ ‘when he cursed’ (A: *bekallaw*, 2 Sam. 16.7 < *bekallaw*)

I.3.1.13.3. Loss of Gemination when Adjacent to another Geminated Consonant

Dotan (1983) has shown that in L a *dagesh* marking gemination is sometimes omitted in a consonant with a full vowel when it is immediately followed by another geminated consonant. The omission of *dagesh* in this context is too systematic to be regarded as simply a scribal error, but rather it must be considered to reflect a phenomenon of the reading tradition. It is attested most commonly in weak consonants of the type that tend to omit *dagesh* when they are pronounced with *shewa*, i.e. sibilants, sonorants and *qof*. The majority of examples occur after the interrogative מַה־, the preposition מִן, the definite article or the *vav* consecutive. In many cases the *dagesh* is printed in BHS, although it does not appear in the manuscript L, e.g.

מַה־מִשְׁא < ‘What is the burden’ (Jer. 23.33)

מִשְׁנֵי < ‘from the Almighty’ (BHS מִשְׁנֵי, Isa. 13.6)

הָצֵן < ‘the monument’ (BHS הָצֵן, 2 Kings 23.17)

וְהַמִּסְכָּה < ‘and the covering’ (BHS וְהַמִּסְכָּה, Isa. 28.20)

הַשְׂבִּילִים < ‘the ears of corn’ (Gen. 41.24, BHS mistranscribes the first vowel as a *qames* due to erroneously interpreting a fleck on the parchment as the lower dot of a *qames*: בְּשַׂבְּלִים; cf. B *הַשְׂבִּילִים*)

וַיָּחַם < ‘and he fought’ (BHS וַיָּחַם, Jud. 11.20)

עֹזְיהָ < ‘Uzziah’ (2 Kings 15.30)

אַמְּנִיא < ‘nations’ (Aramaic, Dan. 3.7)

This kind of omission of *dagesh* occurs in the onset of unstressed syllables and the following geminated consonant typically, though not invariably, forms the onset of a stressed syllable. The consonant that has lost the gemination is, therefore, generally prosodically weaker. The condition that the omission of the gemination occurs adjacent to other gemination could reflect a rhythmic phenomenon, whereby the clash of two strengthened, and so prosodically prominent, consonants is avoided.

I.3.1.14. Erroneous Printing of *Dagesh* in BHS

Golinets (2013), in an important study of the manuscript L, has drawn attention to a number of errors in the diplomatic edition of L that is printed in BHS and its derivative digital editions in the reading of vocalization signs. This is due to various reasons, including confusion of natural specks on the parchment for pen marks, the concealment of vocalization signs by the strokes of letters and the overwriting or erasure of vocalization signs by a later hand.

Many of the errors in reading relate to the *dagesh* sign. Several *dagesh* signs that appear in unusual places in various words in BHS and are not found in other manuscripts have been demonstrated by Golinets (2013, 250–51) to be specks on the parchment of L. These include the following cases:⁴⁰

⁴⁰ There are a few additional places where the printed version of BHS is correct, but some of the digital versions and BHQ have an erroneously marked *dagesh*; see Golinets (2013, 250–251) for details.

	L	BHS	
Gen. 26.1	אַבִימֶלֶךְ	אַבִימֶלֶךְ	'Abimelech'
Gen. 34.28	חֲמֹרִים	חֲמֹרִים	'their asses'
Gen. 39.19	עָשָׂה	עָשָׂה	'he has done'
Deut. 12.9	לֹא־בָּאתָם	לֹא־בָּאתָם	'you have not come'
Jud. 14.2	קְחוּ אֶזְבֶּתְךָ לִי	קְחוּ אֶזְבֶּתְךָ לִי	'take her for me'
Jud. 19.5	חִרְפָּתִי	חִרְפָּתִי	'insult of me'
Cant. 6.8	מַלְכֹות	מַלְכֹות	'queens'

I.3.2. RAFE

The *rafe* sign is a horizontal line written over a letter. As with several other Masoretic terms, it appears to be an Aramaic participle in origin רְפֵה. In Judaeo-Arabic Masoretic treatises it is sometimes Arabicized as an Arabic participle, e.g. the anonymous treatise preserved in the Genizah CUL T-S NS 157.52: רָאֵפִיה *rāfiyya*, pl. *rawāfi*.

The main use of the sign is to mark בְּגִדְכְּפָת consonants as fricative. It is not, however, marked consistently in manuscripts. The marking of the sign was not standardized in the Tiberian tradition to the same extent as the marking of *dagesh* and it differs from one manuscript to another. Some of the model Tiberian manuscripts mark it more frequently than others. *Rafe* signs are, for example, more abundant in C and S than in L and A. It is marked only rarely in B. If two letters together both require *rafe*, the sign is generally only marked once over the space between them.

Rafe is not represented in most printed editions, including BHS and BHQ, which are based on L.⁴¹

The inconsistent marking of *rafe* on fricative consonants in L can be seen in the two sample verses below:

L: Gen. 30.1-2

וְמִרְאָה רָחֵל כִּי לֹא יִלְדֶּה לְעַקֵּב וַתַּקְנֵג רָחֵל בַּאֲחֹתָה וַתֹּאמֶר אֶל־יַעֲקֹב הַבָּהִר
לְיִלְבַּד אַתָּה אֲנֵנִי מִתְּהִלָּה אֲנֵנִי: וַיַּחֲרַר אָרֶף עַקֵּב בְּרַחְלָה וַיֹּאמֶר הַתְּחִתָּה אֶל־הָיִם
אֲנֵנִי אֲשֶׁר־מִנְעָה מִמְּךָ פְּרִי־בָּטָן:

When Rachel saw that she bore Jacob no children, she envied her sister; and she said to Jacob, “Give me children, or I shall die!” Jacob’s anger was kindled against Rachel, and he said, “Am I in the place of God, who has withheld from you the fruit of the womb?”

In most manuscripts, the *rafe* sign is generally, but not always, marked also on non-consonantal *he* and *’alef*, e.g. מלְכָה ‘queen’, אָבָּה ‘he came.’ A few manuscripts, especially C and S, often mark a *rafe* on the *’alef* in לִשְׂרָאֵל ‘Israel’, possibly reflecting its elision in this frequently occurring word.

The *rafe* sign is used sporadically on other letters in the manuscripts.⁴² This is found mainly in contexts in which *dagesh* would be expected according to normal morphological patterns and prosodic processes, e.g.

Weak letters that have lost *dagesh* when pointed with *shewa*:

A: וַיִּבְקַשׁ ‘and they inquired’ (Jud. 6.29)

⁴¹ *Rafe* signs are marked in Ginsburg’s *Massoretico-Critical Text of the Hebrew Bible* (1894).

⁴² Yeivin (1980, 286-7), Blapp (2017, 17-19).

A: שָׁלַח ‘send’ (Psa. 74.7)

Omission of *dagesh* in word-initial position where it would normally occur according to the rules of *dehiq* (§I.2.8.1.2.):

A: שִׁיחָה ‘a meditation for me’ (Psa. 119.99)

After an accent in words where gemination would normally occur:

A: מֵהֶן ‘why’ (Job 7.20)

The *rafe* sign is sometimes marked in contexts that closely resemble contexts where *dagesh* would be expected, e.g. on a prefix of a verbal form that is preceded by *vav* with *shewa* to distinguish it clearly from a geminated prefix of a *wayyiqtol* form:

A: וְשָׁמַע ‘and will listen’ (Isa. 42.23)

A: אֲבֹת ‘that he may come’ (1 Sam. 4.3)

After a prefixed preposition with *shewa* to distinguish the construction from constructions with a preposition combined with a definite article:

C: בְּעַלְמָה ‘on he the hill of’ (1 Sam. 9.11)

On the *nun* of first person and third person feminine verbal suffixes to distinguish them from verbal suffixes with geminate *nun*:

A: פָּרַע ‘redeem me’ (Psa. 119.134)

A: שָׂמַחְתָּ ‘you have made me’ (Job 7.20)

L: תְּצַלֵּחַ ‘they will tingle’ (1 Sam. 3.11)

Hidāyat al-Qāri' uses the term *rafe* for an ungeminated consonant in such contexts, e.g.

When a *rafe* (letter) follows it, it has *segol*, as in מַה לִידֵי (L: מַה לִידֵי, A: מַה לִידֵי Jer. 11.15 ‘what has my beloved?’).⁴³

The letters with *rafe* in the contexts just described typically belong to the set of weak sonorant letters *ו*, *מ*, *ל*. *Rafe* is sometimes marked on these letters in the manuscripts, no doubt by a process of analogical extension, when they are ungeminated in other contexts, where there is no risk of confusion with geminated letters, e.g.

- C: נָתַן ‘he has granted us’ (Isa. 63.7)
- C: חֲמֹץ ‘its leavening’ (Hos. 7.4)
- S: יְקֻנֵּי ‘wizard’ (Lev. 20.27)
- S: וְלֶשֶׁן־גַּם ‘and into a byword’ (Deut. 28.37).⁴⁴

In some manuscripts, *rafe* is occasionally marked on *vav* to indicate its consonantal value. This is found before *ו* expressing [u:] and also in other contexts (§I.1.6.), e.g.⁴⁵

- C: וְתַשְׁפִּיר ‘and you make equal’ (Isa. 46.5)
- L: וְיַחַד ‘and let it be’ (Psa. 90.17)

⁴³ Long version, edition in vol. 2 of this book, §II.L.3.2.2.: בָּאָן בְּסֶגּוּלָה כִּי מַה לִידֵי.

⁴⁴ Yeivin (1980, 286–87).

⁴⁵ Yeivin (1980, 286).

I.3.3. DAGESH AND RAFE IN MANUSCRIPTS WITH NON-STANDARD TIBERIAN VOCALIZATION

There is a considerable degree of variation in the use of the *dagesh* sign in manuscripts with Non-Standard Tiberian vocalization, but there is a clear tendency in many manuscripts for the sign to be used more frequently than in the standard Tiberian vocalization. Concomitantly there is also a wider use of the *rafe* sign.

The distribution of *dagesh* and *rafe* in Codex Reuchlinianus, the best known biblical manuscript with this system of vocalization, has been studied by Morag (1959). The use of *dagesh* and *rafe* in numerous other manuscripts of this type written in Europe, both biblical and non-biblical, has been described by Eldar (1978, 125–43). 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. Yeivin (1986) has described the distribution of *dagesh* in Vatican Urbinati 2, which was also written in Europe and exhibits a somewhat different distribution from the aforementioned manuscripts. The investigation by Blapp (2017, 2018) of Genizah fragments with Non-Standard Tiberian vocalization of a predominantly eastern origin from an earlier period (tenth–thirteenth centuries) has revealed a basic distribution similar to Codex Reuchlinianus and the material surveyed by Eldar, although each fragment exhibits some variant features.

In the Non-Standard Tiberian manuscripts, the rules of the marking of *dagesh* and *rafe* on the בָּגְדָּכְפָּת letters in the Standard Tiberian system are, in principle, applied to all letters, except the

pharyngeals (ח, ע), ר and those that function as both *matres lectionis* and consonants (ו, י, א, ה). 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*.

