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Masora Figurata Explained: Page Layout, Text Layout and the Selection and Organisation of Masoretic Content in the Ashkenazi Bible British Library, MS Or. 2091[1]

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Summary

This article intends to contribute to a better understanding and appreciation of figurative Masora in medieval Masoretic Bibles by offering a study of the elaborate Masora Figurata of the Ashkenazi Bible British Library, MS Or. 2091. Containing Prophets and Writings without Targum, the Bible dates from the late thirteenth to the early fourteenth century. The Masora Figurata exclusively occurs in the form of delicate ornamental and figurative designs on the thirty opening pages of the Bible books, each of which also contains an embellished initial word. It is shown how exactly masoretic content was selected for and adapted to the ensembles and also what measures the masoretes took to help the reader navigate and comprehend the material. Since the Masora Figurata in this Bible was possibly created by three masoretes, an additional objective will be to distinguish between their hands as clearly as possible. With some patience, the text along the winding paths of the micrography of MS Or. 2091 reveals itself as solid and immediately relevant masoretic information. The masoretes who inscribed it clearly took pride in their work. The figurative Masora of this codex is as such a valuable repository for masoretic material that can be studied in a historical context.

The *Corpus Masoreticum* project in Heidelberg (2018–2030) studies the Masora found in Ashkenazi Bibles produced between the twelfth and fourteenth centuries as well as the interplay between Masora and medieval Jewish exegesis from the same period and region. One of its foci is the Masora Figurata in those manuscripts. Surprisingly little is known about the contents of the Masora Figurata. Thus it is only recently that the carpet pages in the Codex Leningradensis were edited and analysed in their entirety for the first time.[2] The dearth of studies is understandable because of the difficulty in deciphering Masora Figurata. Another reason why the material is routinely ignored appears to be the scholarly consensus that its main function is aesthetic. Colette Sirat suggests that, while its presence matters, Masora Figurata is not supposed to be read.[3] The possibility of it passing on high quality information in certain codices is rarely acknowledged.[4] Judith Olszowy-Schlanger writes:

> *The micrographic masorah took on an aesthetic function rather than that of an aid to the study of the biblical text: the small size of the characters, their varying alignments and the increasing disregard for the correspondence between the biblical text and the masoretic notes show that the masorah was scarcely even understood.*[5]

Her observations may be appropriate in relation to some medieval Bibles, yet they are less so with regard to others. A prime example of a Bible codex with extensive and carefully prepared Masora Figurata is British Library, MS Or. 2091. In this article, my main objective is twofold: first, to demonstrate how masoretic content was selected for and adapted to the ornamental and figurative ensembles and, second, to describe the features of the page and text layout that are there to help the reader navigate and comprehend the material. As such, the article intends to contribute to a better understanding and appreciation of this type of text in medieval Masoretic Bibles. Complicating my analysis is the fact that the Masora Figurata in MS Or. 2091 was possibly created by three different masoretes. An additional objective will therefore be to distinguish between their hands as clearly as possible. My analysis is based on my full edition of the Masora Figurata of MS Or. 2091, which is available via the online platform of the Corpus Masoreticum project, BIMA 2.0 http://bima2.corpusmasoreticum.de/manuscript/British.Library.Or.2091/1r.   Readers are advised to consult the relevant folios on that platform whilst reading this article. The folios of the manuscript can also be viewed at http://www.bl.uk/manuscripts/Viewer.aspx?ref=or_2091_f001r.

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2   Susan L. Schmidt. "The Carpet Illuminations of Codex Leningrad National Library of Russia Ms. Evr. I B 19a" (PhD diss., The University of the Holy Land, Jerusalem, 2019), open access via ProQuest 27827878 https://t1p.de/yd4c.

3   Colette Sirat. *Du scribe au livre: les manuscrits hébreux au Moyen Age* (Paris: CNRS Editions, 1994), 146, 153, 155.

4   E.g. Yosef Ofer, *The Masora on Scripture and Its Methods* (Berlin/Boston: De Gruyter, 2019), 54, 184.

5   Judith Olszowy-Schlanger, "The Hebrew Bible," in *The New Cambridge History of the Bible*, ed. Richard Marsden and E. Ann Matter, 4 vols. (Cambridge: Cambridge University Press, 2012), 2:30–31. See also e.g. Aron Dotan, "Masorah." *Encyclopedia Judaica, Second Edition*, ed. Michael Berenbaum and Fred F. Skolnik (Detroit/New York: Brill, 2007), 13:620b.

1 The Codex

British Library, MS Or. 2091, containing Prophets and Writings without Targum, is a lavish parchment manuscript (424 folios, 340 x 310 mm) most likely produced by a scribe from one of the French- or immediately adjacent German-speaking regions of the Holy Roman Empire toward the end of the thirteenth or beginning of the fourteenth century.[6] It is commonly believed that the volume used to be complemented by a now lost, first volume with the Pentateuch.[7] It is provided with Tiberian vocalisation and accentuation, Masora Parva, linear Masora Magna as well as Masora Figurata. The latter occurs exclusively on the thirty opening pages of the various Bible books.[8] Those pages also contain Masora Parva but no linear Masora Magna. For the rest, the linear Masora Magna is spread evenly throughout the manuscript with consistently two lines in the upper and three in the lower margin. The

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6 I have come to this conclusion on the basis of a careful analysis of the script following a close study of the main works on Hebrew paleography and the secondary sources. Usually the manuscript's script is described not just as Ashkenazic but more specifically as "German" and as belonging to the second half of the thirteenth century. E.g. the online catalogue description of the British Library: "Ashkenazi script, second half of the thirteenth century, place of origin: Germany;" Christian D. Ginsburg, *Introduction to the Massoretico-Critical Edition of the Hebrew Bible*, 2 vols. (London, 1896), 2:663: "German hand *circa* A. D. 1300;" he also considers the spelling ביתאל as being of the German school; George 1_, *Catalogue of the Hebrew and Samaritan Manuscripts in the British Museum*, 4 vols. (London: British Museum, 1899–1935), 1:84 (no. 117): "German hand, probably of the thirteenth century;" Thérèse and Mendel Metzger, *Jewish Life in the Middle Ages: Illuminated Hebrew Manuscripts of the Thirteenth to the Sixteenth Centuries* (New York: Alpine Fine Arts Collection, 1982), 304: "Ashkenazi script; written in Germany in the late 13th century." Sara Offenberg, in "Jacob the Knight in Ezekiel's Chariot: Imagined Identity in a Micrography Decoration of an Ashkenasic Bible," *AJS Review* 40:1 (2016): 3, describes the figure of the eagle with its wings spread on fol. 203r as an iconographical borrowing from the Holy Roman Empire's Eagle. Hanna Liss conjectures that the manuscript might have been produced in France in view of some arguably "French" elements in its decoration programme. Hanna Liss, "Masorah as Counter-Crusade? The Use of Masoretic List Material in MS London, British Library Or. 2091," in *Philology and Aesthetics: Figurative Masora in Western European Manuscripts*, ed. Hanna Liss in collaboration with Jonas Leipziger (Frankfurt am Main: Peter Lang, forthcoming), 137, 140. In a personal communication in response to my research, Judith Olszowy-Schlanger notes some, what are traditionally seen as "French," aspects to the script but assumes the production of the manuscript to have taken place in the Rhine region, South Germany or Switzerland in view of the initial monochrome panels of micrography in a three column large volume.

7 E.g. http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Or_2091 (accessed 02/21); Metzger/Metzger 1982, 304. Although I have not found this stated anywhere explicitly, I suspect the main reason for that belief is the fact that folio 1 is glued to the first quaternion while fol. 1v contains a catchword. Catchwords in this manuscript only occur at the end of quires. Thus the most likely scenario is that a complete Bible originally existed in one volume, which then got separated into two tomes at the time of binding of the present codex in the sixteenth century, if not earlier. The binding is dated 1524.

8 Joshua (1r), Judges (20r), Samuel (38v), Kings (84r), Jeremiah (132r), Isaiah (172v), Ezekiel (203r), Hosea (239r), Joel (243v), Amos (245r), Obadiah (249v), Jonah (250r), Micah (251r), Nahum (254r), Habakkuk (255r), Zephaniah (256v), Haggai (258r), Zechariah (259v), Malachi (265v), Ruth (268r), Psalms (270v), Job (309r), Proverbs (324r), Song of Songs (335v), Ecclesiastes (338r), Lamentations (343r), Esther (345v), Daniel (352r), Ezra/Nehemiah (363r), Chronicles (380v). The colours green and purple in this article refer to the pages with Masora Figurata that were supposedly created by "Hand 2" and "Hand 3" respectively. The neutral black is reserved for "Hand 1." See the next section for an overview.

Masora Figurata is rendered in the form of intricate ornamental and figurative designs, of which the underdrawings were most likely produced by one and the same artist in the entire codex. Several scribes collaborated on the Bible, one of whom might have been the person responsible for the underdrawings. A primary scribe copied the consonantal biblical main text. Most likely three *masranim* created the Masora Figurata, one of whom could in principle have been the primary scribe and/or the artist. Another *masran* took care of the Masora Parva and linear Masora Magna together with the vocalisation and accentuation of the consonantal biblical main text as well as the correction of the latter throughout the manuscript, including on the pages with Masora Figurata. Thus the writing and decorating of the codex was the result of a collaboration between a minimum of four people. Regarding the general *mise-en-page* of the biblical main text and the micrographic ensembles, it can be observed that throughout the manuscript the lower margin is double the size of the upper one, occupying about 27% as compared to 14% of the total available space on average, leaving plenty of space for Masora. Each opening of a Bible book contains three columns and twenty-seven lines with the biblical main text with the exception of Joshua (fol. 1r, 20 lines), Ruth (268r, 21 lines) and Daniel (352r, 16 lines), where the text minus the initial word starts lower on the page. All the opening pages comprise at least two micrographic ensembles, one at the top and one at the bottom, both spanning the full width of the written lines, the latter mostly being the larger one. Each page also includes an initial word executed in large, adorned letters. Overall the number of micrographic designs per page depends on whether or not a page contains only the start of a Bible book or also the end of the previous one. In the latter case there are usually three, namely the two aforementioned ones plus an extra one embellishing the initial word.[9] Wherever an initial word spans two columns, it is fully surrounded by the third masoretic micrography.[10] In other cases, a micrographic real or fictional animal has been put immediately above an otherwise free-standing initial word, both having the width of just one column.[11]

A few opening pages are worth highlighting. First of all, six Bible books start on a fresh recto, including Joshua (1r) at the start of Former Prophets, Jeremiah (132r) heading Major Prophets, the first Minor Prophet Hosea (239r) and Ruth (268r) at the beginning of Writings.[12] Obadiah (249v) starts on a new page by coincidence. However, Daniel (352r) is

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9   The exceptions are 20r (Judges), where the space around the initial word has not been embellished due to lack of space, 84r (Kings), where one micrography above and one beneath the initial word complement one another, resulting in four micrographic designs per page in total, similarly 268r (Ruth), where the initial word is flanked by two stand-alone masoretic beasts, and 203r (Ezekiel), which contains a masoretic micrography at the end of Isaiah due to some space being available there.

10   With the exception of 84r (see previous note).

11   On fol. 256v (Zeph) the one column wide initial word happens to be enclosed by a vegetal micrographic ornament.

12   Jeremiah also starts on a new quire. On the preceding three fols. 130v–131v the main text from the end of Kings is decoratively shaped. Something similar happens on fol. 238v before Hosea and on fols. 267r–v preceding Ruth. The opening page of Ruth is unusual in that the initial word is flanked by a griffon on the left and a lion on the right. The visual effect of the opening page is, however, very similar to that of Joshua (1r) and Daniel (352r), whereby at the top of the page an initial word is surrounded on three sides by micrography across the full width of the written text.

interesting. It has one of the lushest opening pages of the codex with at the top a very large micrography surrounding the initial word on three sides. Here we find two towers held up by two lions and connected by an arch topped by a fleur-de-lis, in reference to the Davidic line and Jerusalem.[13] The fact that Daniel has been deliberately begun on a new recto suggests special attention was given to the book in this codex.[14] A second remarkable opening, where the Masora Figurata was created by the same hand as the one relating to Daniel, is that of Ezekiel (203r). Hanna Liss studied its striking iconography for the first time in connection with the micrography-creating masoretic text, uncovering meaningful links between text and image.[15] On 203r we are twice presented with the four living creatures from the vision of the Tetramorph described in Ezekiel 1 and 10, whereby "man" is depicted as a knight in full armour. Connecting the decoration programme as a whole with mystical notions, Liss also draws our attention to the head of a stork and the unique occurrence in the codex of a micrographic design at the end of a Bible book. The latter shows a face with four wings immediately beneath the Tetragrammaton that is the last word of Isaiah.[16] It is clear that considerable thinking and advance planning went into the folio.

In general, the decoration programme involves complex interlace as well as simpler geometrical shapes with vegetal motifs. A majority of patterns include animal shapes: most frequent are bird's heads and birds, dragon's heads and dragons as well as lions and a lion's head. Then there are a couple of eagles, an ox's head and an ox, four storks and a stork's head, a billy goat and a unicorn. The animal theme is continued in stand-alone micrographic designs in the shape of birds, a lion, a billy goat, a unicorn, a griffon and a couple of what looks like a crossing between a bird and a fish. Another theme that can be recognised in a few patterns is architecture: we find a row of columns with capitals and bases connected by arches, a line of interconnected towers looking like the battlements of a castle and two towers with a joining arch. Notable inside the geometrical patterns are also some *fleurs-de-lis*, a knight's head with helmet and visor as well as a knight with helmet and visor in full armour. Finally, there is the mysterious stand-alone face with four wings at the end of Isaiah.[17]

13   The *fleur-de-lis* figures prominently on the opening page of Psalms (270v). For architectural elements elsewhere see 268r and 343r.

14   Comparable to the end of Kings, the text on the three final pages of Esther (350v–351v) is laid out in a decoratively shaped single column. Cf. Rahel Fronda, "Micrographic Illustrations in a Group of Thirteenth-Century Hebrew Bibles from Germany." *KUSATU* 21 (2016): 53.

15   Liss 2021, 131–75 and Hanna Liss, "Negation Oder Transformation? Illustrative Auflösung Masoretischer Listen in Einem Mittelalterlichen Hebräischen Manuskript," *in Dynamiken der Negation. (Nicht) Wissen und negativer Transfer in vormodernen Kulturen*, ed. Şirin Dadaş and Christian Vogel, (Wiesbaden: Harrassowitz Verlag, 2021), 313–30. See also Offenberg 216, 1–16.a

16   I.e. the last word of Isa 66:23, which is repeated after Isa 66:24 in conformance with customary liturgical practice.