Genizah manuscripts

תֹועֵבָת צְדִיקִים (T-S A12.1, Blapp 2018, 138 | L [BHS]: תֹועֵבָת צְדִיקִים; Prov. 29.27 ‘abomination of the righteous’)

וְכָל-קָרְנֵי (T-S A13.35, Blapp 2018, 139 | L [BHS]: וְכָל-קָרְנֵי Psa. 75.11 ‘all the horns of’)

מַחֲסֹור (T-S A12.1, Blapp 2018, 141 | L [BHS]: מַחֲסֹור Prov. 28.27 ‘lack’)

חַלְקָת (T-S A12.1, Blapp 2018, 141 | L [BHS]: חַלְקָת Ruth 4.3 ‘portion of’)

European manuscripts

מִסְפָּר (Codex Reuchlinianus, Morag 1959, 217 | L [BHS]: מִסְפָּר Isa. 10.19 ‘number’)

מְמֹלֶכֶת (Codex Reuchlinianus, Morag 1959, 225 | L [BHS]: מְמֹלֶכֶת Jer. 18.9 ‘kingdom’)

כִּרְמֵי (Codex Reuchlinianus, Morag 1959, 217 | L [BHS]: כִּרְמֵי Isa. 5.3 ‘my vineyard’)

סְאֵן (Codex Reuchlinianus, Morag 1959, 217 | L [BHS]: סְאֵן Isa. 10.18 ‘sick’)

Another aspect of the extension of *dagesh* in the Non-Standard Tiberian system is the use in some manuscripts of *dagesh* on

word-initial בְּגַדְכָּפָת consonants after a preceding word with a final vowel and conjunctive accent, where a fricative form of the letter would be expected in Standard Tiberian. In these manuscripts, *dagesh* is used also on other consonants in this context. Examples:

יְאָבִדוּ כָּל־אֹזִיְּרִיךְ (Vatican Urbinati 2, Yeivin 1986, 495 | L [BHS]: יְאָבִדוּ כָּל־אֹזִיְּרִיךְ Jud. 5.31 ‘may all your enemies perish’)

כִּי נִכְפֵּה (Vatican Urbinati 2, Yeivin 1986, 495 | L [BHS]: כִּי נִכְפֵּה Jud. 20.36 ‘that they were defeated’)

According to Morag (1959, 226–28), 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 (1978, 125–43) likewise takes the view that this *dagesh* did not have a phonetic realization but rather was a ‘separative *dagesh*’.

Yeivin (1983, 1986) agrees with Morag and Eldar that the function of the *dagesh* in the Non-standard 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 pharyngeal consonants.

I should like to argue that the distribution of the *dagesh* in manuscripts with Non-Standard Tiberian vocalization reflects a type of reading that arose by an analogical extension of the extended *dagesh forte* reading (§I.3.1.11.3.). The analogical process involved extending the gemination marking strengthened

syllable onsets from בגדכפת 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 בגדכפת consonants in the extended *dagesh forte* reading was extended further to include these other consonants. This took place by a process of regularization, which resulted in a more consistent distribution of the orthoepic use of *dagesh* to mark clear syllable divisions, e.g.

Extended <i>dagesh forte</i> reading	Non-Standard Tiberian Tiberian reading
תִּשְׁבַּר [ttʰiʃ.'bbo:or]	תִּשְׁבַּר [ttʰiʃ.'bbo:or]
תִּשְׁמַר [ttʰiʃ.'mo:or]	תִּשְׁמַר [ttʰiʃ.'mmo:or]
נִשְׁמַר [niʃ.'mo:or]	נִשְׁמַר [nniʃ.'mmo:or]

The incipient extension of *dagesh* to strengthen the onsets of syllables is found in forms such as וַיִּתְּן־לָו ‘and he gave him’ (L, Gen. 24.36) and forms attributed to Ben Naftali such as בֶּן־גּוֹן ‘the son of Nun’ and יַעֲקֹב ‘he supplants’ (Jer. 9.3).

The orthoepic marking of *dagesh* on the second of two identical letters across word-boundaries, such as בֵּן־גּוֹן, and on a letter after a vowelless guttural, such as בְּשִׁׁירָה, is found also in some manuscripts with Palestinian pronunciation (Fassberg 1987), e.g.

על־לבך [בְּךָ] (T-S A43.1, Revell 1970a, 76 | L [BHS]: Isa. 57.11 ‘on your heart’)

הָרָקִים מִצְדָּקָה [הָרָקִים מִצְדָּקָה] (Bod. Heb. e 30 ff. 48-49, Revell 1970a, 76 | L [BHS]: Isa. 46.12 ‘who are far from righteousness’)

[בָּנִים] (Bod. Heb. e 30 ff. 48-49, Revell 1970a, 77 | L [BHS]: בְּנִים Isa. 5.28 ‘they seemed’)

[קָמַת][עַתָּה] (Bod. Heb. e 30 ff. 48-49, Revell 1970a, 77 | L [BHS]: קָמַת הַעֲמָק Isa. 7.11 ‘let it be deep’)

The use of the *rafe* sign is likewise extended in some Palestinian manuscripts analogously to its extension in Non-Standard Tiberian manuscripts. It is found in particular on consonants following *het* and ‘ayin that do not close a syllable, thus contrasting with *dagesh* that marks syllable closure after these consonants as we have just seen, e.g.

[פָּעֵן] (T-S A43.1, Revell 1970a, 77 | L [BHS]: פָּעֵן Exod. 28.34 ‘bell’)

[הָשָׁבֵן] (T-S A43.1, Revell 1970a, 77 | L [BHS]: השָׁבֵן Isa. 62.1 ‘I will not keep silent’)

In some Non-Standard Tiberian manuscripts, *dagesh* is added to a letter after a vowel, where a *dagesh* is lacking in the standard Tiberian tradition. This is found predominantly on the weak letters ל, מ, נ, ק and the sibilants in word-medial or word-final position, e.g.

[הַלְיכֹתִיךְ] (T-S A13.20, Blapp 2018, 144 | L [BHS]: הליכותיך Psa. 68.25 ‘your processions’)

[שְׁבִתְךָ] (T-S A13.20, Blapp 2018, 144 | L [BHS]: שְׁבִתְךָ Psa. 68.22 ‘he will shatter’)

[עֲזֵיתִי] (T-S A13.20, Blapp 2018, 144 | L [BHS]: עֲזֵיתִי Psa. 70.6 ‘poor’)

מַבְקָשִׁים (T-S A13.20, Blapp 2018, 144 | L [BHS]: מַבְקָשִׁים Psa. 70.5 ‘those who seek you’)

אֲשִׁיב (T-S A13.20, Blapp 2018, 144 | L [BHS]: אֲשִׁיב Psa. 68.23 ‘I will bring back’)

יָגֵל (T-S A13.20, Blapp 2018, 144 | L [BHS]: יָגֵל Psa. 70.5 ‘he is great’)

כֹּל (T-S A13.20, Blapp 2018, 144 | L [BHS]: כֹּל Psa. 69.20 ‘all of’)

בְּדִם (T-S A13.20, Blapp 2018, 144 | L [BHS]: בְּדִם Psa. 68.24 ‘in blood’)

These letters exhibit features of weakness in the standard Tiberian tradition, such as the loss of *dagesh* when they have *shewa* (§I.2.5.2.). It is likely, therefore, that the *dagesh* that is added to them in these contexts after open syllables was primarily intended as an orthoepic measure to guard against their weak articulation and to ensure that they were pronounced distinctly.

Another consonant that is sometimes marked with *dagesh* after a vowel in such manuscripts is *tet*, e.g.

וְחַפְלָנִי (T-S A13.20, Blapp 2018, 144 | L [BHS]: וְחַפְלָנִי Psa. 71.2 ‘and you rescue me’)

The manuscript T-S A13.20, where Blapp has identified many examples of this feature, also exhibits the marking of *dagesh* on word-initial consonants that do not usually take word-initial *dagesh* in Non-Standard Tiberian manuscripts, such as *het*, *vav* and *yod*:

םִקְרָר חַיִם (T-S A13.20, Blapp 2018, 143 | L [BHS]: Psa. 69.29 ‘of the living’)

שָׁמְמִים וְאָרֶץ (T-S A13.20, Blapp 2018, 143 | L [BHS]: Psa. 69.35 ‘and earth’)

בְּשֹׁו (T-S A13.20, Blapp 2017, 163 | L [BHS]: Psa. 70.3 ‘let them be put to shame’)

There are numerous Non-Standard Tiberian manuscripts with the extended use of *dagesh* in the Genizah, which are datable to the Masoretic period or shortly after, i.e. tenth–thirteenth centuries (Díez Macho 1963; Blapp 2017, 2018). Arrant (2020) has shown that many of these manuscripts were written in a monumental format with three columns similar to the model Tiberian manuscripts. This suggests that the marking of *dagesh* in such manuscripts reflected a living reading tradition in the Middle East at the time when such manuscripts were written.⁴⁶

Manuscripts with Non-Standard Tiberian extended *dagesh* were widely distributed in medieval Ashkenaz. Yequti'el ha-Naqdan, who was writing in medieval Ashkenaz in the second half of the thirteenth century, is 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

⁴⁶ Some medieval Arabic sources report marginal cases of *tashdīd* (i.e. gemination) of consonants at the beginning of syllables in the recitation of the Qur'ān, e.g. يَخْتِفُ *yakhtifū* ‘it takes away’ (Q 2.20) (ed. Bergsträsser, 1934, 3). This would, presumably, reflect a similar orthoepic measure to ensure clear syllable division.

belong to the **בגְּדַכְּפָת** group. This is expressed in the following passage from his *'En ha-Qore* (ed. Yarqoni 1985, 105):

‘Now you should understand that the letters **בגְּדַכְּפָת** 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 שְׁקָשׁ וְלְטִמְנָצָקָשׁ, 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.’⁴⁷

Yequti'el then gives a number of examples of *dagesh lene* in the letters שְׁקָשׁ וְלְטִמְנָצָקָשׁ both after guttural letters, e.g. בְּשֻׁלָּה, and after non-guttural letters, e.g. נְבָקָעִי (Yarqoni 1985, 107). Although the tradition of marking this *dagesh* continued in medieval Ashkenaz, Yequti'el's remarks indicate that the reading of the *dagesh* as *dagesh 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 *dagesh* of the Non-Standard Tiberian vocalization. Indeed a statement by David Qimhi, writing in southern France at roughly the same period as Yequti'el, could

⁴⁷ ועתה הבן לך כי אותיות בזג'כְּפָת נשמעים בכל מלה בדגש ודינוזם ורפיונות ניכר בלשון ותקוע בפה במווצא הדיבור בין שהוא דגש קל בין שהוא דגש חזק אבל זולט מנצח'ש הדגש הקל לא נשמע בהם ברוב מקומות ... ורוב אנשי ארצנו לא ידעו להשמיע את הדגש הקל הבא בותיות האלה.

be interpreted as indicating that there were still memories of this original pronunciation. In his *Mikhlol* he states:

'Whenever mobile *shewa* is followed by one of the letters בְּגַדְכָּפֶת, the letter from the (letters) is soft ... The same applies to the other letters with regard to their strength and lightness, for example in לְמֹה 'why' the reading of the *lamed* is strong and in לְמֹה וְלְמֹה 'and why?' the reading of the *lamed* is light because of the mobile *shewa* in it. In שָׁאָל שָׁאָל־הָאִישׁ 'the man questioned us carefully' (Gen. 43.7) the reading of the *shin* is strong; in וְשָׁאָל לוּ 'and he shall ask for him' (Num. 27.21) the reading of the *shin* is light. In נִפְלֵוּ פְנִיךְ '(why) has your countenance fallen?' (Gen. 4.6) the reading of the *nun* is strong; in וְנִפְלֵוּ וְלֹא־יָקּוּמוּ '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 *dagesh*.'⁴⁸

In this passage, Qimhi refers to strong and weak variants of consonants. He states that this variation is found not only in the consonants בְּגַדְכָּפֶת, but also in other consonants. The distribution of the variation in the other consonants is the same as is found with the consonants בְּגַדְכָּפֶת, i.e. the weak variant occurs after a vowel. This appears, therefore, to be an allusion to the type of

⁴⁸ Ed. Rittenberg (1862, 140a): כל שוי' נע וסמרק לה אחת מאותיות בג"ד כפ"ת: האות ההייא אשר הוא מבג"ד כפ"ת תרפה ... וכן בשאר האותיות כפי חזקתם וככפי קלותם כמו למה קריאת הלמ"ד חזקה, ולמה קריאת הלמ"ד קלה מפני שוי' הנע אשר עליה, שאל שאל האיש קריאת השי"ז חזקה ושאל לו קריאת השי"ז קלה, נפלו פניך קריאת הנז"ן חזקה, ונפלו ולא יקומו עוד קריאת הנז"ן קלה וכן שאר האותיות על זו הדורך זולתי היוז"ד שהיא קלה לעולם זולתי אם תדרש.

pronunciation that is reflected by the extended *dagesh* of Non-Standard Tiberian vocalization, although Qimḥi does not refer to the marking of the *dagesh* sign on the strong variant of the consonants outside the בְּגָדְכָפֶת 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 *dagesh*’ can also be correlated to the type of pronunciation reflected by Non-Standard Tiberian vocalization. In manuscripts exhibiting this type of vocalization *yod* often lacks *dagesh* in word-initial or post-consonant position and takes *dagesh* only where this occurs in the standard Tiberian vocalization.⁴⁹ In this passage, therefore, we may have evidence that features of the extended *dagesh* type of Non-Standard Tiberian pronunciation survived in Ashkenaz and were applied to biblical manuscripts with standard Tiberian vocalization. It should be noted, however, that Qimḥi makes a distinction between *dagesh lene* (ךְ) and *dagesh forte* (ךִ) in the בְּגָדְכָפֶת consonants and does not identify the fortition of the other consonants in word-initial position with the gemination of *dagesh forte*.

As alluded to by Yequti'el ha-Naqdan, the type of pronunciation that made a distinction in pronunciation between consonants outside the בְּגָדְכָפֶת group after a vowelless consonant or word-initial position was not widely followed in medieval Ashkenaz. Yequti'el describes a reading tradition in which there was a general tendency to weaken *dagesh forte*, especially when the letter had *shewa* (Yarqoni 1985, 113). There is evidence from

⁴⁹ Cf. Morag's (1959, 220) description of the distribution of *dagesh* in Codex Reuchlinianus.

transcriptions of Hebrew into Latin script in medieval France that letters with *dagesh forte*, according to the standard Tiberian vocalization, were not pronounced geminated (Gumpertz 1953, 5; Yarqoni 1985, 108–11). The marking of *dagesh forte* is, moreover, frequently omitted in medieval Ashkenazi prayerbooks (Eldar 1978, 115–22), and is completely lost in modern Ashkenazi reading traditions (Glinert 2013, 192). 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.

I.4. REFLECTIONS OF THE IMPERFECT LEARNING OF THE TIBERIAN PRONUNCIATION IN THE MIDDLE AGES

I.4.1. PRELIMINARY REMARKS

The Tiberian pronunciation was highly prestigious when it was a living oral tradition (§I.0.9.). For this reason, many readers strove to adopt it in their reading of the Bible and orthoepic measures were taken to ensure that it was pronounced correctly and distinctly. The fact that the Tiberian pronunciation was the ideal target of readers of the Bible is reflected by the fact that many manuscripts pointed with Babylonian and Palestinian vowel signs display a tendency to convergence with the Tiberian tradition.

Although the prestigious Tiberian pronunciation tradition was the ideal target, many readers fell short of achieving this target due to imperfect learning and interference from other reading traditions and vernacular languages.¹ This is reflected by the fact that manuscripts with Babylonian and Palestinian systems of vocalization that were adapted to the Tiberian tradition rarely exhibit complete convergence. Even those of a manuscript such as I Firkovtich Evr. I B 3 (*Codex Babylonicus*

¹ For the phenomenon of imperfect learning and its role in conditioning linguistic change see Thomason and Kaufman (1988, 251–55) and Thomason (2001, 66–76).

Petropolitanus), which appears to represent the Tiberian tradition very closely, exhibits some differences from the tradition of the inner circle of the Tiberian Masoretic school (§I.2.5.8.).

The various Non-Standard Tiberian manuscripts that have come down to us from the Middle Ages exhibit some developed orthoepic features of the Tiberian tradition, such as the extended use of *dagesh*, but in many cases their vocalization reflects a reading that falls short of the Tiberian model.

The Karaite transcriptions into Arabic script exhibit readings of various degrees of closeness to the Tiberian tradition. Most are very close, whereas a few reflect a reading that falls short of the Tiberian ideal due to imperfect learning and interference. The transcriptions are particularly important for our understanding of the processes at work that resulted in such a failure to reach the ideal target. The discussion in this chapter, therefore, will be based to a large extent on the evidence from the transcriptions.

The failure to achieve the target is due to imperfect learning and the impact of the phonology of a substrate on the production of the reading. The key process involves the matching of phonetic sounds in the Tiberian target pronunciation with phonemic prototypes in the substrate rather than learning the Tiberian phonemic prototypes and matching the phonetic sounds with these. This can lead to a distribution of sounds that does not correspond to that of the Tiberian target. Such a suboptimal outcome can be classified into two types. (i) The distribution of sounds may correspond to that of the substrate. (ii) The distribution of sounds may correspond neither to that of the substrate

nor to that of Tiberian target. In the latter case, the resulting type of pronunciation can be said to be a ‘hypercorrection’.

I.4.2. CONSONANTS

The main case study concerning the interference of a substrate in the achievement of a Tiberian target in the reading of consonants is the pronunciation of the interdental consonants.

In most of the Sefardi reading traditions of the Levant and North Africa that have continued down to modern times the letters *tav* and *dalet* are pronounced as stops in all contexts. They are not pronounced as interdentals where the Tiberian tradition had fricative *tav* [θ] or fricative *dalet* [ð],² e.g.

Aleppo

kəvrat 'rə,rə's (Katz 1981, 9 | L [BHS]: כְּרָתָאָרָץ Gen. 49.19
'some distance')

'gad ge'dud (Katz 1981, 8 | L [BHS]: גָּד גָּדוֹד Gen. 49.19 'Gad,
a troop ...')

Jerba

we,həthal'le'x (Katz 1977, 17 | L [BHS]: וְהַתֵּלֶךְ Exod. 21.19
'and he walks about')

jaʃa'bod (Katz 1977, 18 | L [BHS]: יִשְׁבֶּד Exod. 21.2 'he will
work')

² For this phenomenon see Garbell (1954, 232), Katz (1977, 16–18, 1981, 4–5), Akun (2010, 35–37, 46–47), Henshke (2013, 861–182).

Morocco

tihu'mut (Akun 2010, 46 | L [BHS]: תְּהֻמָּת Exod. 15.8
'depths')

mi'yad (Akun 2010, 36 | L [BHS]: מֵיָּד Exod. 14.30 'from the hand of (cstr.)')

The Sefardi reading traditions had their origin in the Palestinian reading tradition of Hebrew. This phenomenon, however, was not an original feature of the Palestinian reading tradition, but rather it appears to be the result of interference from the Arabic dialects spoken by the Jews of the regions in question, in which stops have replaced the interdental consonants.³ In regions where the Arabic dialects of the Jews preserved the interdentals, these consonants were generally preserved also in the local Sefardi reading traditions of Hebrew.⁴

In some medieval Karaite transcriptions, there is evidence that readers sometimes pronounced *tav* and *dalet* as stops where interdental realizations would be expected. This is seen particularly clearly in the case of the transcription of *tav*, since the stop and fricative realizations are distinguished by different Arabic diacritics (i.e. ئ vs. ئ), whereas the occurrence of an Arabic ئ with-

³ See, for example, Nevo (1991, 3–4: Aleppo), David Cohen (1975, 19: Tunis), Marcel Cohen (1912, 21: Algiers).

⁴ This is seen, for example, in the reading traditions of the Jews of Yemen (Morag 1963, 41–42) and of the Jews of Baghdad (Morag 1977, 5)

out a diacritic in a manuscript of a transcription could, in principle, be the result of the scribal omission of the diacritic from the letter *dhāl* and need not necessarily be interpreted as a *dāl*.

One manuscript of interest in this respect is BL Or 2551, fols. 31-101, which is an Arabic transcription of Psalms accompanied by an Arabic commentary. Where fricative *tav* occurs in the Tiberian tradition, this manuscript generally has the Arabic letter interdental *thā'*, e.g.

مشلاحت (BL Or 2551 fol. 31r, 3 | L [BHS]: מִשְׁלָחֵת Psa.

78.49 ‘sending of’)

مماؤת (BL Or 2551 fol. 31v, 10 | L [BHS]: מִמְּאוֹת Psa. 78.50

‘from death’)

ראשית (BL Or 2551 fol. 32r, 6 | L [BHS]: רִאْשִׁית Psa. 78.51

‘beginning’)

قاشا (BL Or 2551 fol. 32v, 13 | L [BHS]: קָנַתָּה Psa. 78.54 ‘(it

f.) acquired’)

On several occasions, however, it has Arabic *tā'* where the Tiberian pronunciation has a fricative *tav*, reflecting the pronunciation of the consonant as a stop, e.g.