17   Here is the same evidence but this time with page numbers: inside patterns: (1) bird's heads (20r, 38v, 245r, 259v, 270v, 335v, 338r) and birds (84r, 239r, 245r, 259v, 338r), (2) dragon's heads (265v?) and dragons (132r, 254r, 256v, 268r, 309r, 324r, 380v), (3) lions (203r, 268r, 309r, 352r) and a lion's head (203r), (4) two eagles (203r), (5) an ox's head (203r) and an ox (203r),(6) storks (338r) and a stork's head (203r), (7) a billy goat (268r) and (8) a unicorn (268r), (9) a row of columns with capitals and bases connected by arches (268r), (10) a line of interconnected towers looking like the battlements of a castle (343r), (11) two towers with a joining arch (352r), (12) a knight's head with helmet and visor plus a knight with helmet and visor

What is particularly striking as regards this overview is the fact that the pages that are most richly and diversely decorated with figurative shapes were written by the most recognisable hand among the creators of the Masora Figurata of MS Or. 2091, namely "green" hand 2. I already used the opening pages of Ezekiel (203r) and Daniel (352r) as examples above, but equally rich in imagery is the opening page of Ruth (268r), while the opening pages of Micah (251r) and Psalms (270v) are worth a special mention too. However, the evocative storks and other underdrawings on the opening page of Ecclesiastes (338r) were most likely covered with masoretic micrography by "black" hand 1. The above leads me to speculate whether masorete 2 might also have been responsible for the underdrawings.

When reflecting on the division of tasks between the primary scribe and the creator of the underdrawings, it becomes apparent that the former decided on the size and location of the initial words, usually leaving more blank space above them than beneath. As a rule of thumb, he used just one column for an initial word if it was small enough like דבר, ויהי and חזון, making an exception for the first word of the Former Prophets, Ezekiel, Isaiah and Esther, but two for words with more or chunkier letters like the *Shin*. Why he reserved the most space in this codex for the top micrographic design with initial word on the opening page of Daniel is anyone's guess, but he might have done so at the request of the patron or artist-masorete 2 conjectured here. Overall, however, I believe the artist simply tailored the underdrawings for the Masora Figurata to the blank space left by the main scribe, making the most of it. Cases in point are his graceful use of the curve of the backs of two lions to flank the written text on the opening page of Job and his similarly splendid use of space on fol. 380v (Chronicles).[18] I would not be surprised if artist-masorete 2 had been the conceptual mastermind behind the drawings, only filling those with Masora that mattered most to him or the patron of the manuscript, leaving the rest of the work on the Masora Figurata to two of his colleagues.

in full armour (203r), (13) *fleurs-de-lis* (270v, 352r); as stand-alone micrographic designs: birds (38v, 250r), two bird-fishes? (251r), a billy goat (251r), a lion (268r), a unicorn (243r), a griffon (268r), and a face with four wings (203r).

18   Compare also how the neck of a unicorn and a bird suit the shape of the text on respectively fols. 243v (Joel) and 250r (Jonah). It is not immediately clear why on 239r (Hosea) the main scribe put the initial word slightly lower on the page (see also the opening pages of Obadiah and Nahum in this respect), but the artist playfully filled the blank space with a bird flying down.

2 The Three Hands of the Masora Figurata

The detailed description of various aspects of the page and text layout of the Masora Figurata in MS Or. 2091 through the course of this article helps us distinguish between probably three hands due to variations found from folio to folio. Undoubtedly the easiest to identify is the Masora Figurata created by "green" hand 2. In the course of this article it will become clear why. It is harder to decide which pages to set aside as "purple" hand 3, but some of the features found on those pages do not seem to fit sufficiently those of "black" hand 1 to warrant their inclusion under it. The table below should therefore be used with caution.

No.	Hand 1	Hand 2	Hand 3
1	1r Joshua	20r Judges	38v Samuel
2	132r Jeremiah	84r Kings	239r Hosea
3	256v Zephaniah	172v Isaiah	243v Joel
4	258r Haggai	203r Ezekiel	245r Amos
5	259v Zechariah	251r Micah	249v Obadiah
6	265v Malachi	255r Habakkuk	250r Jonah
7	309r Job	268r Ruth	254r Nahum
8	324r Proverbs	270v Psalms	343r Lamentations
9	335v Song of Songs	352r Daniel	
10	338r Ecclesiastes		
11	345v Esther		
12	363r Ezra/Nehemiah		
13	380v Chronicles		

3 The Masoretic Contents of the Masora Figurata: Nature, Scope and Organisation

A general distinction can be made between enumerative and accumulative Masora. Masoretic notes of the first type have the simple format "word(s) x occur y times in (part z of) the Bible." Accumulative Masora lists biblical material with a common characteristic, e.g. words displaying, each in their own way, a certain unique or rare phenomenon. With a few exceptions, extant Ashkenazi masoretic Bible codices do not comprise appendices with longer enumerative and accumulative masoretic notes, as known from, for instance, Sephardi Bibles. The locus for more extensive masoretic list material, such as known from the *Sefer Okhla ve-Okhla*, in MS Or. 2091 and similar medieval Ashkenazi Bibles is precisely the Masora Figurata; however, this does not mean that shorter enumerative masoretic notes

did not find their way into the Masora Figurata too. *Sefer Okhla ve-Okhla* is an extensive medieval collection of accumulative Masora. Going back on older antecedents, today it is only preserved, apart from the odd fragment, in the form of two Ashkenazi recensions which show a great deal of overlap but also differ in form and contents – manuscripts Paris, BnF, hébr. 148, published by Solomon Frensdorff in 1864 (hereafter *Okhla*[P]), and Halle, Universitätsbibliothek, Yb 4o10, of which the first and second part were published by respectively Fernando Díaz Esteban (1975) (*Okhla*[H]) and Bruno Ognibeni (1995) (Okhla[H2]).[19] Its title refers to the first word pair of the first masoretic list of the book, which is an alphabetical overview of words that occur once with and once without preceding Vāv in the Bible – the unique biblical items אָכְלָה from 1 Sam 1:9 ("eating") and וְאָכְלָה from Gen 27:19 ("and eat!"). *Okhla*[H] is commonly believed to be younger than *Okhla*[P]; importantly, *Okhla*[P] shows substantially more editorial intervention from the compiler(s). Opinions vary as to their most likely times of compilation, with suggested dates ranging from the twelfth to the fourteenth (H) and up to as late as the fifteenth century (P).[20] The lack of scholarly consensus should be kept in mind when considering the relation between material in *Okhla*[H], *Okhla*[P] and individual Ashkenazi Bible codices. *Okhla* lists can be very long and may contain hundreds of items.

What kind of material do we find in the Masora Figurata of MS Or. 2091? The majority belongs to lists that are also found in one or both recensions of *Okhla*[H] and *Okhla*[P]; about thirteen masoretic lists contain "*Okhla*-like" material. Then there are the enumerative masoretic notes, which are usually also known from Oriental manuscripts (yet variations occur). The manuscript has a substantial number of those in common with *Okhla*[H2].[21] Finally, some Aramaic mnemonics can be distinguished. Appendices 1–4 below unlock the *Okhla* and *Okhla*-like material as well as the Aramaic mnemonics found in MS Or. 2091. Here, I will focus on an analysis of the organisational and other aspects of mainly the accumulative *Okhla* and *Okhla*-like masoretic list material in MS Or. 2091 (leaving *Okhla*[H2] mostly aside), using a kind of "check-list" style in order to facilitate the future comparison of this codex with other masoretic Bibles. Sometimes a cluster of features is discussed together to help the flow of argument. In the following, CBMT refers to the consonantal biblical main text, MT (Masoretic Text) to the biblical main text including vowels and accents, Mp to Masora Parva, Mfig to Masora Figurata and mn to masoretic note. I use *in situ* link or *in situ* link verse or word(s) to refer to that part of the biblical main text which forms the *raison d'etre* of the masoretic note on the page and which is usually listed as a biblical item in the note. I prefer referring to biblical references or items and sometimes simanim rather than "lemmata" for the verses listed in masoretic notes. I use "catchword" or "most relevant

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19   Sebastian Seemann has re-edited *Okhla*[P]. The edition is awaiting publication as part of his PhD project. It is already found in BIMA 2.0 (but not yet in the public domain).

20   Sebastian Seemann, "The Okhla Lists in MS Berlin Or. Fol. 1213 (Erfurt 3)," in *Philology and Aesthetics. Figurative Masorah in Western European Manuscripts*, ed. Hanna Liss in collaboration with Jonas Leipziger (Frankfurt am Main: Peter Lang, 2021).

21   Moreover, on a number of occasions we come across short masoretic notes, which also occur as a unit inside a larger *Okhla* list, e.g. on fol. 254r we find masoretic note 6 "על פה and אל פה both occur twice," which is also the first group of four verses in *Okhla*[P] 88. The masoretic notes are numbered in order of their occurrence on the page. The same numbers have been used in the online edition.

word(s)" to refer to that part of a verse that displays the phenomenon that is in focus in the masoretic note. In alphabetical lists it is usually mentioned first after which (part of) the biblical verse is quoted in which the catchword might return another time.

Feature 1:	The Mfig contains about 207 masoretic notes in total, of which 59 accumulative Okhla lists (H/P; 52 excluding repeats), about 13 accumulative Okhla-like lists and 31 enumerative Okhla lists (H2; 30 excluding repeats), together covering the majority of the material especially due to the length of the accumulative Okhla lists.
Feature 2:	Sometimes the information in the Mfig does not match the CBMT reading and/or the Mp on the page. The masoretes of the Mfig let discrepancies between the Mfig and the CBMT exist side by side, as opposed to the *naqdan-masran* of the manuscript, who frequently deleted letters and introduced small superscript letters in the CBMT, bringing MT and Mp into line with one another.

Characteristic of this manuscript and of Ashkenazi Masoretic Bibles in general is the fact that the CBMT is frequently altered through the unobtrusive deletion of letters and the addition of smaller superscript letters. The person to have done so in MS Or. 2091 is the masorete who added the vowels, accents, Masora Parva, linear Masora Magna and corrections to the CBMT.[22] The table below lists all those cases on the thirty openings of Bible books where the revised version of the CBMT is accompanied by an Mp and in relation to which there is sometimes also an Mfig note.[23] Firstly, we see that superscript Vāvs with Shvā are always vocalised (nos. 1, 3, 6, 11 in the table below). When it comes to superscript Vāvs with other vowels, the words are unexpectedly vocalised as if the superscript letter were not there (2, 4, 16, 18).[24] But if we look at the deleted letters, we notice that those letters also remain unvocalised (esp. 8, 9, 10, 12, 13, 15, 19). The most common way of deleting letters is with a comma-like pen stroke inside a single letter (for exceptions see 7, 9). Secondly, we observe that the Mp always agrees with the altered version of the CBMT (and, when present, so does the Mfig, which usually comments on the same phenomenon). There should therefore be no doubt that the naqdan-masran played a crucial role in shaping the transmission of the Bible text in this codex. In comparison, whenever there is a mismatch between the MT and the Mfig, it is clear that none of the masoretes of the Mfig touched the CBMT itself. Rather, they let the discrepancies exist side by side. This is particularly obvious in those cases where an Mp is absent. A case in point is the word מעשה in Jer 1:16 on 132r (without Mp). The Mfig to the word lists the eleven times the word מעשי (!) is spelled with י in the Bible, including the link verse (B19a also reads מעשי). This pattern repeats itself

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22 Overall, the *naqdan-masran* used various techniques to introduce corrections and changes to the CBMT. It would lead too far to describe those in the present article.

23 Many more alterations to the CBMT occur throughout the manuscript.

24 Compare the mixed case example on fol. 15r Josh 19:34 BHS בִזְבֻלוּן where one would have expected a *qibbuts* underneath the ב in view of the deleted ו but instead there appears one after it under the ל. The vocalised ל is then followed by an equally vocalised superscript Vāv, in variation of what we find in no. 2 of the table below.

several times in the manuscript.[25] The only case where one could potentially argue that the change in the CBMT was introduced by hand 3 is on 254r, where the ו before חסד has been deleted without an Mp being present, while the Okhla list (H 31/P 30) surveys "the word combinations without preceding ו where one could be misled to think there should be one" in relation to the in situ link (cf. fig. 1).

However, more likely the naqdan-masran was also responsible for the deletion of this un-vocalised ו.[26]
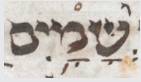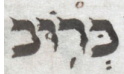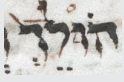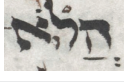

Figure 1

	Fol. and verse	Image	Transcription	BHS	Type of masoretic note[27]
1	1r Josh 1:7		ולעשות	לעשות	Mp
2	20r Josh 24:31		יהושוע	יהושע	Mp Mfig
3	132r Jer 1:5		אצורך	אצורך אצרך קֿ	Mp
4	172r Jer 52:23 172v		רוחה	רוחה	Mp Mfig
5	172v Jer 52:33		חייו	חייו	Mp
6	250r Jon 1:9		ואת	ואת	Mp (6 times יי ואת) Mfig (7 verses ואת את ואת)

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25 Similar cases where the Mp is missing and the MT disagrees with the Mfig are: (1) 132r Jer 1:8 CBMT להצילך, Mfig & BHS להצלך; (2) 172v Jer 52:29 CBMT שמנה, Mfig & BHS שמונה; (3) Jer 52:31 CBMT מלכותו, Mfig & BHS מלכתו, (4) 250r Jon 1:7 CBMT ויפילו, Mfig & BHS ויפלו, (5) 255r Nah 3:10 CBMT לגולה, Mfig & BHS לגלה, (6) 380v 1 Chron 1:7, 8 CBMT ותרשיש, Mfig & BHS ותרשישה and ופוט, and ובני חם בני חם and פוט. A slightly more complicated case occurs in relation to the Mfig "words uniquely plene with ו" cases (Okhla-like list) on 254r with link verses Nah 1:2, 4, where the CBMT reads גער and ונקם, the Mfig ונקם and גוער and BHS נקם and גוער. Mps are missing. Again the Mfig masorete does not interfere with the CBMT itself.

26 I.e. the possibility is insignificant in view of the abundance of changes to the CBMT introduced by the *naqdan-masran* throughout the codex.

27 The masoretic notes match the transcriptions. Whenever an Mp and Mfig are mentioned, they comment on the same phenomenon unless indicated otherwise.

	Fol. and verse	Image	Transcription	BHS	Type of masoretic note[27]
7	251r Jon 4:10		שבן ... ובן	שבן ... ובן	Mp28
8	254r Nah 1:7		ויודע	וידע	Mp Mfig
9	255r Zeph 1:4		את	--	Mp
10	270v Ps 1:5		יקומו	יקמו	Mp חס̇ ז̇ Mfig חס̇ ו̇
11	309r Ps 148:13		ושמים	ושמים	Mp
12	309r Ps 150:2		כרוב	כרב	Mp[29]
13	309r Ps 150:4		ומחול	ומחול	Mp
14	338r Song 8:11		יביא	יבא	Mp חס̇ ה̇ Mfig occurs 13 times (defective + plene)
15	338r Eccl 1:4		הולך	הלך	Mp Mfig
16	343r Lam 1:6		רודף	רודף	Mp
17	345v Lam 5:7		ואנחנו	אנחנו	Mp כת̇ אנחנו Here the naqdan-masran for once vocalises the letter that is to be deleted, but then uses the Mp to set the record straight.
18	380v Neh 13:26		הלוא	הלוא	Mp Mfig
19	380v Neh 13:27		לעשות	לעשת	Mp Mfig

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28 Twice the Mp 'ד does not make any sense though.