هتعبار (BL Or 2551 fol. 34v, 3 | L [BHS]: הַתְּعַבֵּר Psa. 78.62

‘he was angry’)

ات (BL Or 2551 fol. 37r, 14 | L [BHS]: **תָּא** Psa. 79.1 object marker)

In some cases the vocalizer adds a *rafe* sign over the *tā'*:

كتوم (BL Or 2551 fol. 36v, 9 | L [BHS]: **כְּתֹם** Psa. 78.72
'according to the integrity')

وبتونوث (BL Or 2551 fol. 36v, 9 | L [BHS]: **וּבְתוּנוֹת** Psa. 78.72 'and with the skilfulness of')

وبتو לנוتاو (BL Or 2551 fol. 34v, 6 | L [BHS]: **וּבְתוּלָנוֹת** Psa. 78.63 'and its maidens')

بختوب (BL Or 2551 fol. 55r, 2 | L [BHS]: **בְּכַתּוֹב** Psa. 87.6
'when writing')

The fact that in many places the manuscript has *thā'* where expected in the Tiberian tradition shows that the reading that it represents is not a type of Sefardi reading without any interdental consonants such as those discussed above. It appears to be an attempt at reading with a Tiberian pronunciation. The reader was successful in achieving the correct pronunciation of fricative *tav* in many places, but in several cases interference from a substrate resulted in this being read incorrectly as a stop. The *rafe* sign written over *tā'* in some cases reflects the reader's Tiberian target, which was not achieved.

It is significant to note that in this manuscript transcriptions of Tiberian fricative *tav* with the Arabic stop *tā'* are much

more common in the Hebrew words that are embedded within the Arabic commentary. None of these is marked with the *rafe* sign, e.g.

مشلحت (BL Or 2551 fol. 31v, 7 | L [BHS]: מְשַׁלֵּחַ commentary on Psa. 78.49 ‘sending of’)

ناتيپ (BL Or 2551 fol. 31v, 12 | L [BHS]: נָתַב commentary on Psa. 78.50 ‘a path’)

لا تاسور (BL Or 2551 fol. 31r, 13 | L [BHS]: לֹא תִּשְׁכַּח Deut 17.11 in the commentary on Psa. 78.50 ‘you shall not decline’)

The isolated Hebrew words within the commentary evidently reflect a less learned type of reading than the reading of the biblical text itself. Less effort was made to achieve the prestigious Tiberian target.

The ultimate origin of this elimination of interdentals in the Hebrew reading is likely to have been the lack of interdentals in the vernacular Arabic speech of the reader, as is the case with the modern Sefardi traditions without interdentals. There is, indeed, evidence from inscriptions and papyri that interdental consonants were lost in some Arabic dialects as early as the beginning of the eighth century C.E. (first century A.H.).⁵

⁵ See Hopkins (1984, 33–36). To the material cited by Hopkins can be added the inscription no. 15 in Combe, Sauvaget and Wiet eds. (1931–

A possible way of explaining the suboptimal distribution of stops and interdentals in the manuscript is the model proposed by Blevins (2017) for phonological processes that take place in language contact situations. In the spoken vernacular of the reader, there was not an unvoiced interdental phoneme /θ/ but only a stop phoneme /t/ or, more likely, /t^h/, i.e. an aspirated unvoiced stop. This had only stops as its phonetic realization, i.e. [t^h] and most likely also deaspirated [t]. When the reader heard in the Tiberian pronunciation the interdental phonetic tokens [θ], these were perceptually matched to the stop /t^h/ prototype phoneme of the reader's vernacular. This matching brought about a 'perceptual magnet effect', to use Blevins' metaphor, whereby the interdental tokens of Tiberian were perceived as being like the stop tokens of the prototype in the native vernacular. As a result of this lack of perception, or at least difficulties of perception, of phonetic difference, the two tokens were confused. The ultimate result of such a process would be the pulling of the interdental into a change that would level its difference from the token of the prototype in the vernacular, i.e. a stop. In the attempted pronunciation reflected by the manuscript, however, the reader still had some knowledge, if imperfect, of the Tiberian distribution of interdentals and a desire to implement it, at least in the learned reading of the biblical text section. This has prevented a complete levelling of the distinction between interdentals and stops.

1991). The main evidence in these sources is the occurrence of the pointing of Arabic *tā'* where *thā'* is expected.

Another manuscript of a Karaite transcription, BL Or 2552 fols. 90-141, in most cases has an Arabic *tā'* where a fricative *tav* occurs in the Tiberian tradition, e.g.

כִּי-מָوتْ كَيْ موت ناموت (BL Or 2552 fol. 90v, 2 | L [BHS]:

נָמוֹת 2 Sam. 14.14 ‘because we have to die’)

قوهالت كَهُلَت Ecc. 1.1 (BL Or 2552 fol. 90v, 3 | L [BHS]:

‘preacher’)

يترون يَتَرُون Ecc. 1.3 (BL Or 2552 fol. 92v, 2 | L [BHS]:

‘profit’)

A Tiberian fricative *tav* is represented by Arabic *thā'* only in a few cases, e.g.

رايشي رَأَيْشِي Ecc 4.15 (BL Or 2552 fol. 106v, 3 | L [BHS]:

‘saw’)

ناحلاثانو نَاحْلَاثَانُ Lam. 5.2 (BL Or 2552 fol. 133v, 1 | L [BHS]:

‘our inheritance’)

يَشُومِيم يَتُوْمِيم Lam. 5.3 (BL Or 2552 fol. 133v, 11 | L [BHS]:

‘orphans’)

This indicates that the reader was making some attempt at the prestigious Tiberian pronunciation. The process of levelling of vernacular and Tiberian phonetic tokens had, however, progressed further than in BL Or 2551, fols. 31-101. This would have

involved, presumably, a lesser degree of ability to perceive differences between the tokens and a lesser degree of knowledge of the correct distribution of tokens in the Tiberian pronunciation. A further reflection of this in the manuscript is the occurrence of an Arabic *thā'* where there was a stop in the correct Tiberian reading:

الْتَّرْشَاعُ (BL Or 2552 fol. 113v, 2 | L [BHS]: עַל־תְּרַשֵּׁע Ecc.

7.17 ‘do not be wicked!’)

This can be regarded as a hypercorrection, whereby the reader strives to achieve the prestigious Tiberian reading by using an interdental token, but this is used incorrectly where the stop token should have occurred, resulting in a distribution of tokens that corresponds neither to that of Tiberian pronunciation nor to that of the vernacular substrate.

Another type of phenomenon that may be interpreted as the result of imperfect learning of the Tiberian tradition is attested in the following transcriptions. In some manuscripts, the *tav* in the words **תְּ** ‘you (fs)’ and **בָּתִים** ‘houses’ is transcribed by a fricative *thā'*, e.g.

الْتَّرْشَاعُ (BL Or 2544, fol. 14v, 2 | L [BHS]: תְּ Gen. 24.60 ‘you
(fs))

بَاشِيهَامُ (BL Or 2549, fol. 34v, 1 | L [BHS]: בָּתִים Jer. 5.25
‘their houses’)

Elsewhere in these manuscripts, the stop and fricative realization of *tav* are transcribed with their correct Tiberian

distribution. The *tav* in these two words in Tiberian pronunciation have the anomalous feature of being pronounced as a stop after a vowel although they are not geminated, at least in the conservative *dagesh forte*—*dagesh lene* stream of the Tiberian reading tradition (§I.2.5.9.3., §I.3.1.12.).⁶ The fricative pronunciation that is reflected in these manuscripts may be the result of an analogical levelling that eliminated the anomalous distribution of the ungeminated stop. This would be a natural phonological process, but it reflects imperfect learning of the standard Tiberian tradition.⁷

I.4.3. VOWELS

I.4.3.1. Interchanges of Signs Reflecting a Substrate of Palestinian Pronunciation

Many biblical manuscripts with Non-Standard Tiberian vocalization exhibit interchanges of *pataḥ* and *qameṣ* vowel signs and interchanges of *segol* and *šere* vowel signs. Similar interchanges are found in many biblical texts with Palestinian vocalization.

⁶ In the more advanced extended *dagesh forte* stream of the Tiberian tradition the *tav* would have been geminated in both words (§I.3.1.11.3.).

⁷ A parallel to this phenomenon of fricativization of the *tav* by analogy is attested in the Babylonian tradition of Biblical Hebrew, in that one manuscript with Babylonian vocalization has a Babylonian *rafe* sign over the *tav* of the plural form ‘houses’: וְבָתִים (BHS) (Ezek. 26:12 ‘and the houses of’ (Yeivin 1985, 868)).

Different patterns of interchanges are attested across the manuscripts.⁸

These interchanges reflect the fact that the reading tradition of the scribe had only one ‘a’ vowel phoneme and only one ‘e’ vowel phoneme, which was characteristic of the Palestinian reading tradition. This corresponded to the sound system of Jewish Palestinian Aramaic, which, in turn, is likely to have arisen by convergence with the sound system of Greek in Byzantine Palestine.

It is significant to note that non-biblical texts, generally of a liturgical nature, which reflect the Palestinian type of pronunciation, whether expressed in Tiberian or Palestinian vowel signs, sometimes have only one ‘a’ vowel sign and one ‘e’ vowel sign.⁹ Such liturgical texts no doubt reflect more directly the Palestinian sound system. The biblical manuscripts that exhibit interchanges of vowels reflect the result of readers attempting to pronounce the text with the prestigious Tiberian pronunciation but failing to achieve the target. The interchanging of written signs in the manuscripts reflects the phenomenon, but we must turn to some Karaite transcriptions to have more insight

⁸ For this phenomenon in Non-Standard Tiberian biblical texts see Morag (1959), Díez Macho (1963), and Blapp (2017). For biblical texts in Palestinian vocalization see Revell (1970a).

⁹ For liturgical texts with Tiberian vocalization of this nature see Mishor (2002, 235), Rand and Loeffler (2015, 9) [I thank my colleague Michael Rand for these references] and for texts with Palestinian vocalization see Revell (1970a; 1970b) and Yahalom (1997).

into how the signs were pronounced and the phonological processes that lay behind these interchanges of signs.

I.4.3.2. Evidence for the Phonetic Realization of Interchanged Signs

Of particular interest in this regard is the Karaite transcription in BL Or 2555. This manuscript exhibits an interchange of *sere* and *segol* signs in syllables where the vowel is long. In the transcription such vowels are represented sometimes by Arabic *'alif* and sometimes by Arabic *yā'*. This can be interpreted as reflecting the fact that the scribe read each of the two vowel signs with two different qualities. These may be reconstructed as [e:], which was represented by *'alif*, and [e:], which was represented by *yā'*. Some examples are as follows.

Where Standard Tiberian has *segol*

- (i) *Segol* sign corresponding to Tiberian *segol* is represented by *'alif*:

ياذاخا [jɔ:.'ðəχɔ:] (BL Or 2555 fol. 71v, 5 | L [BHS]: ياذاخا)

Ecc. 7.18 ‘your hand’)

- (ii) *Sere* sign corresponding to Tiberian *segol* is represented by *'alif*:

هابل ['he:vel] (BL Or 2555 fol. 26r, 12 | L [BHS]: הַבְל Ecc.

4.8 ‘vanity’)

- (iii) *Segol* sign corresponding to Tiberian *segol* is represented by *yā':*

يَافِي [jɔ:'fe:] (BL Or 2555 fol. 10r, 5 | L [BHS]: יָפֵי Ecc. 3.11

‘beautiful’)

- (iv) *Sere* sign corresponding to Tiberian *segol* is represented by *yāʔ*:

يَيْلَدٌ ['je:ləd] (BL Or 2555 fol. 31v, 1 | L [BHS]: יְלָדָן Ecc. 4.13

‘child’)

Where Standard Tiberian has *sere*

- (i) *Sere* sign corresponding to Tiberian *sere* is represented by *yāʔ*:

يَيْدَاعٌ [je:lða:aʕ] (BL Or 2555 fol. 81r, 2 | L [BHS]: يَدَاعٌ Ecc.

8.5 ‘he will know’)

- (ii) *Segol* sign corresponding to Tiberian *sere* is represented by *yāʔ*:

هَبَهِيمًا [habbehe:lmo:] (BL Or 2555 fol. 18r, 1 | L [BHS]:

هَبَهِيمًا Ecc. 3.21 ‘the beast’)

- (iii) *Sere* sign corresponding to Tiberian *sere* is represented by *'alif*:

هَامِمًا ['he:ɛmmɔ:] (BL Or 2555 fol. 14v, 2 | L [BHS]: هَامِمًا Ecc.

3.18 ‘they’)

- (iv) *Segol* sign corresponding to Tiberian *sere* is represented by *'alif*:

kan [k^he:ən] (BL Or 2555 fol. 14v, 5 | L [BHS]: קָנָה Ecc. 3.19
 ‘thus’)

This shows that interchanges of vowel signs can reflect a pronunciation with interchanges of vowel qualities that is independent of the interchange of the signs. This situation can be explained by the model used above (§I.4.2.). We may assume that the reader had only one long ‘e’ vowel prototype phoneme in the pronunciation tradition that he was most competent in. We can represent this as /ē/ and assume that it had the phonetic token [e:]. When the reader heard in the target Tiberian pronunciation the phonetic tokens of *sere* [e:] and long *segol* [ɛ:], both of these were perceptually matched with the prototype /ē/. This matching brought about a ‘perceptual magnet effect’, whereby the [e:] and [ɛ:] tokens of Tiberian were perceived as being like the [e:] tokens of the prototype in the source pronunciation. The reader attempted to pronounce the tokens of the Tiberian target pronunciation but had difficulty in distinguishing between them and, moreover, could not match the signs with the phonetic tokens that he pronounced.

I.4.3.3. Interchanges of Signs Reflecting a Substrate of Arabic Vernacular

Several medieval Bible manuscripts vocalized with Tiberian signs exhibit the interchange of *segol* and *patah*. The vocalization of some of these manuscripts exhibits a variety of other Non-Standard Tiberian features, such as the extended use of *dagesh*. This applies, for example, to manuscripts such as the following:

לְעֹזָרֶתִי (T-S A13.20, Blapp 2018, 148 | L [BHS]: לְעֹזָרֶתִי Psa. 70.2 ‘to my help’)

שַׁעַר (T-S A13.20, Blapp 2018, 148 | L [BHS]: שַׁעַר Psa. 69.13 ‘gate’)

עֲשָׂרִים (T-S Misc 1.46, Arrant 2020 | L [BHS]: עֲשָׂרִים Exod. 27.10 ‘twenty’)

רְבָע (T-S Misc 1.46, Arrant 2020 | L [BHS]: רְבָע Exod. 29.40 ‘quarter’)

The interchange is sporadically found, however, also in early model manuscripts that have a vocalization that is otherwise standard Tiberian. One such manuscript is II Firkovitch Evr. II B 10 (Yeivin 1980, 23 = L3), which was dedicated in 946 C.E., e.g.

אַרְבָּה (II Firkovitch Evr. II B 10 | L [BHS]: אַרְבָּה Gen. 16.10 ‘I shall multiply’)

There is evidence of this phenomenon even in L. In Deut. 28.11 BHS has the form בְּהַמְתֻקָּךְ ‘your cattle’ with a *patah* in place of an expected *segol*, which occurs elsewhere in this form in L and also in Deut. 28.11 in other early model manuscripts (e.g. S קְתֻפָּה בְּבָבָ). Golinets (2013, 254–355) has shown that the *patah* in L was written over an original *segol* by a second hand after, it seems, the ink of the *segol* had become faint. It is not clear at what period this second hand made this change, but it reflects the type of *segol*—*patah* interchange that is discussed here.

Some Non-Standard Tiberian manuscripts exhibit a tendency to substitute *patah* for *segol* specifically in the environment of gutturals, e.g.

עָרֹות (T-S AS 5.144, Outhwaite 2020 | L [BHS]: עָרֹות Lev. 18.15 ‘nakedness’)

הָאַזְרָח (T-S AS 5.144, Outhwaite 2020 | L [BHS]: הָאַזְרָח Lev. 18.26 ‘the native’)

As can be seen from other examples cited above, however, the interchange of *patah* and *segol* is not restricted to this pattern in many manuscripts.

The Babylonian vocalization system did not have a sign that corresponded to Tiberian *segol*. The Babylonian sign *miftah pumma* corresponded to both Tiberian *patah* and Tiberian *segol*. In principle, therefore, it may be thought that the interchange of *segol* and *patah* was due to a substrate of a Babylonian pronunciation tradition. The manuscripts described above, however, do not exhibit other features of Babylonian pronunciation. It is more likely that the interchange was brought about by the influence of the vernacular language of the vocalizers, which, at the period in question, must have been Arabic. Following the model of explanation used for other interference features, the interchange can be said to have arisen by the process of matching the *patah* and *segol* phonetic tokens, i.e. [a], [a:], [ɑ], [ɑ:], [ɛ] and [ɛ:], with the Arabic prototype phonemes /a/ and /ā/, rather than with the distinct prototypes of *patah* and *segol* in Tiberian pronunciation. In modern Arabic vernaculars the Arabic phonemes /a/ and /ā/ have a range of phonetic allophonic realizations that include [æ], [æ:], [ɛ], [ɛ:], [ɑ] and [ɑ:] (Barkat-Defradas 2011b, 2011a). Assuming that this was the case also in the Middle Ages, then this would have facilitated the perceptual matching of the Arabic prototypes /a/ and /ā/ with the tokens of Tiberian *patah* and *segol*.

As a result of this imperfect learning of Tiberian prototype phonemes and consequent difficulties of perceiving the differences between them, the phonetic qualities and their graphic representation were confused.

Some Non-Standard Tiberian Bible manuscripts that have the *patah*—*segol* interchange exhibit also interchanges of these vowels with other vowels, resulting in three-way or even four-way interchanges. Some examples of these from the data presented in Arrant (2020) include the following:

patah—*segol*—*šere* interchanges:

וְבָשַׂלְתָּה (T-S AS 67.133, Arrant 2020 | L [BHS]: Deut. 16.7 ‘and you will cook’)

יְרֹאָה (T-S AS 67.133, Arrant 2020 | L [BHS]: Deut. 16.16 ‘shall appear’)

בְּבָקָר (T-S AS 67.133, Arrant 2020 | L [BHS]: Deut. 14.26 ‘in oxen’)

יִהְיֶה (T-S AS 67.133, Arrant 2020 | L [BHS]: Deut. 15.9 ‘will be’)

patah—*segol*—*qameṣ* interchanges:

םְתַּתָּמָא (T-S NS 18.5, Arrant 2020 | L [BHS]: Num. 14.41 ‘you (pl.)’)

וַיֹּאמֶר (T-S NS 18.5, Arrant 2020 | L [BHS]: Num. 14.41 ‘and he said’)

תִּנְגַּפֵּה (T-S NS 18.5, Arrant 2020 | L [BHS]: Num. 14.42 ‘you will [not] be struck down’)

patah—segol—qames—sere interchanges:

וַיֹּאמֶר (LG B1.56, Arrant 2020 | L [BHS]: וַיֹּאמֶר Gen. 23.10 ‘and he answered’)

שַׁעַר (LG B1.56, Arrant 2020 | L [BHS]: שַׁעַר Gen. 23.10 ‘gate’)

זָקֵן (LG B1.56, Arrant 2020 | L [BHS]: זָקֵן Gen. 24.1 ‘old’)

סְבִיב (LG B1.56, Arrant 2020 | L [BHS]: סְבִיב Gen. 23.17 ‘around’)

עֲבָדָן (LG B1.56, Arrant 2020 | L [BHS]: עֲבָדָן Gen. 24.2 ‘his slave’)

לְעַת (LG B1.56, Arrant 2020 | L [BHS]: לְעַת Gen. 24.11 ‘at the time of’)

מְרָאָה (LG B1.56, Arrant 2020 | L [BHS]: מְרָאָה Gen. 24.16 ‘appearance’)

These three-way and four-way interchanges can also be explained as being due to the interference of an Arabic vernacular substrate. In such cases, the Arabic prototype phonemes /a/ and /ā/ are matched with the phonetic tokens of not only Tiberian *patah* and *segol* but also with those of *sere* and *qames* i.e. [e:], [ɔ] and [ɔ:]. Arabic /a/ and /ā/ can be realized with the high allophones [e], [e:] by the process of vowel raising (known as *'imāla*) in various modern Arabic dialects and this can be reconstructed for earlier periods (de Jong 2011). This is reflected by some medieval Judaeo-Arabic texts with Tiberian vocalization signs, which represent such raised /a/ and /ā/ vowels by *sere* (Khan 2010, 204), e.g.

עַלְיָ עֲבָדָךְ [fale: fibe:dak] = Classical Arabic ‘alā ‘ibādak
‘on your servants’ (T-S Ar.8.3, fol. 16v)

וְلֹם [walem] = Classical Arabic *wa-lam* ‘and not’ (T-S
Ar.8.3, fol. 22v)

In these medieval vocalized Judaeo-Arabic manuscripts the Tiberian *qames* sign is generally restricted to the representation of the /a/ vowel in the diphthong /aw/, reflecting, it seems, the partial phonetic assimilation of the vowel to /w/, which resulted in a back open-mid quality close to that of Tiberian *qames*, i.e. [ɔw] (Khan 2010, 210), e.g.

נוּבָה [nɔwba] = Classical Arabic *nawba* ‘accident’ (T-S
Ar.8.3 fol. 17r)

This suggests that the range of phonetic allophones of Arabic /a/ included also [ɔ].

The existence of a range of qualities in the phonetic allophones of Arabic /a/ and /ā/ that corresponded to those of the Tiberian vowels *patah*, *segol*, *sere* and *qames* would have facilitated the matching of the Arabic prototypes with these four phonetic qualities. One may say that the three-way and four-way interchanges reflect a lesser ability to perceive the distinct qualities of the Tiberian vowels than the two-way *patah*—*segol* interchange and so a lesser competence in the Tiberian pronunciation.¹⁰

¹⁰ Such a breakdown in the perception of differences in vowel qualities is reflected also in the rhymes of some medieval Hebrew poetry, in which, for example, a syllable with *qames* can rhyme with a syllable with *sere* (Rand 2020).