29 "Three times" compared to "five times" in BHS. Both Mps do not immediately make sense.

Feature 3:   Nearly all Mfig notes are found *in situ*. In nine cases the link word(s) occur(s) on either the previous or the next page; eight of those were added by "green" hand 2.

In MS Or. 2091 there are about 207 different Mfig notes in total, averaging at 7 per opening page. The vast majority of those masoretic notes have a clear reason to be there: they comment on features of the biblical main text found on that very page.[30] Often there is also a parva note, usually commenting on the same phenomenon. A case in point is the word שׁד in Hos 2:8, which belongs to an incomplete alphabetical list of unique words consisting of two letters (Hosea opening page 239r). In five cases, however, the biblical (slightly less) *in situ* link is rather found on the next page and in four cases on the previous page. That is less than 5% of all Mfig notes. The pattern is as follows:

84r	2/9 (i.e. 2 out of in total 9 Mfig notes on the page comment on a feature relating to a word or word combination found on the next page)
172v	5/11
243v	1/11
255r	1/8

We see that the occasional phenomenon of an *in situ* link being located on a previous or next page occurs on Bible book openings with an above average number of Mfig notes and is strongly associated with "green" hand 2. One Mfig note on the opening page of Jeremiah does not contain a relevant link verse but relates to the Book of Jeremiah in general, so that it is still relatively appropriate for it to occur at that location (132r mn6).[31] One more Mfig note does not have an immediate *in situ* link either (239r mn4). All in all, however, it is easy to establish the *raison d'etre* of the masoretic material on the thirty opening pages. It has certainly not been chosen randomly or carelessly.[32]

Feature 4:   The Mfig notes have a clear beginning, with the headers of masoretic notes always being present.

The Mfig notes have a clear beginning with the headers of masoretic notes basically always being present. On two pages, where the Mfig was created by hand 2 (20r, 270v), the masoretic notes are presented in a chaotic manner, which is uncharacteristic for the rest of the manuscript. However, all the headers are in principle there, but several chunks of masoretic notes are shuffled for some reason.

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30   In a small number of cases the *in situ* link does not occur in the masoretic note, because it represents a common case instead of an exception. E.g. in masoretic note 6 "הוליד is spelled plene with twelve exceptions" on 270v the two *in situ* link verses are Ruth 4:21–22, where the word is spelled plene. The masoretic note lists the exceptions.

31   The masoretic notes are numbered in order of their occurrence on the page. The same numbers have been used in the online edition.

32   See also Hanna Liss. "Masorah Re-Arranged: Eight Masoretic Lists in MS London Oriental 2091, Fol. 335v," *CMWP* 1 (2022): 21.

Features 5–7:

Feature 5:	Most masoretic notes are complete or nearly complete. "Green" hand 2 has the smallest ratio of complete or nearly complete masoretic notes among the three masoretes.
Feature 6:	Incomplete *Okhla* lists are either (1) at the end, (2) because they offer an alternative alphabetical list א–ת containing only a sub-section with just one, two or a few items per letter of the alphabet, compared to a much longer list in *Okhla*[H/P], or (3) both. A few incomplete, chaotic *Okhla* lists lack items in different places.
Feature 7:	In incomplete *Okhla* lists, the *in situ* link verse is usually included among the biblical items on the list; it is missing in less than a fifth of the cases, a phenomenon which is spread over the three hands.

Enumerative masoretic notes, including those also found in *Okhla*[H2], are usually complete or nearly complete.[33] The matter of comprehensiveness or lack thereof in *Okhla* lists is worth looking at in some depth. Appendix 1 below surveys the situation in detail, albeit not per opening page, as the table follows the order of appearance of the various lists in *Okhla*[H] and *Okhla*[P]. We obtain the following statistics as regards the in total fifty-nine *Okhla* lists in MS Or. 2091 (representing fifty-two *Okhla* lists in H/P due to repetitions):

State of comprehensiveness	Amount	Amount per hand			In situ link word(s) not included in the body of the list	Amount per hand		
Complete	31	19	3	9	n.a.			
Nearly complete[34]	7	4		3	0			
Incomplete at the end[35]	13	5	6	2	4	1	2	1
Incomplete due to smaller alphabet selection[36]	4	2	1	1	0			
Incomplete other cases[37]	4	1	2	1	1		1	
Total	**59**	**31**	**12**	**16**	**5**			

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33   Among the non-*Okhla*[H2] enumerative masoretic notes, the following masoretic notes are nearly complete/incomplete: 20r mn7 with 9 out of 11 items; 84r mn2 6/7, mn5 7/8, mn6 4/5; 132r mn3 3/7; 203r mn1 8/9, mn4 14/16; 243v mn2 2/3, mn5 8/9; 250r mn6 7/8; 255r mn1 34/35, mn6 4/6; 265v mn2 38/39, mn6 7/12; 268r mn1 4/5; 270v mn5 7/10. Appendix 2 as regards *Okhla*[H2] enumerative masoretic notes shows a similar pattern. Nearly complete/incomplete are: 1r mn8 2/3, 84r mn1 26/36, 255r mn7 40/46, 258r mn1 30/31, 265v mn1 67/68, 270v mn3 19/20. Note the preponderance of hand 2 and of cases where just one item is missing. Biblical item(s) can be lacking at any point in the mns; sometimes mns are incomplete at the end (this is clear due to a number of ordering principles that are recognisable in the mns, such as according to a certain sequence of Bible books).

34   Two of these are enumerative: 132r mn5 10/11, 254r mn1 30/31.

35   268r mn8 43/126–139 items (*Okhla*[H] 20/*Okhla*[P] 19, hereafter H and P): this alphabetical list also jumps back and forth between the letters א–ה, ל–י and ע. More precisely, the *in situ* link verse(s) are missing on 335v mn2 (H 68/P 67) (but *in situ* link word mentioned in the header), 172v mn1 (H 60/P 59) (also no *in situ* link word in the header where this would have fit), 270v mn2 (H/P 2) despite the fact this would have fit (also no *in situ* link word in the header, where this would have fit) and 239r mn5 (H 164; also no *in situ* link verse in the header due to the type of masoretic note).

36   See 132r mn1 (H 69/P 68), 245r mn2 (H 59/P 58; moreover incomplete at the end), 256v mn1 (H 59/P 58), 268r mn6 (H 59/P 58)

37   256v mn3 8/21 word pairs (H 56/P 55), jumbled list with mostly only catchwords, *in situ* link word mentioned in the header but *in situ* link verse not included in the list; 172v mn11 22/34, ordering principle list not immediately clear (H 166); 270v mn1 (H 3): chaotic list with repetitions and a lot of jumping around in the alphabet.

In MS Or. 2091 complete *Okhla* lists tend to contain no more than thirty biblical items, word pairs or word groups.[38] "Black" hand 1 shows a preference for complete or nearly complete *Okhla* lists in contrast to "green" hand 2, where the reverse is the case. However, the phenomenon of incomplete lists can in principle be associated with all three hands. Less than one in five incomplete *Okhla* lists does not include the *in situ* link verse among the biblical items. This happens especially when the *in situ* link word is further down the alphabetical list. In the relevant *Okhla* lists on 172v (*Okhla*[H] 60, hereafter H), 270v (H 2) and 335v (H 68), the link words are respectively טריה & תכו ,ציון and ישקני (ש being the alphabetically relevant letter in a list of unique words starting with י). In all three cases the lists could in principle have continued in the middle micrographic design, not least on 270v and 335v where the masoretes had nearly reached the end of the list. Nevertheless, they decided against it. In contrast to 270v, "black" hand 1 mentions the *in situ* link word at least in the header on 335v, as is the custom in a large number of alphabetical *Okhla* lists in MS Or. 2091 (see the next feature). It makes more sense (to the modern reader!) that the link verse is not reached in the relevant list on 239r (H 164), since the masorete had also reached the end of the page.[39] So, why is it that *Okhla* lists are not necessarily recorded in their totality and what organisational principles, if any, can we discover in their presentation to the reader?

Feature 8:	The *in situ* link word(s) is/are mentioned as the first word(s) of the header in a large number of alphabetical Okhla lists. Of the three hands, "green" hand 2 uses the technique the least, i.e. in about two thirds of relevant cases.

Alphabetical Okhla lists often assume the pattern "word (combination) x is one of (חד מן) y cases with phenomenon z" in MS Or. 2091, whereby the word (combination) placed at the front of the header is the *in situ* link. In the previous section I already referred to the following example (335v):

ישקני חד מן א׳ב׳ מן י׳א׳ בריש תיבות׳	ישקני (in Song 1:2) belongs to an alphabetical list of unique words starting with י

This is a simple but extremely effective method of adapting a generic alphabetical masoretic list (also found in H 68) to suit the precise environment of the Bible page. By placing the relevant in situ link word(s) at the front, the list's relation with and relevance for the correct transmission of the biblical main text on the page is immediately clear to the reader. The method is not always used; a cursory glance suggests that "purple" hand 3 uses it whenever possible, "black" hand 1 does so in the great majority of cases, while "green" hand 2 does not use the technique in about a third of the cases (instead merely starting with e.g. אלפא ביתא).[40]

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38 An example of a masoretic note consisting of groups of three related biblical items ("word groups") is an *Okhla* list with words that occur thrice, twice without and once with preceding ו.

39 I.e. in the top pattern; regarding the general reading direction bottom to (middle to) top in MS Or. 2091 see feature 19 below.

40 On the other hand, the latter masorete uses חד מן in seven simple enumerative masoretic notes on 20r. Note also the extra emphasis on the *in situ* link verse in 203r mn5 (H 120): the *in situ* word וידו (Ezek 1:8) is placed at the front of the header, after which the link verse is mentioned as the first item in the list and

In the cases where two in situ link word(s) and/or verses are found on the page, either only one is mentioned in the header, or none.[41]

| Feature 9: | Like in *Okhla*[H] and *Okhla*[P], in numerous lists the catchwords of the various biblical items, word pairs or word groups are placed at the front of the Bible quotation, after which they may or may not be repeated in it another time. |

Bible quotations usually consist of the first words of the verse, though other parts or even the full verse can be quoted as well. The most relevant word(s) of the verse is/are then placed at the front, often in an alphabetical order.[42] This is an example of the first word pair of the first masoretic note on 363r (H/P 4):

Job 34:7	כאיוב , מי גבר כאויב ישתה
Job 32:2	באיוב , ויחר אף אליהוא בן ברכאל

| Feature 10: | Sometimes a list or part of a list consists of catchwords only. This strategy allows the masorete to include as much information as possible, especially towards the end of an *Okhla* list. |

There are relatively few instances of lists or parts of lists where only catchwords are mentioned without further biblical quotation in MS Or. 2091.[43] This makes the identification of Bible verses in the Mfigs on the whole a straightforward process in the codex. To illustrate the phenomenon, we can compare the only three opening pages in MS Or. 2091 that contain just one *Okhla* list, allowing us at the same time to examine their level of comprehensiveness: Obadiah 249v (H 20/P 19), Zechariah 259v (H 14/P 13) and Daniel 352r (H 19/P 18). The first one concerns an alphabetical list of unique words beginning with כ, without the total number of biblical items being specified in its header. What is meant by "alphabetical" in *Okhla* lists in general is that the items are grouped per letter of the alphabet. Once we are at the level of the same letter, the order is usually no longer strictly alphabetical like in a modern dictionary. In this case e.g. we have to look at the second letter of the catchwords, finding the sequence כגבור, כגפן, כגאון, כגוי in relation to the letter ג. With 124 items as compared to 126 (H) and 139 (P), the "intention" of the list is to be complete: all letters of the alphabet are represented and towards the end of the letter פ, the masorete only includes the catchwords without further Bible quotation in order to squeeze all the material onto the page. As a way of achieving this, he even adds a couple of extra lines at the bottom of the page that do not belong to the Mfig decorations themselves, which is unique in the MS Or. 2091. Overall, this is an unusual way of proceeding in the

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then another time later on in the list as the first of two items from Ezekiel. This is followed by a little חד מן mistake in the header of the next related masoretic note (וחלופיהון; H 121).

41 One: 245r mn2 (H 58/P 59), mn3 (H/P 5); none: 251r mn2 (H/P 3), 380v mn3 (H/P 7). Cf. 249v mn1 (H 20/P 19).

42 352r mn1 H 19/P 18 is a rare example of a relatively chaotic list where this ordering principle can only be observed to an extent.

43 See 245r mn3, 249v mn1, 254r mn3, 259v mn1, 268r mn8, 270v mn2, 335v mn8, 338r mn5, 380v mn1

codex. The second case only covers letters א to מ of an alphabetical list, despite the entire page being covered with it. There is simply not enough space to accommodate the full list. Here the masorete moves to recording catchwords only from the letter ל. The third covers letters ל–ש of an alphabetical list of unique words starting with ומ- as compared to ל–ת in H and א–ת in P. This happens in a surprisingly chaotic order. While we can speculate why both *Okhla*[H] and our manuscript only cover the second half of the alphabet, the list in MS Or. 2091 lacks nine to ten items beginning with ומת- at the end. It therefore very nearly reaches the end, but no effort has been made to ensure those last ones also fit on the page, such as by means of catchwords. In all three examples the *in situ* link words are quoted in the header, as well as included as a biblical item in the list.

> Feature 11:   Whenever a cluster of related phenomena is presented of which each phenomenon relates to the entire Bible, the most relevant part of that cluster, containing the *in situ* link verse, is recorded first.

This technique is used thrice by "black" hand 1 in MS Or. 2091. On 1r, Josh 1:4 functions as the *in situ* link verse for the related Okhla lists P 322 (fourteen verses with ועד ועד in the Bible), P 323 (seventeen verses with עד ועד) and P 321 (three verses with ועד עד), while strictly speaking only the first list with ועד ועד verses applies to it. A detail is that the last two lists start with וחילופיהון "and the reverse ...," whereas in the immediate context of the codex, the word only fits the third list. Similarly on 256v, Hab 3:17 functions as the *in situ* link verse for P 328 (13x ואין ואין, Hab 3:17 being among them), P 325 (10x אין ואין) and P 326–7 (16x אין אין plus 2x at beginning verse). On 258r (H2 13 B), the first header of masoretic note one reads "the word עשה occurs twenty-two times with *segol*" (עשה כ'ב' פתחין), after which the list includes the *in situ* link verse Zeph 3:19. Hereafter follow the one case of העשה with *tsere* and then the eight times עשה with *tsere* found in the Bible. At the very end we find, curiously, the long title that would have fit immediately at the beginning instead of the short header (22x etc.).

> Feature 12:   In extensive masoretic notes that contain several sub-headers dealing with the various Bible books, the part of the list containing the *in situ* link verse is presented first. In case of incomplete *Okhla* lists, the last part(s) of the list before "closing the cycle" is/are left out.