I.4.3.4. Hypercorrect Lengthening of Vowels

In §I.2.8.1.2. it was shown how the duration of long *qameṣ* and *segol* in word-final position was compressed in *deḥiq* constructions such as

- L: בָּם אֲעַזֵּדָה ‘I shall cause to witness against them’ (Deut. 31.28)
- L: לְקָדְמֵי־אֱלֹהִים ‘who are these to you?’ (Gen. 33.5)

In the Tiberian tradition, however, an effort was made to sustain the duration of these vowels in *deḥiq* to ensure that they were not completely reduced to short vowels, as happened in other reading traditions.

Due to imperfect learning of the Tiberian tradition, this orthoepic measure of sustaining the duration of the word-final vowels *qameṣ* and *segol* in *deḥiq* was sometimes extended hypercorrectly to historically short *qameṣ* and *segol*. This is reflected by the Karaite transcription BL Or 2539 MS B (=ff. 115-132), which represents historically short *qameṣ* and *segol* in unstressed closed syllables with *mater lectionis* *'alif*. The fact that other historically short vowel qualities in these conditions are not represented by *matres lectionis* suggests that this phenomenon is related to the orthoepic lengthening of *qameṣ* and *segol* in *deḥiq*, e.g.

قادشی (BL Or 2539 MS B, fol. 125r, 15 | L [BHS]: קָדְשֵׁי Num. 18.8 ‘the holy gifts of’)

لماشحا (BL Or 2539 MS B, fol. 125r, 16 | L [BHS]: למשחה)

Num. 18.8 ‘a priestly portion’)

لحاقي (BL Or 2539 MS B, fol. 125r, 16 | L [BHS]: לחקי)

Num. 18.8 ‘as a due’)

عاغلوت (BL Or 2539 MS B, fol. 115v, 6 | L [BHS]: עגלות)

Num. 7.3 ‘covered wagons’)

This manuscript reflects the hypercorrect lengthening also of *hatef qames*, e.g.

اهاليهم (BL Or 2539 MS B, fol. 122v, 13 | L [BHS]: אהלייהם)

Num. 16.27 ‘their tents’)

I.4.4. THE READING OF THE TIBERIAN VOCALIZATION IN THE LATER MIDDLE AGES

The various phenomena described above arose when the Tiberian pronunciation was still a living tradition. It was familiar to the scribes of the manuscripts, even if imperfectly, and it was regarded as a prestigious target. In the later Middle Ages, after the Tiberian pronunciation had fallen into oblivion, the prestige and authority of the oral Tiberian reading shifted to the written sign system (§I.0.12.). The Tiberian vocalization of manuscripts was then largely disconnected from the pronunciation of readers. Since there was no longer any attempt at achieving a pronunciation that differed from the local traditions, the Hebrew Bibles came to be read with these local traditions.

I.5. SUMMARY OF THE TIBERIAN PRONUNCIATION AND SAMPLE TRANSCRIPTIONS OF BIBLICAL PASSAGES

I.5.1. SUMMARY OF THE PHONETICS AND PHONOLOGY OF THE CONSONANTS

Letter	Name	Phonetic realization	Pho-neme	References
א	'alef	[ʔ]	/ʔ/	§I.1.1.
ב	bet (<i>dagesh</i>)	[b], [bb]	/b/	§I.1.2., §I.1.25., §I.3.1.11.3.
כ	bet (<i>rafe</i>)	[v]	/v/	§I.1.2., §I.1.25.
ג	gimel (<i>dagesh</i>)	[g], [gg]	/g/	§I.1.3., §I.1.25., §I.3.1.11.3.
ג	gimel (<i>rafe</i>)	[ɣ]	/ɣ/	§I.1.3., §I.1.25.
ד	dalet (<i>dagesh</i>)	[d], [dd]	/d/	§I.1.4., §I.1.25., §I.3.1.11.3.
ד	dalet (<i>rafe</i>)	[ð]	/ð/	§I.1.4., §I.1.25.
ה	he	[h]	/h/	§I.1.5.
ו	vav	[v], [w]	/v/	§I.1.6.
ז	zayin	[z]	/z/	§I.1.7.
ח	het	[ħ]	/ħ/	§I.1.8.
ט	tet	[tˤ]	/tˤ/	§I.1.9.

,	<i>yod</i>	[j], [ʃ]	/j/	§I.1.10. The stop allophone [ʃ] occurs only when the consonant is geminated.
כ, ק	<i>kaf (dagesh)</i>	[k ^h], [kk ^h]	/k ^h /	§I.1.11., §I.1.25., §I.3.1.11.3.
כ, ר	<i>kaf (rafe)</i>	[χ]	/χ/	§I.1.11., §I.1.25.
ל	<i>lamed</i>	[l]	/l/	§I.1.12.
מ, מ	<i>mem</i>	[m]	/m/	§I.1.13.
נ, נ	<i>nun</i>	[n]	/n/	§I.1.14.
ס	<i>samekh</i>	[s]	/s/	§I.1.15. This was equivalent in the oral reading tradition to <i>sin</i> (§I.1.21.). The distinction in orthography is an archaism (§I.0.8.).
ע	<i>'ayin</i>	[Ω]	/Ω/	§I.1.16.
פ	<i>pe (dagesh)</i>	[p ^h], [pp ^h]	/p ^h /	§I.1.17., §I.1.25., §I.3.1.11.3.
ף	<i>pe (dagesh)</i>	[p ^s], [pp ^s]	/p ^s /	This is attested only in נֶגֶף 'his palace' (Dan. 11.45), where its occurrence is not conditioned by the

				phonetic environment, so it should be identified as a phoneme (§I.1.17.).
פ	<i>pe (rafe)</i>	[f]	/f/	§I.1.17., §I.1.25.
ש	<i>sade</i>	[s [̄]], [z [̄]]	/s [̄] /	§I.1.18. For the voiced variant see §I.1.7.
ׁ	<i>qof</i>	[q [̄]]	/q [̄] /	§I.1.19.
ׂ	<i>resh</i>	[r [̄]], [r [̄]]	/r/	§I.1.20. The two variant realizations are conditioned by the phonetic environment and so should be identified as allophones.
ׁ	<i>sin</i>	[s]	/s/	§I.1.21. This was equivalent in the oral reading tradition to <i>samekh</i> (§I.1.15.). The distinction in orthography is an archaism (§I.0.8.).
ׁ	<i>shin</i>	[ʃ]	/ʃ/	§I.1.22.
ׂ	<i>tav (dagesh)</i>	[t ^h], [t th]	/t ^h /	§I.1.23., §I.1.25., §I.3.1.11.3.
ׂ	<i>tav (rafe)</i>	[θ]	/θ/	§I.1.23., §I.1.25.

I.5.2. SUMMARY OF THE PHONETICS AND PHONOLOGY OF THE FULL VOWEL SIGNS

Sign (placed on §)	Name	Phonetic realization	Phoneme	References
§	<i>patah</i>	[a], [ɑ], [a:], [ɑ:] Long in stressed syllab- les or open unstressed syllab- les.	/a/	§I.2.1., §I.2.2., §I.2.3.
§̄	<i>qames</i>	[ɔ], [ɔ:] Long in stressed syllab- les or open unstressed syllab- les.	(i) /o/ (when realized as short [ɔ]) /ɔ/ (when re- alized as long [ɔ:])	§I.2.1., §I.2.2., §I.2.3.
§̄̄	<i>segol</i>	[ɛ], [ɛ:] Long in stressed syllab- les or open unstressed syllab- les.	/ɛ/ /e/ (in the fi- nal syllable of certain nomi- nal and verbal forms)	§I.2.1., §I.2.2., §I.2.3.
§̄̄̄	<i>sere</i>	[e:]	/e/, /ē/	§I.2.1., §I.2.2., §I.2.3.

§	<i>hireq</i>	[i], [i:] Long in stressed syllables or open unstressed syllables.	/i/, /ī/	§I.2.1., §I.2.2., §I.2.3.
§	<i>holem</i>	[o:]	/o/ (in final syllable of certain nomi- nal and verbal forms) /ō/	§I.2.1., §I.2.2., §I.2.3.
§, §	<i>shureq</i> , <i>qibbus</i>	[u], [u:] Long in stressed syllables or open unstressed syllables.	/u/, /ū/	§I.2.1., §I.2.2., §I.2.3.

I.5.3. SUMMARY OF THE PHONETICS AND PHONOLOGY OF SHEWA AND THE HATEF SIGNS

Sign (placed on §)	Name	Phonetic realization	Pho- neme	Refer- ences
§	<i>shewa</i>	Silent <i>shewa</i> : [Ø]	/Ø/ ¹	§I.2.5, §I.2.6.

¹ Epenthetic vowel, without phonological representation.

		Vocalic <i>shewa</i> : [a], [ɔ], [ɛ], [e], [i], [o], [u]. The default realization of vocalic <i>shewa</i> is a short [a]. The other vowel qualities are conditioned by some specific environments, viz.: (i) Before a guttural consonant (עֲנָהָא) a vocalic <i>shewa</i> is pronounced as a short vowel with the quality of the vowel after the guttural. (ii) Before <i>yod</i> , a vocalic <i>shewa</i> is pronounced as a short [i].		
§	<i>hatef patah</i>	[a]	/∅/ ²	§I.2.5.
§	<i>hatef segol</i>	[ɛ]	/∅/ ³	§I.2.5., §I.2.7.
§	<i>hatef qames</i>	[ɔ]	/∅/ ⁴ /o/ ⁵	§I.2.5., §I.2.7.

² Epenthetic vowel, without phonological representation.

³ Epenthetic vowel, without phonological representation.

⁴ When an epenthetic vowel.

⁵ When a lexical vowel.

I.5.4. SAMPLE TRANSCRIPTIONS OF BIBLICAL PASSAGES

Each verse has two versions of transcription, which represent two different sub-traditions of the standard Tiberian reading. The first represents the *dagesh forte*—*dagesh lene* reading, whereas the second represents the extended *dagesh forte* reading (§I.3.1.11.3.). If a verse would have been pronounced the same in both streams of tradition, only one reading is given.

Links are given to audio files of oral performances by Alex Foreman of the Tiberian pronunciation reconstructed for the passages.

I.5.4.1. Genesis 1.1-13

Oral Performances

	<i>Dagesh forte</i> — <i>dagesh lene</i> reading without melody (Alex Foreman https://doi.org/10.11647/OBP.0163.06)	
	<i>Dagesh forte</i> — <i>dagesh lene</i> reading with Sefardi melody (Alex Foreman https://doi.org/10.11647/OBP.0163.07)	
	Extended <i>dagesh forte</i> reading without melody (Alex Foreman https://doi.org/10.11647/OBP.0163.08)	
	Extended <i>dagesh forte</i> reading with Sefardi melody (Alex Foreman https://doi.org/10.11647/OBP.0163.09)	

1 **בְּרִאָשָׁית בָּרָא אֱלֹהִים אֶת הַשְׁמִים וְאֶת הָאָרֶץ:**

[bare: 'ʃi:iθ⁶ bəc: 'Rɔ: ʔelo: 'hi:im 'e:eθ haʃʃɔ: 'ma:jim⁷ ve 'e:eθ⁸
ho: 'c: 'Rɛs⁹]

[bba're: 'ʃi:iθ bbɔ: 'Rɔ: ʔelo: 'hi:im 'e:eθ haʃʃɔ: 'ma:jim ve 'e:eθ
ho: 'c: 'Rɛs⁹]

2 **וְהָאָרֶץ הִתֵּה תָּהּוּ וּבָהּוּ וְחַשְׁךְ עַל־פָנִי תְּהֻם וְרוּחָ
אֱלֹהִים מְרַחְפָת עַל־פָנִי הַמִים:**

[və'hā'rɛt h̄i'teh t̄ahhu v̄b̄ahhu v̄chashk 'al-pən̄i t̄hem v̄ruχ
'elohim m̄rakhpat 'al-pən̄i hamim]

⁶ Default realization of vocalic *shewa*: §I.2.5.1. Insertion of an epenthetic vowel in a closed syllable with a long vowel: §I.2.4.

⁷ All stressed vowels are lengthened: §I.2.2.1.

⁸ Default pronunciation of *vav* is [v]: §I.1.6. Assimilation of a vocalic *shewa* to the quality of the vowel after a following guttural: §I.2.5.1.

⁹ Assimilation of a vocalic *shewa* to the quality of the vowel after a following guttural: §I.2.5.1.

¹⁰ Insertion of epenthetic in closed syllable with a long vowel: §I.2.4.

¹¹ Assimilation of a vocalic *shewa* to the quality of the vowel after a following guttural: §I.2.5.1.

¹² Assimilation of a vocalic *shewa* to the quality of the vowel after a following guttural: §I.2.5.1.

¹³ Glide [w] before furtive *patah*: §I.1.6.

¹⁴ Stressed vowels and vowels in open unstressed syllables are lengthened: §I.2.2.1.

[*θo:hu: va:jc:hc sə:θo:hu: vo:ho:ʃɛχ ʃal-ppʰa'ne: θo:ho:om va:ʁu:wah ʔelo:hi:im maʁa:he:fəθ ʃal-ppʰa'ne: ham'mɔ:jim]*]

3 **וַיֹּאמֶר אֱלֹהִים יְהִי אוֹר וֵיהִי־אוֹר:**

[*vaj'jo:məR¹⁵ ʔelo:hi:im ji'hi: 'o:oR va:jhi:-'o:oR¹⁶]*]

4 **וַיּוֹרֶא אֱלֹהִים אֶת־הַאוֹר כִּיְתוֹב וַיַּבְדַּל אֱלֹהִים בֵּין הַאוֹר
וּבֵין הַחֹשֶׁךְ:**

[*vaj'ja:aR ʔelo:hi:im ʔεθ-hɔ:'o:oR kʰi:-tʰo:ov vajjav'de:el
ʔelo:hi:im be:en hɔ:'o:oR wu've:en¹⁷ ha:ho:ʃɛχ]*]

[*vaj'ja:aR ʔelo:hi:im ʔεθ-hɔ:'o:oR kkʰi:-tʰo:ov vajjav'dde:el
ʔelo:hi:im bbe:en hɔ:'o:oR wu've:en ha:ho:ʃɛχ]*]

5 **וַיִּקְרָא אֱלֹהִים לֹאֹר יוֹם וַיְחַשֵּׁךְ קָרָא לְלֹה וֵיהִי־עָרָב
וֵיהִי־בָּكָר יוֹם אֶחָד:**

[*vajjiq'Rɔ: ʔelo:hi:im lɔ:'o:oR 'jo:om vala:ho:ʃɛχ:
va:jhi:-'ɛ:ʁɛv va:jhi:-'vo:qəR 'jo:om ʔɛ:hcɔ:ca'*]

¹⁵ A geminated *yod* is pronounced as a voiced palatal stop [j]: §I.1.10.

¹⁶ In [*va:jhi:*] there is orthoepic lengthening of the vowel before two weak consonants in contact: §I.2.10.

¹⁷ Word-initial *וּ* is pronounced [wu]: §I.1.6.

וַיֹּאמֶר אֱלֹהִים יְהִי רְקִיעַ בְּתוֹךְ הָמִים וַיְהִי מִבְדֵּל בֵּין מִם
לִמִּים:

[vaj'jo:mer ɻelo:h'i:im ji'hi: ɻɔ:q:i:jaʃ ba'θo:oχ ham'mo:jim
vi:'hi: mav'di:il 'be:en 'ma:jim ɬɔ:mo:jim]

[vaj'jo:mer ɻelo:h'i:im ji'hi: ɻɔ:q:i:jaʃ bba'θo:oχ ham'mo:jim
vi:'hi: mav'ddi:il 'bbe:en 'ma:jim ɬɔ:mo:jim]

וַיַּעֲשֵׂה אֱלֹהִים אֶת־הַرְקִיעַ וַיּוֹבֵל בֵּין הָמִים אֲשֶׁר מִתְחַת
לַרְקִיעַ וּבֵין הָמִים אֲשֶׁר מִעַל לַרְקִיעַ וַיְהִי־כֵּן:

[vaj'ja:ʃas ɻelo:h'i:im ɻεθ-hɔ:q:i:jaʃ vajjav'de:el be:en
ham'ma:jim ɬa'ʃɛ:ɛr mit'tʰa:haθ ɬɔ:q:i:jaʃ wu've:en
ham'ma:jim ɬa'ʃɛ:ɛr me:'ʃa:al ɬɔ:q:i:jaʃ va:jhi:-'χe:en]

[vaj'ja:ʃas ɻelo:h'i:im ɻεθ-hɔ:q:i:jaʃ vajjav'dde:el bbe:en
ham'ma:jim ɬa'ʃɛ:ɛr mit'tʰa:haθ ɬɔ:q:i:jaʃ wu've:en
ham'ma:jim ɬa'ʃɛ:ɛr me:'ʃa:al ɬɔ:q:i:jaʃ va:jhi:-'χe:en]

וַיַּקְרֵא אֱלֹהִים לַרְקִיעַ שְׁמִים וַיְהִי־עָרֵב וַיְהִי־בָּקָר יוֹם
שְׁנִי

[vajq'iq' ɻelo:h'i:im ɬɔ:q:i:jaʃ ɬɔ:mo:jim ɬɔ:q:i:jaʃ va:jhi:-'ʃɛ:rev
,va:jhi:-'vo:qe:r 'jo:om se:'ni:]

וַיֹּאמֶר אֱלֹהִים יְקֹוֹה הָמִים מִתְחַת הַשְּׁמִים אֶל־מִקּוּם אֶחָד
וְתָרָא הַיְבָשָׂה וַיְהִי־כֵּן:

[vaʃ'jo:mər ʔelo:'hi:im jiqqɔ:'vu: ham'ma:jim mit'tʰa:ħaθ
haʃʃɔ:'ma:jim ʔel-mɔ:'qo:om ʔe:ħɔ:vaθe:ħɔ:ʔe: haʃʃab-
ba:ħɔ:va:jhi:-ħe:en]

10 וַיָּקֹרֶא אֱלֹהִים | לְיַבְשֵׁה אֶرֶץ וּלְמִקְנֵה הַמִּים קָרָא יְמִים
וַיַּרְא אֱלֹהִים בִּידֹות:

[vajjiq'ħɔ: ʔelo:'hi:im lajjabboħɔ:ħɔ:ħɔ:ħɔ:ħɔ:wulmiq've:
ham'ma:jim qɔ:ħɔ:jam'mi:im vaj'ja:aħ ʔelo:'hi:im kʰi:-
'tɔ:ov]

[vajjiq'ħɔ: ʔelo:'hi:im lajjabboħɔ:ħɔ:ħɔ:ħɔ:ħɔ:wulmiq've:
ham'ma:jim qɔ:ħɔ:jam'mi:im vaj'ja:aħ ʔelo:'hi:im kkʰi:-
'tɔ:ov]

11 וַיֹּאמֶר אֱלֹהִים תְּדַשֵּׁא הָאָרֶץ דְּשֵׁא עַשֵּׁב מִזְרִיעַ זָרָע עֵץ
פְּלִי עַשֵּׁה פְּרִי לְמִינּוֹ אֲשֶׁר זָרְעָתָנוּ עַל-הָאָרֶץ וְיִהְיֶה:

[vaj'jo:meṛ ḥelo:'hi:im ṭ^ha·ð'ʃe:¹⁸ ḥɔ:'?c:ṛes^۳ 'de:ʃe: 'fə:sev
maz'r^fi;ja᷑^{۱۹} 'ze:ṛaf 'fə:es^۴ p^ha'ṛi: 'fə:se' pp^ha'ṛi:^{۲۰} lami:'no:
?a'ʃe:ṛ zar'ʃo:^{۲۱}-vo: ḥal-ḥɔ:'?c:ṛes^۴ ,va:jhi:-'χe:en]

[vaj'jo:meṛ ḥelo:'hi:im ṭt^ha·ð'ʃe: ḥɔ:'?c:ṛes^۳ 'dde:ʃe: 'fə:sev
maz'r^fi;ja᷑ 'ze:ṛaf 'fə:es^۴ pp^ha'ṛi: 'fə:se' pp^ha'ṛi: lami:'no:
?a'ʃe:ṛ zar'ʃo:-'vo: ḥal-ḥɔ:'?c:ṛes^۴ ,va:jhi:-'χe:en]

וְתוֹצֵא הָאָרֶץ דָּשָׁא עַשְׁב מִזְרִיע ָרָע לְמִינָהו וְעַז עַשָּׁה-
פְּנֵי אָשֵר וְרַעֲזָבָן לְמִינָהו וְיַרְא אָלָהִים בִּידּוֹב:

[vatt^ho:'s^fe: ḥɔ:'?c:ṛes^۳ 'de:ʃe: 'fə:sev maz'r^fi;ja᷑ 'ze:ṛaf
lami:'ne:hu: ve'fə:es^۴ 'fə:se' pp^ha'ṛi: ?a'ʃe:ṛ zar'ʃo:-'vo:
lami:'ne:hu: va:j'a:aṛ ḥelo:'hi:im k^hi:-'t^fo:ov]

[vatt^ho:'s^fe: ḥɔ:'?c:ṛes^۳ 'dde:ʃe: 'fə:sev maz'r^fi;ja᷑ 'ze:ṛaf
lami:'ne:hu: ve'fə:es^۴ 'fə:se' pp^ha'ṛi: ?a'ʃe:ṛ zar'ʃo:-'vo:
lami:'ne:hu: va:j'a:aṛ ḥelo:'hi:im kk^hi:-'t^fo:ov]

¹⁸ Orthoepic lengthening of the vowel before two weak consonants in contact: §I.2.10.

¹⁹ The pharyngealized alveolar realization of *resh* [r^f] is conditioned by contact with the preceding alveolar: §I.1.20. *Pataḥ* is pronounced as back [a] in the environment of pharyngealized consonants: §I.2.1.3.