All three hands use this technique.[44] None of the examples in MS Or. 2091 comes completely full circle; there are always one or more parts missing, even if some Okhla lists come very close to completion. A first example is found in the latter part of the upper micrographic design on 1r. Carefully planned and executed, the extensive masoretic note (H 162 A-B E-J), listing where it reads either לא or ולא at the beginning of the verse in the Bible, begins with Former Prophets, which is the most relevant part in view of the *in situ* link verses Josh 1:5 and 1:8. The next parts of the list are recorded in logical order: Isaiah, Jeremiah and Ezekiel, Minor Prophets, Chronicles, Other Writings, and then back to the beginning: Genesis, Exodus and Leviticus. Only the information toward the end of the "cycle" re-

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44   See 1r mn 12 (H 162 A–B, E–J), 20r mn10 (בשוי plene or defective in the Bible), 239r mn4 (H 162 H–I), 255r mn7 (H2 93), 380v mn4 (אלה plene or defective in the Bible)

lating to Numbers and Deuteronomy is missing. Each and every part includes the word "likewise" דכות in the title (e.g. "Former Prophets likewise read ולא at the beginning of the verse with nine exceptions"); it is neither excluded at the beginning of Former Prophets (even though this is where the list starts in the manuscript) nor left out at the beginning of Genesis, the start of the masoretic note in its original, generic format. A second example is the seventh masoretic note on 255r, which starts with Minor Prophets due to the link verse Nah 3:11. Just five verses from the latter part of Jeremiah and Ezekiel are missing from the survey of verses beginning with either גם or וגם in the Bible (H2 93). The masorete could have easily opted to complete the list, but instead he inserted a short enumerative note, equally consisting of five biblical items, to finish the Mfig on the page. Finally, it is worth mentioning that two *Okhla*-like lists (20r mn10 יושב plene/defective spelling in the Bible, 380v mn4 הלוא plene/defective in the Bible) both begin with the most relevant part. They happen to be incomplete, not just at the end of the "cycle" but also at various places in the middle. However, the various Bible books that are dealt with appear in logical order. We can find one counterexample in MS Or. 2091, namely in the form of masoretic note one on 265v (H2 90 A), which offers a survey of אם/ואם at the beginning of the verse in relation to the entire Bible. In this case, the *Okhla* list starts with Genesis/Exodus and not with the Minor Prophets despite the in situ link verse being Zech 14:18.

The examples in Features 11–12 have shown us how the three masoretes of the Mfig of MS Or. 2091 made sure to put the part with the *in situ* link verse of long masoretic notes at the front, presumably to make sure the most relevant information would be included on the page as well as to help the reader find that information more easily. I also illustrated how the masoretes did not seem to mind if certain parts of the notes sometimes remained a little frayed at the edges, editorially speaking. We can speculate why the Mfig masoretes did not always consider it necessary to bring masoretic notes to completion. Above several examples were given of cases where they could easily have opted to do so, but did not. Their main strategy seems to have been to ensure the inclusion of the most relevant information on the page.[45] While their preference for storing accumulative Okhla lists in the Masora Figurata does suggest an appetite for comprehensiveness, this appetite was not taken to an extreme.

Features 13–14:

Feature 13:   A remarkable phenomenon in MS Or. 2091 is that of repeated *Okhla* and *Okhla*-like lists. Out of six lists repeated once, five were recorded by different hands. In one case, similar short versions of *Okhla*[H] 59 were produced by all three hands plus a complete version of the same list by "black" hand 1.

Feature 14:   Fol. 245r shows traces of *in situ* redaction by the *masran*.

In MS Or. 2091 it happens relatively often, that recensions of *Okhla* and *Okhla*-like lists occur on more than one opening page. The pattern is as follows:

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45   To give another example: mn3 on 38v (H 72/P 81) runs exactly up to and including the *in situ* link verse.

Okhla^H **number**	Okhla^H2 **number**	**Okhla-like list**	**Opening pages**
3			251r mn2 270v mn1
20			249v mn1 268r mn9
59			245r mn2 (short version) 256v mn1 (short) 268r mn7 (short) 309r mn1 (long)
162			1r mn12 239r mn4
166			172v mn11 258r mn2
	1 E		338r 343r
		ואת את ואת	250r **265v**

If I have distinguished the three hands correctly, the same *Okhla* list was repeated by the same ("green") hand (2) only once. On all other occasions, the masoretes of the Mfig repeated, probably unwittingly, *Okhla* lists that one or both of their colleagues had already used on a different opening page. This suggests that they probably did not coordinate where what would go and, therefore, a collective aim does not seem to have been to store as much diverse masoretic material in the codex as possible. In the context of this article, it would go too far to study the various repetitions in detail. However, a few basic observations can be made which, for the time being, admittedly lead to more questions than answers. As we build up knowledge of the contents of Masora Figurata in various Ashkenazi Bible manuscripts, we will start seeing certain patterns. Standing at the outset of such research, a short description of the situation per manuscript will have to suffice.

When comparing doublet *Okhla* or *Okhla*-like lists in detail, an indication that proves beyond any doubt that some masoretes must have used the same *physical* source to copy from is nowhere to be found, in fact quite on the contrary. Rather, they seem to have had their own personal notebooks with comparable selections of lists of which the redaction could moreover be very similar. Did masoretes tend to have their own collections of masoretic lists akin to the ones we know as *Okhla*^H and *Okhla*^P, or smaller compilations with enough information that would allow them to do their work? How can we otherwise explain the patterns of sometimes exceeding closeness but still minor diversification we find in repeated lists in MS Or. 2091?[46] It seems more than likely that they must have used individual masoretic collections or personal notebooks, since copying an *Okhla* list in the form of a Masora Figurata from one codex to another would have been an impractical undertaking prone to mistakes. Of course, masoretes approached their sources flexibly: depending on the amount of space available on the page, they had to move between quoting longer and

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46   A striking example of exceeding closeness is the H2 E 1 case, but there that closeness is also with H2! See b below.

shorter biblical quotations all the time. For that, they probably would have relied on their memory to some extent. We see enough examples where two verses are confused with one another to realise mistakes happened that could have happened at various stages of transmission.

What types of similarities and differences do we observe between repeated lists in MS Or. 2091?

a.   Small variations in the precise formulation of headers

While *Okhla*^H2 1 E and the ואת את ואת lists have identical headers, the accumulative Okhla lists display minor variations. The following are notable:

Thirty-four verses in the Bible include לא ולא ולא (nine of them beginning with לא)

						Source
סימ'			לא ולא ולא		ל̇ד̇ פסוקי	172v
וסי	ט' מנהון ראשי פסוק		לא ולא ולא		ל̇ד̇ פסוק̇	258r
וסימנהון	ט' מנהון ראשי פסוקים לא דמיחדין	לא ולא ולא	דמיחדין מן ג'	ל̇ד̇ פסוקי'	חד מן	Okhla^H 166

Unique words beginning with כ

									Source
ו̇סימניה	ולית דכות תיבות	בריש תיבות	כ̇א		מן	א̇ב̇	חד מן	כלא	249v
וסימנהון	ולית דכוותהון בקריא		כפן		מן	אלפא ביתא			268r
	ולית דכותהון		כא	חד	מן	א̇ב̇			H 20
וסי	ולי' דכו	בריש 'תיבות	כ"ף	כ"ף וחד	חד וחד	מן	א̇ב̇		P 19

Words that occur twice in the Bible and in the same verse

									Source
		בחד פס'		ב̇ב̇	מן	א̇ב̇	חד מן	המונים המונים	245r
		בחד פסוק	מלין	ב̇ב̇		א̇ב̇	חד מן	לישע	256v
וסימנהון	ולית דכוותהון בקריא	בפסוקא		ב̇ב̇	מן	אלפא ביתא		כ̇א	268r
ו̇סימניה		בחד פס̇ו	ותרויה̇	ב̇ב̇	מן	א̇ב̇	חד מן	בצלצלי	309r long version
		בחד פסוק	ותרויהון	ב̇ב̇	מן	א̇ב̇			H 59
וסי	דלו'	בחד פס'ו	ותרויהון	ב̇ב̇	מן	א̇ב̇			P 58

Under feature 8 above, I have already highlighted the fact that אלפא ביתא without preced-ing *in situ* link word is more typical for "green" hand 2 than for the other two hands.[47] The last two examples above suggest that further vocabulary, i.e. בקריא, might be characteristic for the same hand. If not due to the source(s) he happened to use, using the word seems to be a minor stylistic trait of the masorete, as is borne out by the rest of the evidence.[48] What is really striking about the H 59 list is that the three masoretes on the whole included the same alphabetical items in their short version, which in themselves seem a random sub-section of items per letter of the alphabet found in the long version. This suggests the masoretes had access to the same shorter version and did not abbreviate the long alphabet-ical list individually on the spot to adapt the list to the space available on the page.[49]

Word combinations that occur twice, once with and once without ה preceding the second word:

וסימנהון	ולית דכוותהון	ותנינא נסבה הא	קדמאה לא נסבא ה"א	חד וחד מן תרתין תיבוהן דלוג	מן	אלפא ביתא	Source
וסימנהון	ולית דכוותהון	ותנינא נסבה הא	קדמאה לא נסבא ה"א	חד וחד מן תרתין תיבוהן דלוג	מן	אלפא ביתא	251r
וסימנהון		ותנינא נסיב	קדמאה לא נסיב ה	בב פסוקים	מן	אלפא ביתא	270v first time
וסימנהון		ותנינא לא נסיב הא	הא				270v second time
וסימנהון		ותנינא לא נסיב הא (sic)	קדמאה לא נסיב הא	חד וחד מן תרתין תיבוהן דלוג	מן	אלפא ביתא	270v third time
וסימנהון	ולית דכותהון	ותנינא נסיב הֿ	קדמא לא נסיב הֿ	חד וחד מן תרתין תיבוהן דלוג	מן	אבֿ	Okhla^H 3
וסימניהון	ולית דסמ'	ותנינ' נסיב ה'	קדמא לא נסיב ה'	חד וחד מן תרתין תיבות' דלוג	מן	א"ב	Okhla^P 3

The version of the above list on 270v is very chaotic, which "explains" why the header is quoted in three different locations on the page. Curiously, the headers are each time slight-ly different.[50] The last one is closest to the masoretic title on 251r, but again not fully iden-tical even though they were copied by the same hand. This suggests that the masoretes of MS Or. 2091 created headers quite flexibly. And that minor differences between headers cannot be safely taken as an indicator of which or how many source text(s) they might have copied from.

b.   Similarities and variations in the inclusion of biblical items – signs of *in situ* redaction in certain lists

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47   See 84r mn4 (H 64), 172v mn1 (H 60), 251r mn2 (H 63), 268r mn6 (H 59), 270v mn1 (H 3) and mn2 (H 2); however, אלפא ביתא is also used on 254r mn3 (H 31) and 335v mn8 (H 43)

48   For בקריא/בקריה see 20r mn1, 203r mn1, 4, 251r mn1 (H2 10 A), 255r mn2, 5 (cf. mn7 דקריה), 268r mn3, 6, 8, 270v mn5 (cf. mn6 כל קריה); cf. 265v mn1 (H2 90 A-B) וכל שאר קריא and בקריא and 309r mn4 (H 32) וכל קריא. Cf. also the technical term אהדדי: 20r mn1, 5, 7 and 268r mn1; cf. להדדי 1r mn10.

49   The minor difference between the headers of the short and long version copied by the same "black" hand 1 in principle fits that hypothesis.

50   For a similar situation, see the repeated Pentateuch sub-section of H2 93 on 255r mn7.

Appendix 1 mentions the differences between the repeated lists when it comes to the in- or exclusion of biblical items and the order in which they appear on the page in comparison to one another and, where relevant, to *Okhla*[H] and *Okhla*[P]. These differences are usually relatively minor but the fact they are there suggests that the three masoretes had access to lists that were often very similar, but most likely not to one and the same physical copy with those lists. Below I briefly discuss some of the more striking examples.

The H2 1 E example of repeated lists occurs on consecutive opening pages. The similarities between the two lists but also H2 1 E are remarkable. All three versions announce fifteen biblical items but insert only fourteen including one problematic item that cannot be identified. Moreover, the items are listed in exactly the same order with Lev 7:29 located between Num 6:10 and 6:13 and the order of Writings being Chron, unidentified, Ps, Song, Eccl and Dan, except that in *Okhla*[H2] the unidentified item has been crossed out and occurs immediately before the Chronicles item, which is moreover written by a later hand (the list there thus in fact amounting to 13/15 items). The unidentified Bible quotation reads המנחה, the presence of which Ognibeni does not manage to explain.

The H 59 case with four parallel lists is interesting. When we compare the catchwords of the three short versions, we find the following:

	245r	256v	268r
א	--	--	ארום ארום
א	אגרטלי אגרטלי	Same	Same
ב	בצלצלי בצלצלי	Same	Same
ג	גלילים גלילים	Same	Same
ד	דימון דימון	Same	Same
ה	הלהן הלהן	Same	Same Link word
ה	המונים המונים Link word	--	--
ה	החרוץ החרוץ Link word	--	--
ו	וגלות וגלות	Same	Same
ז	זמרו זמרו	Same	Same
ח	חנוני חנוני	Same	Same
ט	טמא שפתים טמא שפתים	Same	Same
י	יושת יושת	Same	Same[51]
כ	כסאות כסאות	Same	Same
ל	לישע לישע	Same Link word	Same

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51 But listed between נ and ס

	245r	256v	268r
מ	ממתים ממתים	Same	Same
נ	נעול נעול	Same	Same
ס	סורה סורה	Same	Same
ע	ערו ערו	Same	Same
פ	פרת פרת	Same	Same
צ	ציצת ציצת	Same	Same
ק	--	קרבנה קרבנה	קרבנה קרבנה
ר	--	רבתי רבתי	רבתי רבתי
ש	--	שקמתי שקמתי	שקמתי שקמתי
ת	--	תדלחם תדלחם	תדלחם תדלחם

Fol. 256v is the most straightforward with exactly one word per letter of the alphabet, including the link verse. These words arguably constitute the core, short version. Distinctive on these lists is the shared item for the letter ד, i.e. דימון דימון found in Isa 15:9. In comparison, the long version found on 309r and *Okhla*[H] 59/P 58 only list דדיך דדיך of Song 4:10 in relation to the letter ד. Fol. 268r begins with an extra item for the א, i.e. ארום ארום. This is also the first item of the long version on 309r and *Okhla*[H] 59 and item two of *Okhla*[P] 58, possibly implying a masorete switching from the long to the short version after the first item. Fol. 245r contains two extra items for the letter ה, namely המונים המונים and החרוץ החרוץ from Joel 4:14, functioning as the *in situ* link words. Looking at the exact spot where the two items are inserted, we can observe that the *masran* nearly forgot to include them (cf. figure 2).

Figure 2

Immediately before המונים we see that the letters וגלו have been crossed out. As soon as Joel 4:14 has been dealt with, the *masran* continues with וגלות found in Obad 1:20 like in the other short versions (cf. figure 3).