²⁰ *Dehq* involving the compression of the vowel and compensatory gemination of the following consonant: §I.2.8.1.2.

²¹ The pharyngealized alveolar realization of *resh* [r^f] is conditioned by the fact that it is preceded by an alveolar consonant in the same syllable and/or the same foot: §I.1.20.

13 נִיהִי־עָרֶב וַיהִי־בְּקָר יוֹם שְׁלִישִׁי:

[va:jhi:-'ñε:rev va:jhi:-'vo:qer 'jo:om sali:'ʃi:]

I.5.4.2. Psalm 1

Oral Performances

	<i>Dagesh forte—dagesh lene reading without melody</i> (Alex Foreman https://doi.org/10.11647/OPB.0163.10)	
	<i>Dagesh forte—dagesh lene reading with Sefardi melody</i> (Alex Foreman https://doi.org/10.11647/OPB.0163.11)	
	Extended <i>dagesh forte</i> reading without melody (Alex Foreman https://doi.org/10.11647/OPB.0163.12)	
	Extended <i>dagesh forte</i> reading with Sefardi melody (Alex Foreman https://doi.org/10.11647/OPB.0163.13)	

- 1 אֲשֶׁר־הָאִישׁ אֲשֶׁר | לֹא הַלְךְ בַּעֲצָת רְשָׁעִים וּבַדָּרֶךְ
 חֲטֹאִים לֹא עָמַד וּבַמּוֹשֵׁב לְצִים לֹא יִשְׁבֶּן:
 [ʔa:ʃa:re: 22 - ho:ʔi:iʃ ʔaʃe:er 'lo: ha:l'a:aχ ba:ʃa:s'a:aθ
 ra:ʃi:im wuv'ðe:reχ hatt:c'i:im 'lo: ʃo: ʃe:ʃa:ʃi:im
 wuvmo:ʃa:av le:s'i:im 'lo: va:ʃe:jc:]
- 2 כִּי אֵם בַּתּוֹרַת יְהֹהָחַפְצָן וּבַתּוֹרַת יוֹמָם וְלִילָה:
 ['kʰi: 'i:im baθo:ʃa:aθ ʔaðo:ʃe:f's'o: wuvθo:ʃe:f's'o:²³
 jeh'ge: jo: ʃe:ʃa:ʃi:im va:ʃe:jc:]
- 3 וְהֹהֶה בְּעֵץ שַׂתְוֵל עַל־פְּלָגִי מִים אֲשֶׁר פָּרִיז | יִתְּנַעֲנֵת
 וְעַלְהוּ לֹא־יִגְזֹל וְכֹל אֲשֶׁר־יַעֲשֶׂה יַצְלִיחַ:

²² The short vowel in the first syllable is lengthened by a *merkha* to condition the reading of the following *shewa* as vocalic: §I.2.5.8.5. The vocalic *shewa* has *ga'ya*, which causes it to be read as half-long: §I.2.9.

²³ The initial *וְ* before a consonant with silent *shewa* is normally pronounced [wu] (§I.1.6.), but is here pronounced half-long due to the fact that it has minor *ga'ya*: §I.2.8.2.2.

[*הַכְּחָדְשָׁה*:²⁴ *k^he'f^ge:es^f* *כְּסִינָה*:²⁵ *כְּסִינָה-p^hal'ke:*²⁵ *מְכֻיֵּם*
תְּסִירְגָּר *p^hi^rjo:* *ji:t^th^ge:en* *b^hiⁿit't^ho:* *כְּסִינָה-le:hu:* *לוֹ:*²⁶ *jib'bo:ol*
va'χo:ol *תְּסִירְגָּר-ja:fa'se:* *jas^fli:jah]*

[*הַכְּחָדְשָׁה*:²⁴ *kk^he'f^ge:es^f* *כְּסִינָה*:²⁵ *מְכֻיֵּם* *תְּסִירְגָּר*
pp^hi^rjo: *ji:t^th^ge:en* *b^hiⁿit't^ho:* *כְּסִינָה-le:hu:* *לוֹ:*²⁶ *jib'bo:ol*
va'χo:ol *תְּסִירְגָּר-ja:fa'se:* *jas^fli:jah]*

לא-בֶן הַרְשָׁעִים בַּי אֶסְ-פֶּמֶץ אֲשֶׁר-תְּדַפֵּנוּ רֹוחַ:

4

[*לוֹ:-χe:en* *הַכְּרָאָגָגְיָה*:²⁷ *im^hi:* *?im-k^ham'mo:os^f*²⁸ ,*תְּסִירְגָּר*
t^hidda'fe:ennu: *'ru:wah^h*]

[*לוֹ:-χe:en* *הַכְּרָאָגָגְיָה*:²⁷ *kk^hi:* *?im-kk^ham'mo:os^f* ,*תְּסִירְגָּר*
tt^hidda'fe:ennu: *'ru:wah^h*]

עַל-בֶּן | לא-יִקְמוּ רְשָׁעִים בְּמַשְׁפָט וְחֶטְאִים בְּעַדֶּת צדיקים:

5

²⁴ The *shewa* is pronounced half-long due to its being read with *ga'ya*: §I.2.9.

²⁵ The vowel in *עַל-* is read with minor *ga'ya* and so is half-long: §I.2.8.2.2.

²⁶ The major *ga'ya* on the long vowel in the open syllable marks secondary stress: §I.2.8.2.1.

²⁷ The *shewa* on a *resh* after the definite article is vocalic (§I.2.5.7.4.), although by default a *shewa* after a long vowel is silent (§I.2.5.6.).

²⁸ The first element of the composite accent *revia^c mugrash* does not lengthen the short vowel in the first syllable: §I.2.12.

²⁹ The *ḥatef pataḥ* is half-long since it has *ga'ya*: §I.2.9.

[ʃal-'k^he:en lo:-jɔ:'qu:mu: ရာဂ္ဂါး?i:im bammiʃ'p^hɔ:t^h
va:hatt^hc:?'i:im ba:ʃa'ða:aθ s^haddi:'qi:im]

[ʃal-'kk^he:en lo:-jɔ:'qu:mu: ရာဂ္ဂါး?i:im bbammiʃ'pp^hɔ:t^h
va:hatt^hc:?'i:im bba:ʃa'ða:aθ s^haddi:'qi:im]

כִּי־זֶה עֵדָה יְהוָה זֶה רַצְעִים תָּאַבֵּד 6

[k^hi:-jo:'ðe:jaŋ ʔaðo: 'de:ʁɛχ s^haddi:'qi:im va'ðe:ʁɛχ
ရာဂ္ဂါး?i:im t^ho:'ve:eð]

[k^hi:-jo:'ðe:jaŋ ʔaðo: 'dde:ʁɛχ s^haddi:'qi:im va'ðe:ʁɛχ
ရာဂ္ဂါး?i:im tt^ho:'ve:eð]

REFERENCES AND ABBREVIATIONS

ABBREVIATIONS

A = Aleppo Codex

BHQ = *Biblia Hebraica Quinta*

BHS = *Biblia Hebraica Stuttgartensia*, 4th ed.

BL = British Library, London

Bod. = Bodleian Library, University of Oxford

C = The Cairo Codex of the Prophets

CUL = Cambridge University Library

JTS ENA = Jewish Theological Seminary, Elkan Nathan Adler collection

L = Codex Leningradensis, St. Petersburg (Leningrad), National Library of Russia, I Firkovitch Evr. I B 19a

LB = Late Babylonian (vocalization)

LG = Lewis-Gibson Genizah collection, Cambridge University Library

NLR = National Library of Russia, St. Petersburg

MB = Middle Babylonian (vocalization)

OB = Old Babylonian (vocalization)

S = Jerusalem National and University Library, Heb. 24, 5702
(formerly MS Sassoon 507)

T-S = Taylor-Schechter Genizah collection, Cambridge University Library

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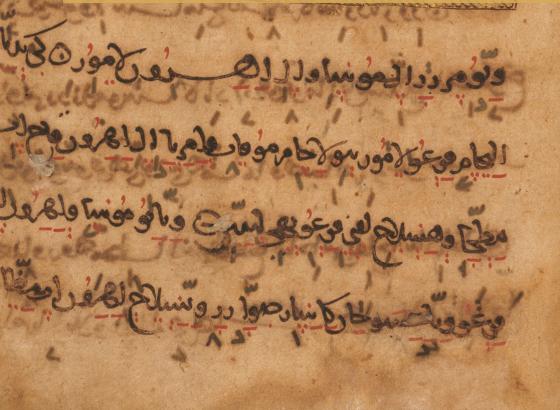
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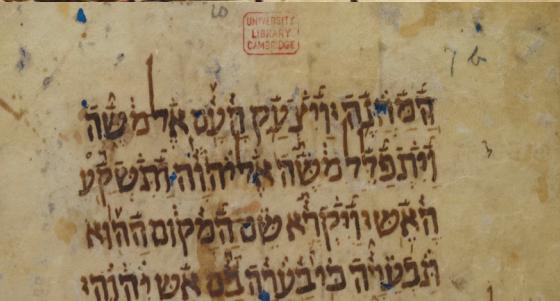
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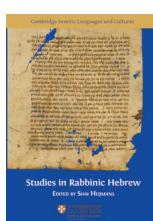
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The Tiberian Pronunciation Tradition of Biblical Hebrew (Vol. I)

Geoffrey Khan

The form of Biblical Hebrew that is presented in printed editions, with vocalization and accent signs, has its origin in medieval manuscripts of the Bible. The vocalization and accent signs are notation systems that were created in Tiberias in the early Islamic period by scholars known as the Tiberian Masoretes, but the oral tradition they represent has roots in antiquity. The grammatical textbooks and reference grammars of Biblical Hebrew in use today are heirs to centuries of tradition of grammatical works on Biblical Hebrew in Europe. The paradox is that this European tradition of Biblical Hebrew grammar did not have direct access to the way the Tiberian Masoretes were pronouncing Biblical Hebrew.

In the last few decades, research of manuscript sources from the medieval Middle East has made it possible to reconstruct with considerable accuracy the pronunciation of the Tiberian Masoretes, which has come to be known as the ‘Tiberian pronunciation tradition’. This book presents the current state of knowledge of the Tiberian pronunciation tradition of Biblical Hebrew and a full edition of one of the key medieval sources, *Hidāyat al-Qāri’* ‘The Guide for the Reader’, by ‘Abū al-Faraj Hārūn. It is hoped that the book will help to break the mould of current grammatical descriptions of Biblical Hebrew and form a bridge between modern traditions of grammar and the school of the Masoretes of Tiberias.

Links and QR codes in the book allow readers to listen to an oral performance of samples of the reconstructed Tiberian pronunciation by Alex Foreman. This is the first time Biblical Hebrew has been recited with the Tiberian pronunciation for a millennium.

As with all Open Book publications, this entire book is available to read for free on the publisher’s website. Printed and digital editions, together with supplementary digital material, can also be found at www.openbookpublishers.com

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