Figure 3

This detail beautifully shows a *masran* leaving behind a fingerprint in masoretic material. At work as a redactor, he makes the decision to include the list at this point in the codex in relation to catchwords which are usually not found in it, but fit in it anyway. To find such a fingerprint is relatively rare.
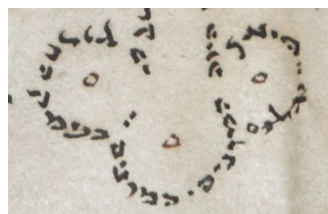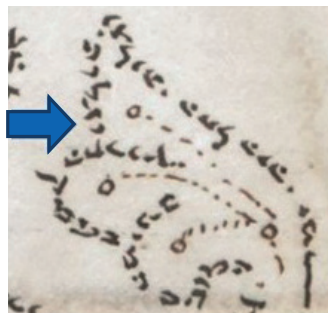
c. Similarities and differences in the order of biblical items

Appendix 1 below gives information on this. Some examples have already been given under b.

d. Small variations as regards to where Bible quotations start

While most biblical quotations start at the same point (usually the beginning of the verse) in most repeated lists, a few scattered differences can be observed where certain biblical items start with a different part of the verse as compared to the doublet version.

e.   Spelling

When comparing doublet *Okhla* lists, we could in principle (but only very cautiously) also take matters of spelling into consideration, such as plene/defective differences. However, not much is to be gained from this and the previous point in this particular codex, not least because it has already been established that the masoretes probably used different physical sources to copy from. Basically, however, the masoretes "sang from the same hymn sheet:" if they used personal notebooks, adapting its material flexibly to suit the page, these compilations were remarkably close in make-up. They were probably educated in the same school. As we discover more about the contents of Masora Figurata in Ashkenazi Bible manuscripts, we might be able to envisage more clearly what these masoretic collections might have looked like.[52]

> Feature 15:   Of the accumulative material the Mfig has in common with *Okhla*[H] and *Okhla*[P], seven lists are solely found in *Okhla*[H] (six excluding repeats), and ten only in *Okhla*[P]. Overall, however, the affinity between the Mfig notes and *Okhla*[H] is without any doubt the most pronounced.

Liss observes in relation to the eight masoretic lists on the opening page of Song of Songs (335v):

> *Sometimes the lists are structured alphabetically, sometimes according to the order of the biblical books, and sometimes the logic of the sequence of catchwords and the simanim is not obvious, but their character as a list with a distinctive sequence of word-pairs stays stable, even though the sequence itself may vary.*[53]

The word "stable" is important here. Above, I already described how some alphabetical *Okhla* lists are ordered according to the alphabet in relation to one letter only; in other words, biblical catchwords are not ordered alphabetically beyond that one letter. While we can speculate why this might be so, it is a key feature of numerous longer alphabetical lists.[54] As a result, a comparison of the versions of *Okhla* lists found in Ashkenazi Bibles with those in *Okhla*[H] and *Okhla*[P] and other masoretic sources can be fruitful. The biblical references of the great majority of *Okhla* lists in MS Or. 2091 have the same or almost the same order as the ones in *Okhla*[H], which, in turn, is very different from the one found in *Okhla*[P] in a substantial number of cases. For instance, in the first masoretic note on 249v in our manuscript, the sequence of catchwords in relation to the letter ג is כגוי, כגאון, כגפן, כגבור, כבגור. This is the same as in *Okhla*[H] 20 but differs from that found in *Okhla*[P] 19, where it reads כגפן, כגאון, כגבור, כגוי. Appendix 1 below shows in detail the level of mutual dis/similarity between the Mfig and *Okhla*[H] and *Okhla*[P] when it comes to the presence or absence of biblical items and the order in which they occur in the list. Of course more research can be done. Thus I did not systematically compare the headers of *Okhla* lists used in our manuscript with those found in *Okhla*[H] and *Okhla*[P].

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52   Thus I do not exclude the possibility that shorter collections than the ones we know as *Okhla*[H] and *Okhla*[P] were in circulation.

53   Liss 2022, 8.

54   Nevertheless, Dotan does not specifically draw our attention to this feature in his survey of ordering principles in masoretic notes. Aron Dotan, *The Awakening of Word Lore: From the Masora to the Beginnings of Hebrew Lexicography* (Jerusalem: The Academy of the Hebrew Language, 2005: 31–44. (in Hebrew)

4 Page and Text Layout of the Masora Figurata

Having established the nature, scope and organisation of the masoretic contents of the Mfig in MS Or. 2091, it is now time to describe how those contents have been practically put onto the page by the three masoretes. While the singularity of "green" hand two has already shone through in various respects, it will only become clearer in this section.

> Feature 16:   On the whole, the reading direction in the micrographic designs is straightforward with clear starting and end points to the text. Exceptions are some figurative shapes in the form of various beasts, where the reading direction temporarily becomes more chaotic, requiring greater attention from the reader and the eye to move back and forth between small parts of the text. The complex interlace micrographic designs, found especially in the lower but from time to time also middle or top parts of the page, consist of two or more crisscrossing reading paths or "systems," whereby starting points are regularly indicated with a special sign, most consistently so by hand 1.[55]

A micrographic design can consist of one or more "systems" or writing and reading paths with their own starting and end point. Under a "system" I understand a writing path where the scribe wrote in one direction on a single line which comes to a natural close, either because it comes full circle immediately adjacent to where it started or at a point after which the masorete lifted his writing implement off the parchment to move it to a different part of the page. The starting points of two systems can be very close to one another: the first can e.g. begin at the top right corner of the design and the second as well, but then slightly inside the first (see a pattern from 239r below). The first system can also start, for instance, in the top right corner and the second in the very centre of the design (see e.g. the start of masoretic note 6 on 1r in BIMA 2.0). Top right, centre and the right hand side of the design more in general are the best places to search for the beginning of a system. The same principles are adhered to in complex interlace micrographic designs, but here the writing and reading paths crisscross themselves and each other (cf. figs. 4-5).

Figure 4

55   For interlace designs around the initial word see 172v, 265v, 324r, at the top of the page 309r, and both 335v.
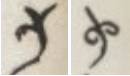
Figure 5

To help the reader navigate those complex designs, the three masoretes regularly indicated the starting point of one or more systems with a special sign that could take various shapes such as a leaf, lily or a more stylised *fleur-de-lis*:

Special signs used to indicate the beginning of a "system" in a complex micrographic design

1r		132r	
256v		258r	
259v		265v	
309r		324r	
338r		345v	
363r		380v	

Special signs used to indicate the beginning of a "system" in a complex micrographic design

172v		251r	
270v		352r	
38v		254rv	
343r			

Thus, on the opening page of Chronicles (380v) there are four intertwining systems: the first one starts, as expected, in the outer top right corner, the second system just beneath it inside the first, the third from the next point immediately to the left of the first and the fourth inside the last one. Special signs mark the beginning of systems one and three only. We are supposed to figure out the rest by ourselves.

Figure 6

The image above (cf. fig. 6) furthermore illustrates how masoretic notes, colour-coded in the edition in BIMA 2.0, can stretch over more than one system. They can also occupy more than one masoretic design. Masoretic notes can start in the middle of a pattern or a system, when the previous masoretic note has come to an end (see e.g. the "blue" masoretic note above).

Looking at the distribution and shape of special signs indicating the beginning of patterns or systems in the manuscript, we can conclude that hand 1 makes use of the device most consistently; all pages contain at least one such sign except 335v. Hands 2 and 3 use a special sign on less than half of the pages. While the most common sign is employed by all three masoretes, each uses at least one type of sign that is not known from the other hands as well.

On several opening pages, where the Mfig was created by "black" hand 1 but especially "green" hand 2, we find several beasts either standing alone or inside a larger micrographic design where the reading direction temporarily becomes less clear and more chaotic.[56] It is here that one becomes less certain in which order the masorete put the biblical items on the page, even though it is still possible to decipher and identify them with confidence. A case in point is the non-continuous reading "path" that can only be reconstructed with some effort for the griffin to the left of the initial word on 268r. In the three images below I have removed the coloured path from some biblical items to illustrate the disjointed fashion in which the material has been inscribed on the page.
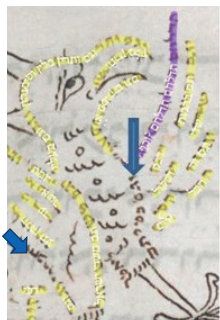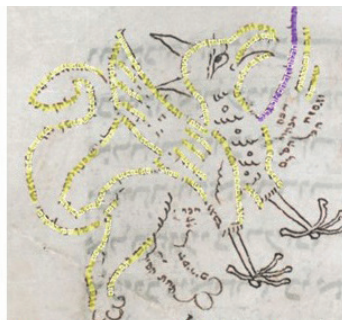
Chron 36:22 והברו	*Eccl 7:6 repeated in two places (wing and hind leg)*	*Ruth 1:11-13 in tail and wing (chaotic; relevant verse is Ruth 1:12)*
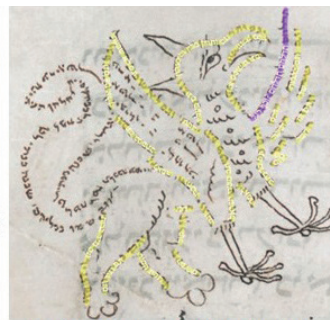
Feature 17:	The three masoretes used a variety of graphic markers to reveal the boundaries and internal structure of masoretic list material to the reader. Paleographically speaking, "green" hand 2 stands out in particular from the other two hands. Thus the masorete's use of a major separator between some masoretic notes is distinctive.

As just explained, masoretic notes can start anywhere in a pattern or system. Each masorete used a variety of graphic signs to reveal the boundaries and internal structure of masoretic list material to the reader. Depending on the masorete, signs could be used to separate (1) masoretic notes from one another, (2) the header of a masoretic list from the first biblical reference in that list, (3) biblical references from one another in a list and, inside one and the same biblical item, (4) the catchword(s) from the rest of the quotation, and (5) a non-biblical addition to the quotation from the quote itself such as ב' בו ("twice therein"). Blank space was also occasionally used, e.g. on 255r:[57]
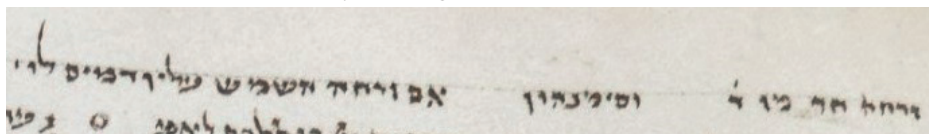
Example 1: multiple dots between masoretic notes on 258r

56   I.e. 132r right and left dragons in top pattern; 203r the winged face of the middle pattern; 268r the griffin to the left of the initial word; 352r the birds in the top pattern. Compare also the relatively straightforward reading direction on 324r with two dragons in the middle pattern and 338r the birds in the lower and middle patterns. Wings are usually the trickiest part to fill with text.
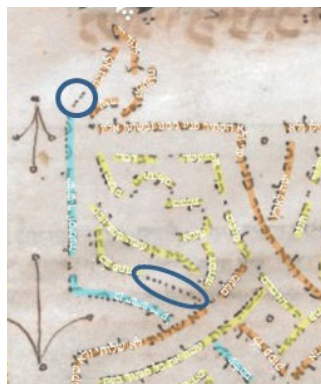
57   See also e.g. 20r mn11, 84r mn4 and 8

לישע חד מן אֹבֹ בֹבֹ מלין בחד פסוק וסימניהֹ " אגרטלי '
אגרטלי ' ואלה מספרם אגרטלי " בצלצלי ' בצלצלי ' בצלצלי ' הללוהו
בצלצלי שמע

"לישע (in Hab 3:13) belongs to an alphabetical list
of words which occur twice and in the same verse.
Their references are (1) אגרטלי אגרטלי in Ezra 1:9, (2)
בצלצלי בצלצלי in Ps 150:5, ...".

In this example (cf. example 2) from "black" hand 1 we see
two dots (for clarity here represented as ") to separate both
the header from the first *siman* and consecutive *simanim* from
one another, as well as a single dot (here ') to separate the
catchwords from one another and the rest of the quotation.
What is striking about "green" hand 2 in comparison to
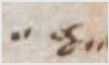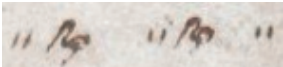
Example 2: the start of masoretic note 1 on 256v

the other two hands is its sparser use of graphic signs. Its tendency is not to use any graphic
sign between the header and the first *siman* or inside a *siman*,[58] only to use a vertical stroke
(') instead of a double stroke (") between two *simanim* and a double stroke (") rather than
three or more dots between masoretic notes. The basic graphic sign thereby looks like a
vertical stroke as opposed to the more rounded "dot" shape used by the other hands. On
the other hand, "green" hand 2 alternates the modest " between masoretic notes with a
major separator. The latter is only used in relation to a small number of masoretic notes on
two thirds of the pages but it is very distinctive for the hand in general. Here is an overview
of its occurences in MS Or. 2091:

Folio	Graphic sign	Where
84r		All in top pattern
172v		Both in middle pattern
203r		Both in top pattern
251r		Bottom pattern

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58   While this might be the general tendency, on a few pages created by "green" hand 2 we also e.g. find a
single vertical stroke separating a catchword from the rest of the quotation: see 172v (c. 50% of the cases),
251r (most of the cases), 268r (some), 270v (some), 352r (some).

Cf. 255r		Inside a header in bottom pattern; probably not the same sign
268r		Bottom pattern
270v		All in top pattern

Thus graphic markers, even if used flexibly,[59] can give us important clues as to the identity of the masoretes. Another graphic marker to help the reader understand the material was a dot over the relevant letter of catchwords especially in *Ktiv/Qre* lists. Thus in masoretic note 3 on 38v, a dot over the ו in each catchword is there to highlight the *Ktiv* as opposed to the *Qre* with י.[60]

> Feature 18: Another scribal device which helps the reader navigate the Masora Figurata is that of the repetition of letters and/or word(s) within a system, between two systems and between two micrographic ensembles. Words are regularly abbreviated before a crossroads of intertwining reading paths, before a sharp turn in a reading path or at the end of a pattern or system, and then in most cases they are repeated in full afterwards. Comparison of the various scribal methods of navigating intertwining reading paths and corners, including different types of abbreviation, allow us to distinguish better between hands.

The reading path in an interlace design often leads across double crossroads and around sharp corners. The masoretes used a variety of scribal methods to navigate those, including, most prominently, simple continuous writing. The masoretes filled up the space available for writing even if that meant stopping in the middle of a word. On the other side of the crossroads or after a turn in the pattern, the same word could then be written another time, but now in full. This had the advantage of helping the reader navigate the grid and follow the correct reading direction. In the example from 256v below, when not paying sufficient attention, it would be easy to read from 'וסימניה to כי אני, had the word אגרטלי not been abbreviated before the junction (cf. fig. 7).

Figure 7

---

59 The masoretes often reduced the number of dots or strokes between two *simanim*, when the first *siman* finished, just before a crossroads or a sharp turn in the writing path.

60 See also 38v mns 1–2, 203r mns 5–6 (the latter again with vertical strokes rather than dots) and 324r mn1.

On the same page we find e.g. the word "cypress-wood" (עצי ברושים) abbreviated before a sharp corner (cf. fig. 8).

Figure 8

The fact that the masoretes used various repetition and abbreviation techniques, allows us to study them per hand. Above, we see a simple dot above the last letter, which is the main abbreviation technique of hands 1 and 3. "Green" hand 2 uses it (or rather a vertical stroke) less to abbreviate words, though often to abbreviate numbers. Here follows an overview of solutions the masoretes came up with to navigate corners and intersecting reading paths:

Figure 9

a.   Doing nothing: simply continue writing the text, e.g. on 20r (ואת עצמות יוסף from top right to bottom left; cf. fig. 9).

This "technique," together with the next one, is used most frequently by all three hands.

b.   To continue writing a word around a sharp corner or as if not traversed, e.g. on 20r (אבי שכם במאה and אלהי ישראל) and 172v (ובחדש ה שביעי; cf. figs. 10-12):
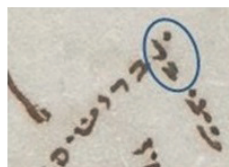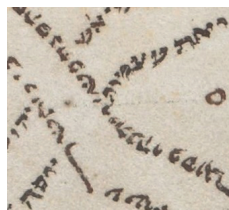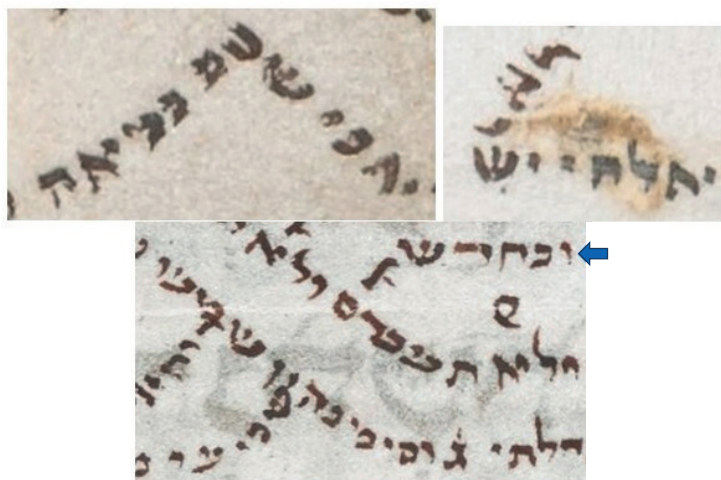

Figure 10-12

While writing a word around a sharp corner is found in all three hands, continuous writing of a word when it is traversed by a double row of text seems to happen occasionally only in Masora written by "green" hand 2.[61]

---

61   See also 20r mn2 פץ ח, mn3 Josh 24:32 במא ה, קש יטה; mn4 1 Sam 5:1 ויב אהו; 84r mn4 2 Sam 24:22 ו המורגים; 172v mn1 1 Chron 12:3 הר אש.

c. To dilate the last, penultimate or antepenultimate letter of a word to fill up the available space before a sharp corner or double crossing, e.g. on 20r (from top right: אשר האריכו ימים אחרי with dilated ר and ם; אחרי mn6 Judg 2:7), 203r (מלין mn 6 header) and 84r (ארץ mn5 Jer 46:8; cf. figs. 13-16).
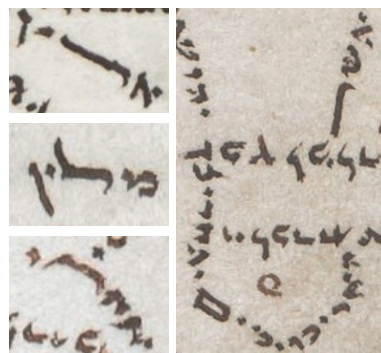

Figure 13-16

This technique is used regularly by all three hands. Whenever the dilated letter does not occur in the final position, this is because it is followed by one or more letters which cannot be dilated without causing them to resemble different letters such as the final Nun, or because the result is less pleasing to the eye, such as the Yod and the Tsade.[62] Letters אדהלת and final ך and ם are dilated most frequently.[63]

d. To write part of a word but then not repeat the word, e.g. on 20r (השד מיד, i.e. השדה מיד, cf. fig. 17).

I have not tried to trace this phenomenon systematically in the Mfig of the codex, but so far I have found it four times on 20r and once on 38v. It occurs only occasionally.

Figure 17

e. To write part of a word and then repeat the word or several words in full, e.g. on 255r (אם ינו ינועו mn2 Nah 3:12; cf. fig. 18).
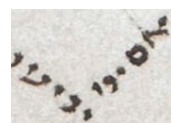
This technique is used frequently by "green" hand 2 and only from time to time by hands 1 and 3.

Figure 18

f. To stunt the last letter of a partial word and then repeat the word or several words in full, e.g. on 20r (וא ואת שריו, cf. fig. 19).
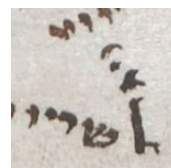
Letters of the Hebrew alphabet are stunted in a number of ways in the three hands of the Mfig. The letter may or may not have a dot or vertical stroke above it as well to indicate the abbreviation. Here are some examples:

Figure 19

Scribe CBMT	Hand 3	Hand 2		Hand 1	Letter
	250r	84r		309r	א
		172v וא		335v	

---

62 The scribe of the CBMT seems to have preferred not to dilate the Tsade either; he dilated the Tsade only rarely.

63 Dilated letters can have a double function, i.e. they might also be used to help the drawing. As such, their shape might be manipulated more. Likewise letters of regular size may be adapted to help the drawing. See feature 22 below.

Scribe CBMT	Hand 3	Hand 2	Hand 1	Letter
	245r			ב
			265v	ח
		ומ 203r	1r	מ
		352r	335v	
			363r	
		עצ' 20r		צ
	245r	ירוש 20r	259v	ש
		וישלחו 84r[64]		
		203r	335v	
		352r		
		352r		ת

Even though the overview above is incomplete, it nevertheless suggests that "purple" hand 3 uses stunted letters the least of all three hands. Slight paleographical differences can be discovered among the various hands.

g.   To abbreviate a word by using a graphic filler at the end of a partial word and then re-peat the word or several words in full, e.g. in the lower pattern on 259v (במשמר Lev 24:12; 2 כי ייי Chron 12:7; תועבת Prov 16:5; cf. figs. 20-22).

The graphic filler is mostly, if not solely, used by "black" hand 1. We do not find it in "green" hand 2. Its shape is different from the one used by the scribe of the CBMT, where the graphic filler can take the following guises (cf. fig. 23).

---

64   Here the word is not repeated, but completed along the curve.

Although the overview below shows some variation in its shape, it is relatively easy to spot in the manuscript itself. Since not every sign below might have been correctly identified as a graphic filler, instead being a stunted letter, I have mentioned the letters that are abbreviated.
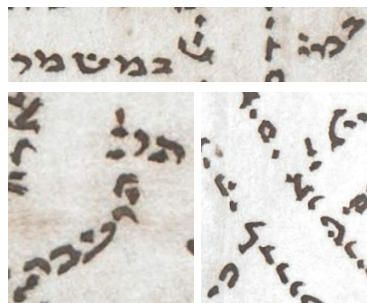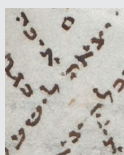

Figure 20-22

Figure 23

256v instead of כ

in איכ איכה (mn 1 Lam 1:1):

258r instead of ק

ק קמץ in (mn1 sub-header):

258r instead of ש

ש שכחי in (mn1 Ps 106:21):

258r instead of ב
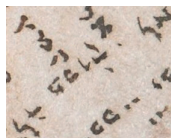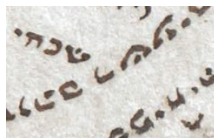
הב הבונים in (mn1 Neh 4:11):
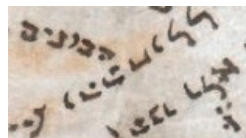
259v instead of ש

במש במשמר in (Lev 24:12):

259v instead of ע
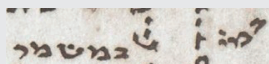
תוע תועבת in (Prov 16:5)
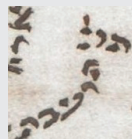
259v instead of כ

כ כי (2 Chron 12:7):
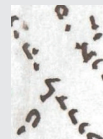
265v instead of ס

265v instead of א

265v instead of ה

וס וסימניה׳ in (mn3 header):
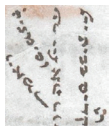
וא ואם (mn1 Eccl 4:12):
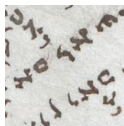
וקה וקהלת (mn1 sub-header):
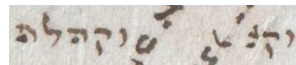
309r instead of צ

309r instead of ג

309r instead of ל

in ויצ ויצאו (mn1 Ezek 39:9):
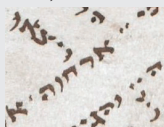
in והג והגישו (mn1 Ex 21:6):
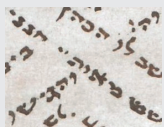
in הלל הללוהו (mn1 Ps 150:5):
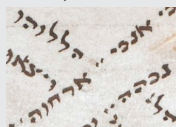
338r instead of ק

335v instead of ה

in ולק ולקטו (mn6 Num 11:8) (around the corner):
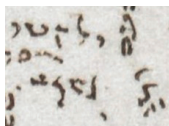
in ה האמת (mn1 Isa 59:15):

363r instead of ע

363r instead of ש

363r instead of ע

in כע כעונותינו (mn1 Ps 103:10):
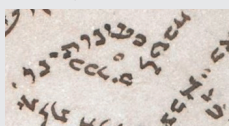
in ש שלח (mn1 Job 28:9):
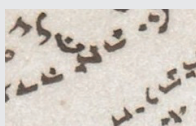
in שמע שמעו (mn1 2 Kings 17:14):
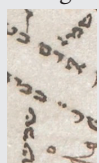
380v instead of ש

380v instead of ר

380v instead of י

in ותרש ותרשישה (mn3 1 Chron 1:7):
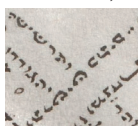
in ור וריפת (mn1 Gen 10:3):

in י ייי (mn3 Isa 1:2):

Hand 3 250r

Instead of ד in נא נאבדה (mn2 Jon 1:14):   Instead of א in א אל (mn2 Jon 1:7):

Instead of ש   Instead of ש   Instead of ש

In האיש האיש (mn5 Jon 1:14):   in וש ושרפת (mn3 Deut 13:17):   in יתעש יתעשת (mn4 Jon 1:6):

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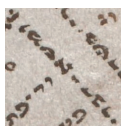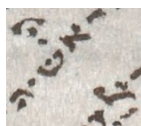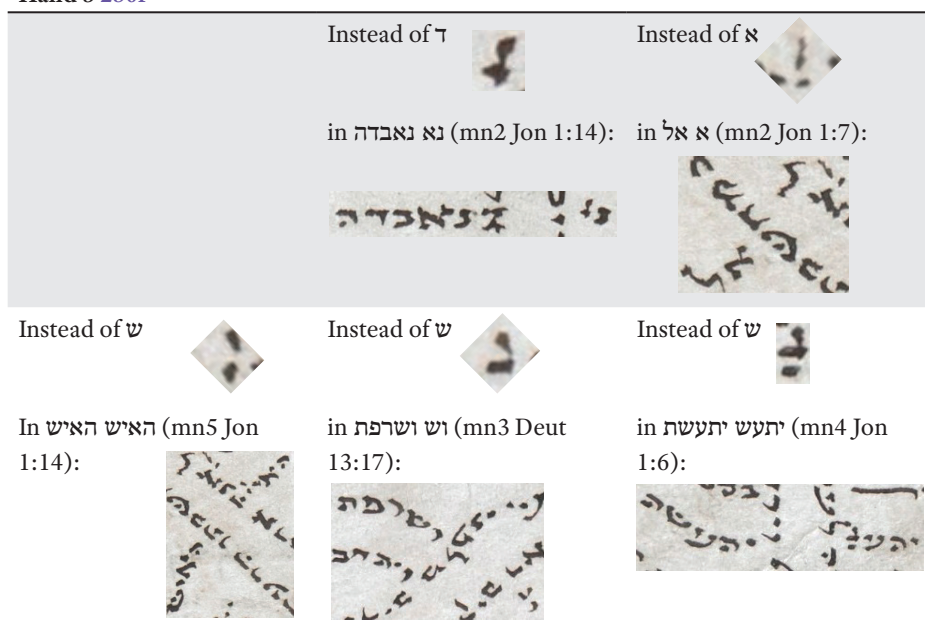
h.   To abbreviate a word by means of a dot (hands 1 and 3) or a ver-
     tical stroke (hand 2) and then not repeat the word, e.g. on 20r
     (יעק' מאת, i.e. יעקב מאת; cf. fig. 24).

This technique is not used very often.

i.   To abbreviate a word through a dot or a vertical stroke on the last
     letter and then repeat the word or several words in full, e.g. on
     172v (רוחא mn5 Jer 52:23; cf. fig. 25).

Figure 24

As mentioned above, a dot is by far the most common technique of
abbreviating words for hands 1 and 3. Though used very regularly, the
equivalent in hand 2 is less widespread than the technique of abbre-
viating a word without further graphic marker. Exceptions are 172v
and 270v, where words abbreviated by means of a vertical stroke hap-
pen to be in the majority.[65] Finally, on 38v, 243v and 343r there are
a few occasions where words are rather abbreviated by means of a
small arc above the last letter, e.g. on 38v (תיבו'); cf. fig. 26).

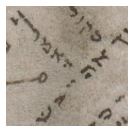*Figure 25*

j.   To abbreviate a word through a dot or a vertical stroke on a stunt-
     ed letter and then repeat the word or several words in full, e.g.
     20r (את עצ' עצמות; cf. fig. 27).

Repeating letters and words from one system or micrographic en-
semble to the other is a deliberate ploy in order to help the reader
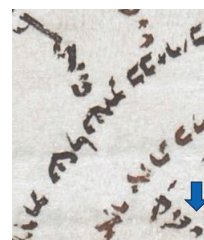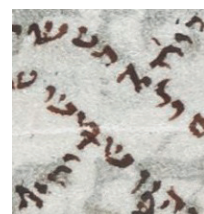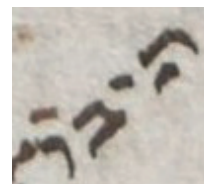
Figure 26

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65   Included in the count are the instances of dots/vertical strokes above stunted letters (see j).

of the Masora Figurata find their way within complex material. The technique is not used on every possible occasion but often enough to be a key characteristic of the page and text layout. What we often find is that the end of a micrographic design or system coincides with the end of a masoretic note so that the next pattern or system starts with a new masoretic note (46 of which 32 involve micrographic designs). In a small number of cases the first masoretic note remains incomplete (14 of which 9 concern partial Okhla lists).[66] This suggests careful planning on the part of the masoretes. It also happens regularly, that a
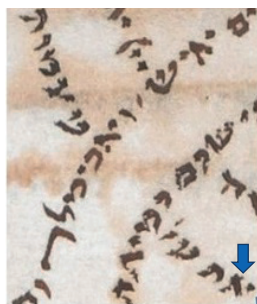
Figure 27

biblical item in a masoretic list ends at the end of one system or pattern, after which the next system or pattern starts with the next item on the list (26 of which only 6 involve micrographic ensembles). In a small number of cases and especially in "green" hand 2 (5/6), we find that the text belonging to the same biblical item is simply written continuously between systems.[67] However, this never happens between patterns. Repetitions of text belonging to one and the same biblical item from one system or micrographic design to the other are found in 37 cases, 14 of those being between patterns. We can thus see that in a majority of cases masoretic notes run from system to system or pattern to pattern (69 vs. 46), and a slight majority of those involve repetition of text (37). If we look at the situation between micrographic ensembles only, we find that most masoretic notes are brought to a conclusion (32) before the next ensemble is begun as opposed to 20 running from one ensemble to the other. Repetition of text takes place in seventy percent of the latter. In this manner the masoretes made sure readers could figure out the page layout. Repetitions are usually one to four words long. In five cases they are longer, sometimes even substantially longer.[68]

Feature 19:   Counter-intuitively, the general reading direction of the Mfig in MS Or. 2091 is from the bottom to (the middle to) the top micrographic pattern.

To start with an example, on 38v all the transitions between systems and patterns involve the repetition of words. In the lower pattern we find ויצאת ' החרסׁות with the relevant word placed at the front from Jer 19:2 at the end of system 1 repeated at the beginning of system 2 after which אל בן הנם follows from the same verse (see the letters below without colour-coding, cf. fig. 28.).
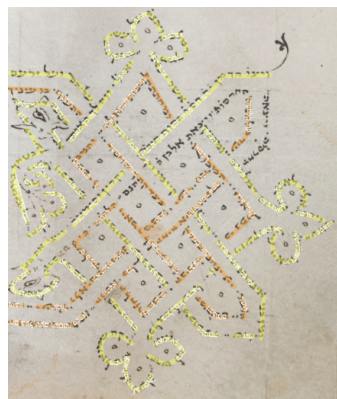
Figure 28

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66   Cf. Appendix 1 for the great number of incomplete Okhla lists in general.

67   172v from the lower system 1 to 2 and middle system 1 to 2 (the latter helpfully connected by a line), 251r from top system 1 to 2, 270v from middle system 1 to 2, 352r from lower system 1 to 2, 363r from lower system 1 to 2.

68   On 254r three biblical items are repeated from the middle to top pattern, for an unclear reason on 255r even five between the middle and top pattern.

Most of the page is occupied by mn3, which is an alphabetical ו/י Ktiv/Qre list, including the above example. In the edition in BIMA 2.0 it has been colour-coded orange (cf. fig. 29).

Figure 29

The orange masoretic note follows the yellow masoretic note in the lower ensemble, whereby it occupies the second part of its first and all of its second system, next it occupies the entire middle ensemble and finally comes to an end at the beginning of the top pattern after which two more masoretic notes follow, which have been given the colour red and light green. The repetitions are as follows:

End of system 1 of lower ensemble	Jer 19:2	החרסות ' ויצאת
Beginning of system 2 of lower ensemble	Jer 19:2	החרסות ' ויצאת אל בן הנם
End of system 2 of lower ensemble	1 Chron 20:5	יעור ' ותהי עוד מלחמה
Beginning of middle ensemble	1 Chron 20:5	יעור ' ותהי עוד מלחמה את
End of middle ensemble	Jer 16:16	לדוגים ' הנני
Beginning of upper ensemble	Jer 16:16	לדוגים הנני שלח לדוגים

As we can see, there can be no doubt about the reading direction on this page: it definitely goes from bottom to middle to top. This is also obvious in the alphabetical ordering (י before ל).

One in five opening pages contains an unambiguous lower to (middle to) upper ensemble organisation (38v, 249v, 251r, 254r, 259v, 352r). All three *masranim* followed this general organisational convention. On a further one in three opening pages we find the same unambiguous situation, where an alphabetical or otherwise straightforwardly organised list runs from one micrographic design to another, whereby the transition usually involves the repetition of words, in relation to two out of three micrographic designs, i.e. 250r, 256v, 268r, 309r, 345v, 363r (unambiguous bottom to middle), 172v, 203r, 245r (unambiguous middle to top) and the special case 84r, where the lower part of the middle pattern precedes the top part, nicely illustrating the topsy-turvy approach of the masoretes (cf. fig. 30).

Figure 30

In all the other cases, the various micrographic designs start with a new masoretic note so that we cannot establish with 100% certainty which micrographic design is supposed to follow which. In contrast to the masoretes of the Masora Figurata the *naqdan-masran* responsible for the linear Masora Magna of course arranged his material as expected from top to bottom. Crucial evidence is not the same as conclusive evidence that all thirty pages with Masora Figurata were conceived in the same way. However, there are no counter-examples of a masoretic note straddling more than one micrographic design that has to be read from top to bottom. For these reasons, the Mfig edition of MS Or. 2091 in BIMA 2.0 was done in its entirety from bottom to (middle to) top.[69]

> Feature 20:　　　The order of masoretic notes on the page is never according to some rigid formula. The most important arrangement principle is length.

Masoretes did not impose any strict rules on themselves as to the arrangement of masoretic notes on the page. Their main objective was to offer Masora that is of immediate relevance to the biblical main text on the same and sometimes also immediately adjacent page. However, the respective lengths of masoretic notes were of relevance to them. Most importantly, as a rule of thumb, they reserved the longest, most often Okhla list(s) for the biggest micrographic ensemble, which in this manuscript is usually found at the bottom of the page. If started in one design, a list could then be continued in one or more other designs.[70] The approximate verse-chronological arrangement of masoretic notes was at most of minor relevance to them.

69   The advantage of BIMA 2.0 is that, strictly speaking, editions do not require any form of linearity like in the traditional medium of the book. But the context boxes with masoretic notes still appear in a certain order.

70   We also see the occasional use of very short masoretic notes as fillers, e.g. the last masoretic notes of both the lower and upper pattern on 203r.

Feature 21:   The arrangement and pacing of biblical items is sometimes manipulated in such a way that a playful or meaningful relation is created between text and image.

In recent years art historical interest in micrography has been on the rise. However, all too often, micrographic images are studied without taking the text they are made up of into consideration. An exception with impressive results is Halperin's detailed study of the micrography of the Catalan Maḥzor.[71] When it comes to our manuscript, Liss has investigated the relationship between text and image on the opening page of Ezekiel (203r).[72] While she relates the programme of images in general to the thought of the Haside Ashkenaz,[73] she

shows how the texts have been manipulated by the masorete in order to create a meaningful relationship with the images. Thus, she believes the masorete deliberately started the list creating the mysterious winged head with the *in situ* link verse Ezek 1:8 (וידו אדם מתחת כנפיהם), which is later repeated at its usual place in the list. A playful example is the positioning of the word עיט "eagle" from Isa 46:11 exactly at the start of the eagle in the top right corner of the page (cf. fig. 31).
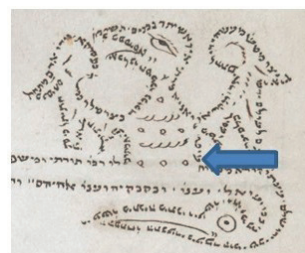
Figure 31

This certainly required some ingenuity and advance planning on the part of the masorete. On the basis of these and several more examples Liss concludes that "the scribe took great pains to relate the micrographic decoration and the Biblical excerpts in such a way that the iconographic program and its semantic content match exactly as often as possible."[74]

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71 Dalia-Ruth Halperin, *Illuminating in Micrography: The Catalan Micrography Mahzor-MS Hebrew 8° 6527 in the National Library of Israel*, MEMI 51 (Leiden: Brill, 2013).

72 Liss 2021(1), 131–75 and Liss 2021(2), 313–30.

73 See also Offenberg 2016, 1–16.

74 Liss 2021(1), 150.

5 Additional Paleographical Observations

In the course of this article, it has become abundantly clear that "green" hand 2 can be distinguished from hands 1 and 3 without any difficulty. However, it has been far more problematic to differentiate between hands 1 and 3, up to the point where it remains a possibility that all the relevant pages were in fact created by one and the same hand. In this short section, I will investigate a few more paleographical features in case some more indications can be gleaned, especially regarding the distinction between hand 1 and 3.

Figure 32

Feature 22:   The masoretes regularly shaped letters so they would serve the drawing better through dilation and/or bending of letters. The specific method of adding flourishes or hairlines to letters, not least to make the rounded shape of flower petals slightly more pronounced, is especially used by "green" hand 2 and occasionally by "black" hand 1. Sometimes hand 2 uses a characteristic letter like the ש with flourish ( ), also immediately before sharp corners where the flourish has no further role in the drawing.

The micrographies in MS Or. 2091 do not solely consist of letters, but also contain decorative elements to complete vegetal and animal motifs, such as on 84r (cf. figs. 32-33).

Figure 33

The boundary between letter and drawing regularly becomes a little blurred, when letters are shaped so they serve the drawing better. The letters ש, ר, ם, ל and ת are particularly popular in that respect. In the above examples, we see how the shape of flower petals is made slightly more pronounced by dilating or distorting letters or by adding hairlines or flourishes to some of them. In the manuscript as a whole this leads in flower petals, leafs and animals to letter shapes as follows:

	א
	י
	כ
	ל
	ם
	ר
	ש
	ת
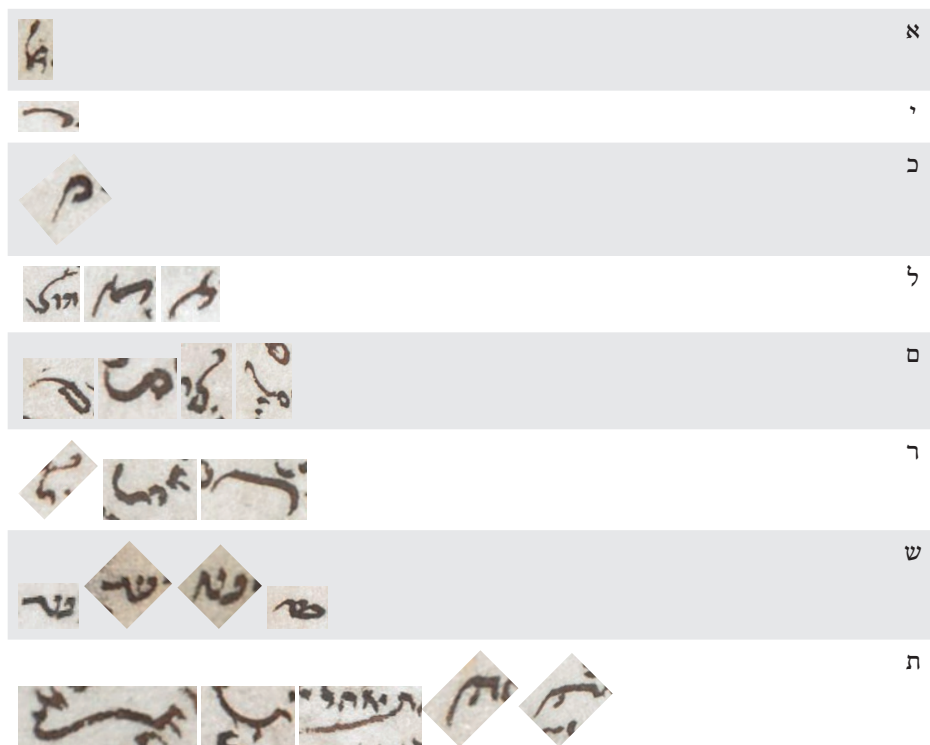
A letter like a ש with flourish can also occur in "green" hand 2 – without a special role in the drawing – immediately before a sharp turn, e.g. on 20r (יוש יושב mn10 Jer 22:30, cf. fig. 34). In the following example from the top of 203r the ך of בדרך and the ר from אשר are used respectively to draw the nose and mouth of the lion (cf. fig. 35). In masoretic note 1 on 38v לך from Gen 27:29 is used to shape the top of the head of a bird (cf. fig. 36). In masoretic note 3 on 203r ואל אל and ואל from Hos 4:15 are used to shape the helmet of a knight (on the right hand side and at the bottom, cf. fig. 37). "Green" hand 2 is where we find the most creative distortions of letters, especially on 84r. However, the technique is used by all three hands. Adding flourishes and hairlines to letters is more a characteristic of hand 2.
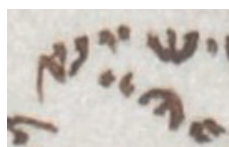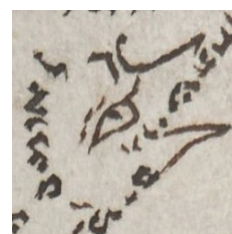
Figure 34-35

Figure 36-37

Feature 23:　　　Different methods of correction are used in the manuscript. "Green" hand 2, where most of the corrections occur, consistently uses a vertical stroke above one or more letters. The other two hands use a mixture of techniques.

In this short section, I will only concentrate on hands 1 and 3. A first method is the erasure of one or more letters, which occurs on 38v, 132r and 259v. A dot over one or more letters occurs on 1r, possibly 249v, and 309r, where a dot over the first and last letter of the word indicates that the entire word is wrong. On 243v, a ל is adapted to a ר. On 243v and 250r, we find a horizontal stroke through one or more letters. On 245r and 363r, we find a vertical stroke through one or more letters and on 324r two parallel diagonal strokes through one letter. The by now familiar picture arises of hands 1 and 3 being hard to differentiate, but hand 2 having a clear profile.

6 In conclusion

With some patience, the text along the winding paths of the micrography of MS Or. 2091 reveals itself as solid and immediately relevant masoretic information; the masoretes who inscribed it clearly took pride in their work. Since it has become obvious that they assisted readers in various ways to make their journey easier, it is a misconception to think that the letters and words of the Masora Figurata in this codex were not meant for reading and their presence mattered therefore only in a general sense. Its contents did matter and as a result we can still use it today as a valuable repository for masoretic material that can be studied in a historical context. However, there is a further point to make. For a medieval reader, the interpretative journey did not have to be easy to be worthwhile. Indeed, at its most extreme, we saw how some of the micrographic images invited the reader to look beyond the merely pictorial or masoretic and to contemplate their meaning, especially also through the interaction between image and text. Much care was therefore invested in the collective production of the manuscript.

Counter-intuitively, the micrographic ensembles in MS Or. 2091 need to be read from bottom to (middle to) top, to such an extent that even an ensemble consisting of one part beneath and one part above an initial word needs to be read in this way. The most important criterion for the masoretes to decide where the various masoretic notes had to go, was their respective lengths. Longer Okhla lists tended to be reserved for the larger micrographic patterns or were at least started there. The masranim did not find it essential to include long accumulative Okhla lists in their entirety. There was simply not always enough space on the same page to do so. In other cases, they could have included everything but did not do so. However, they did strive to include the most relevant part of masoretic notes including the in situ link verse and of course a header.

Apart from some isolated figures in larger micrographic ensembles where the reading direction can temporarily become a little chaotic, the reading paths are straightforward to follow with biblical items on the whole, being listed in an order that is already known from OkhlaH and/or OkhlaP. Of those two Okhla recensions the Masora Figurata of MS Or. 2091 has the greatest affinity with OkhlaH. A special sign regularly indicating the beginning of a pattern or system, frequent repetitions of word(s) between systems, patterns or across a crossroads of intertwining reading paths, and graphic markers elucidating the boundaries and internal structure of masoretic notes all contribute to the comfort of reading.

Analysis of several groups of repeated masoretic notes suggests that the masoretes probably had their own personal notebooks with masoretic lists, but also that the recensions of certain lists in those notebooks were remarkably close to one another.

In general, the precise paleographical description of the hands of masoretes could help us find clusters of related manuscripts. In this article, I have tried hard to distinguish between the various hands of the Masora Figurata of MS Or. 2091. It was not difficult to identify the material created by "green" hand 2. However, only subtle differences could be discovered between "black" hand 1 and "purple" hand 3, so much so that it remains a possibility that all those pages were in fact created by one and the same person. Comparison between the scribal features of the CBMT and the Masora Figurata did not lead to any substantive findings to be able to say whether the primary scribe might also have been one of the masoretes.

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APPENDIX 1

Overview of Okhla^P and Okhla^H lists with some representation in MS Or. 2091

H refers to the edition of Díaz Esteban and P to that of Frensdorff.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
Words which occur once with אל and once with על	2	2	270v	Ps 2:6	Incomplete with 14 word combination pairs as compared to 72 (H), 69 (P); א–ת except ו (also not in H) and ס–ש (present in H); list does not include link verse (אל/על ציון).	The present list includes one word combination pair per letter of an incomplete alphabet, whereby the pairs appear in alphabetical order. All the pairs also occur in H and P. The letter ת is only represented by the first item of the word combination pair: אל תורת Neh 10:29.
Word combinations that occur twice, once with and once without ה preceding the second word	3	3	251r	Jon. 4:7, 8	Incomplete with 32 word combination pairs as compared to 63 (H)/62 (P); א–ו of alphabetical list; list includes two link verses (toward the end of the list (וימן [ה]אלהים)	In exactly the same order as H and P but closer to H: both the ms. and H have גה (ה)גבול Ezek 47:13 as item 21, even though 21b does not seem to occur in the Bible; P does not list this word combination pair; P also does not list word combination pair 26 אחד (ה)הכבש Num 28:4 and Ex 29:39.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
			270v	Ps 1:1	Incomplete with 18 word combination pairs in chaotic order; א/ש/ת–א of alphabetical list; link verse initially not included and then included twice; the header occurs more than once[75]	It is strange how a second page by the same hand can differ so much from the first and be in so much disorder. Fragments of the list alternate with fragments from *Okhla*[P/H 2]. All the items also appear in H/P except the word combination pair 11 Ex 5:16 תבן/התבן? which does not seem to make any sense, and the apparently random quotation of Num 5:27 at the start of system 2 of the bottom micrographic design.
Words that occur once with preceding כ and once with preceding ב	4	5	363r	Dan 12:3	Incomplete with 49.5 word pairs as compared to 50 (H)/50 (P); א–ת of alphabetical list; only בחמץ Ruth 2:14 missing	In the same order and with the same items as H and P
Words that occur twice, once with penultimate and once with final stress	5	5	245r	Joel 4:8, 11	Incomplete with 39 word pairs[76] as compared to 40 (H)/41 (P); the list includes the two link verses Joel 4:11 (הנחת) and 4:8 (לשבאים) but only refers to the first in the header ("הנחת יד מן 'א'ב' …").	Basically the same order as H and P;[77] the last two word pairs שפטנו(ו) and תאמי in H and P are missing in the ms.;[78] one word pair seems to read הודיעני instead of הודיענו, but this might be due to an error.[79]

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75 The list is chaotic because the alphabet is hardly adhered to, word combination pairs are not always complete, or their two items are found in separate places in the list, and certain items are repeated.

76 However, items 1b Prov 25:8, 17a Eccl 12:4 and 28a Isa 61:1 לשבוים (as compared to H and P) happen to be missing.

77 The order of items within word pairs is the reverse of what is found in H and P in respectively five and four cases. For an unknown reason, word pairs נפלו and צאת appear twice on the list, of which once out of alphabetical sequence.

78 Word pair כתם Isa 18:5 and Ps 78:72 is missing in H. For another difference to P and the ms. see the word pair נתן.

79 See also 35b נחם where Ex 13:17 is quoted instead of 1 Chron 4:19 in H and P.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
Unique words which occur once with ד and once with ר	7	7	380v	1 Chron 1:6, 7	Incomplete with 22.5 word pairs[80] as compared to 38 (H)/ 38 (P); א–ל of alphabetical list; list includes link verses	Same order and items as H except that the items of word pair כמספד Zech 12:11 and 1 כמספר Kings 18:31 appear by mistake in the wrong order. Almost the same order as P except for one word pair.
Word pairs that occur once with final ן and once with final ם	12	12	343r	Lam 1:4	'Complete' with 11 word pairs as compared to 11 (H)/12 (P); א–ת of a self-professed incomplete alphabetical list	Same order and items as H; same order as P except that P lists the additional word pair כהן Ezek 18:14 and 2 כהם Kings 17:15.
Words that occur thrice, twice without and once with preceding ו	14	13	259v	Zech 1:9	Incomplete with 55 word groups as compared to 91 (H/P); א–מ of alphabetical list; list includes link verse (וארא)	The ms., H and P basically have the same order, with a few minor differences: the a and b items of a word group appear in reverse order 4 times as compared to H and once in comparison to P. In word group 12 the ms. has with P the correct Isa 38:3 ובלב שלם as opposed to H 2 Kings 20:3 reading ובלבב שלם according to BHS. Word group 40 ישדד is also found in H, but it is absent from P.
Unique words beginning with מ	19	18	352r	Dan 1:(3,) 5	Incomplete with 137 items as compared to 140 (H)/218 (P); ל–ש of an alphabetical list like H, which ranges ל–ת, as opposed to P, which includes items from the entire alphabet א–ת. List includes link verse Dan 1:5, of which the catchword ומקתצם is also mentioned in the header.[81]	Interesting but chaotic list, where the masran includes a link verse which is not found in H or P. The ms. initially has the same order as H but then it gets complicated, clearly different from P though. The ms. has the following additional items that are not found in H or P: וממעמקים Ps 130:1 (but BHS reads ממעמקים) and ומצדיקי Isa 5:23 (but BHS reads מצדיקי). The catchwords are not always put at the front of the items. Two items are in the ms. and P but not in H: וממעצתיהם Prov 1:31 (cf. the erroneous reading וממצוקותיהם in the ms.) and ומראה Num 12:8.

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80 The list ends with the first item of a word pair, לצוד Gen 27:5.

81 Relevant catchwords could also have been ומזרע Dan 1:3, which is also found in P, and ומין Dan 1:5, which is missing from both H and P. Yet they are not listed, presumably because they fall outside of the alphabetical confine ל ff.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
Unique words beginning with כ	20	19	249v	Obad 1:16	'Incomplete' with 124 items as compared to 126 (H) and 139 (P); list includes link verse	In the same order as H,[82] very different from P; the 'intention' of the list is to be full: no items missing at the end in comparison to H; items כהתם Daniel and 1 כחיל Kings 20:25 missing in comparison to H
			268r	Ruth 1:4	Incomplete with 43 items;[83] א-ה plus one י, one כ, one ל and two ע items; list includes link verse (בעשר)	Mostly in the same order as H and fol. 249v, different from P.[84] However, some items occur out of sequence, including the link verse.[85]
Unique words beginning with ל plus a short vowel	28	27	324r	Prov 1:4	Complete with 33 items as compared to 32 (H)/35 (P); א–ת of an alphabetical list	In exactly the same order as H except לעינים Num 10:31, which is missing in H; different from P. P also lists להחומה Neh 12:38 and 2 להעם Chron 10:7.
Word combinations without preceding ו where one would perhaps expect one	31	30	254r	Mic 7:20	'Incomplete' with 21 items compared to 24 (H)/25 (P); א–ת of an alphabetical list; list includes link verse	The version of this list differs from the one found in H and P: instead of item 1 ארבעים שנה Ps 95:10, H/P have 2 ארבעים שנה Sam 5:4; this list lacks representation for the letter ג, where H/P have גם ברוך Gen 27:33; however, it does include the נ, ז, and ס where H/P have nothing in the unclear cases זמתי סאתים שערים Josh 1:14 and נשיכם טפכם Ps 17:3, בל 2 Kings 7:18. P has two additional items (ל–מ) compared to the ms. and H and H and P have two more compared to the ms. (ע).

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82 Only on three occasions do two consecutive items appear in reverse order to what is found in H.

83 Item 3 כאהבים remains unidentified.

84 I am not listing all the details here.

85 Item 4 Hos 9:10 כענבים in the middle of א items is absent from H/P; its occurrence can be explained as an addition to item 2 Hos 9:10 כאהבם. The same is happening with items 31–34 which list four items from Isa 10:9 (כדמשק, ככרכמיש, כלנו, כארפד; H, P and fol. 249v only list כדמשק, but P adds "4 times in the verse"). However, item 35 Ruth 1:4 בעשר means a sudden jump from ד to ע and to the link verse in the list. (The verse is missing on fol. 249v.) After that, the list continues with seven ה items and ends with one י item, Ps 37:20 ביקר. Finally, a few items are missing compared to the sequence in H and fol. 249v, i.e. Judg 9:36 כאנשים due to a mistake (cf. repeated Prov 4:19 כאפלה); כגוי Isa 58:2; כדברם Isa 5:17 and 2 Kings 17:15 כהם.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
Word combinations once preceded by ו but without ו elsewhere in the Bible	32	31	309r	Job 1:1	Complete with 21 items as compared to (H)/(P)	Exactly the same order and items as H and P
Unique words consisting of two letters	41	40	239r	Hos 2:8	Complete with 23 items as compared to 23 (H)/27 (P)	The same order as H except for two consecutive items, which occur in reverse order in H; two similar such cases in P; the ms. and H contain the same items. P also has Num 6:4 זג, Gen 32:22 לן, Num 7:3 2 צב, Kings 4:41 צק.
Unique words with a ה with mappiq at the end	43	42	335v	Prov 31:10	Complete with 25 items as compared to 25 (H)/27 (P); א–ת of an alphabetical list	Same items in the same order as H and P except that the ms. quotes Ezek 22:24 rather than Dan 7:11 in relation to the catchword גשמה (different vocalisations), and P has ותלה Gen 47:13 and שבתה Ruth 2:7 as extra items.
Word pairs where a unique word in the first case has a Shva and in the second a longer vowel under its first letter ל	49	48	338r	Song 8:11, 12	Complete with 18/18 word pairs as compared to 18/18 (H)/18/18 (P)	Exactly the same order as H, different from P. The ms., H and P share the same word pairs, but in H the item למשפחות with Shva is followed by an erroneous quotation.
Word pairs where a unique word in the first case has a Shva and in the second a longer vowel under its first letter ב	50	49	343r	Lam 1:1	Complete 11/11 word pairs as compared to 11/11 (H)/11/11 (P)	Exactly the same order as H; clearly different from P. Same items in the ms, H and P.
Unique word pairs, whereby one word is spelled with ס or Sin and the other with Shin	53	52	335v	Song 1:1	Complete with 20/20 word pairs as compared to 19/20 (H)/20/20 (P)	Exactly the same order as H except for תסובב Jer 31:21/תשובב Ps 60:3, which is missing in H; clearly different from P.
Word pairs of which the first ends with ו and the second with י	54	53	335v	Prov 31:23	Complete 9/9 as compared to 9/9 (H)/9/9 (P)	With the exception of word pair 2, same order as H and P.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
Word pairs of which the first has a ḥolam and the second a Shureq	56	55	256v	Hab 3:14	Incomplete 8/21 word pairs as compared to 20/21 (H) and 21/21 (P), the list does not include the link verse although the catchword from it is quoted in the header	Strikingly, a very different order compared to H and P which share the same order. The header reads more like P. The ms. has האמור Job 34:18 and Mic 2:7 instead of H/P האמר Ezek 28:9 and Mic 2:7, the latter apparently being the better reading. H lacks קבור Deut 21:23 and 1 Kings 13:31.
Word groups consisting of unique words sharing the same first letter, of which one occurs in the Pentateuch, one in Prophets and one in Writings	57	58	338r	Eccl 1:7	Incomplete with 15 word groups as compared to 22 (H)/ (P); א–ס of an alphabetical list; list includes link verse	In the same order and with the same items as H and P
Words that occur twice in the Bible and in the same verse	59	58	245r	Joel 4:14	Incomplete with 20 items as compared to a very long list in H (101 items) and P (104); only one item per letter of the alphabet plus two extra Joel 4:14 cases resulting in three items beginning with ה; א–צ of alphabetical list	Interesting list, because the link verse containing two relevant words (החרוץ and המונים) is not found in P/H and a correction shows the masran nearly forgot to insert it. All items except Isa 15:9 דימון are also found in H/P.
			256v	Hab 3:13	'Incomplete' with 22 items; exactly one item per letter of the alphabet; list includes link verse	Strikingly, in this version of the list, the same items as on fol. 245r have been transmitted in the same order except the two Joel verses and plus four items ק–ת.
			268r	Ruth 1:13	'Incomplete' with 23 items; one item per letter of the item except א (2 items); list includes link verse	Again, strikingly, in this version of the list, the same items as on fol. 256v have been transmitted in the same order except that it has Ps 46:11 ארום ארום extra, which is item 1 in H and item 2 in P, and the י appears out of sequence after the נ. The title is more specific than in the other two cases.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
			309r	Ps 150:5	Complete with 105 items; א–ת of alphabetical list	Exactly the same order as H, very different from P. But the ms. has the following extra items compared to H: בארת Gen 14:10, ותפוצינה Ezek 34:5, כענן Ezek 14:10, להשבע Jer 12:16. While these four items are found in P, P lacks טמא שפתים Isa 6:5, which is found in both the ms. and H. This page therefore has the fullest version.
Words that occur twice but with different meanings	60	59	172v	Isa 1:5	Incomplete; 41 word pairs minus two items belonging to different word pairs[86] compared to 97 (H)/99 (P); א–ו of alphabetical list; link words טריה and תבו not reached[87]	Basically in the same order as P and slightly less as H;[88] inside the sequence of 41 word pairs, 3 word pairs mentioned in P and 1 word pair mentioned in P and H are missing; the list contains 3 word pairs that are missing in P and 1 that is absent from H. All in all, more similar to H.
Words beginning with וה that occur twice	64	63	84r	2 Sam 24:22	Incomplete; 35.5 word pairs as compared to 57 (H)/44 (P); א–ס (see third letter) of alphabetical list including the link verse as item 32a	In the same order as H except for word pairs 9 והבאתיך and 22 והוספתי מלעיל which are not found in H; all 35.5 word pairs are found in P but in a different order.[89]

86   By mistake, Joel 2:20 is repeated in word pair 21 instead of also mentioning Num 26:15. In word pair 39, item Josh 19:25 is missing by mistake.

87   Later on the same page, one more word pair Isa 1:6 and Judg 15:15 טריה from the same Okhla list happens to be mentioned, but in the form of a separate small masoretic note טריה ב' בתרי לישני.

88   The internal order of word pairs 6 and 8 is the reverse of what is found in H. Word pairs 12 and 13 are mentioned in reverse order in H.

89   The internal order of word pairs 14 and 15 is the reverse of what is found in H. Instead of word pair 22, H has 2 Kings 20:6 and Ps 71:14 מלרע והוספתי. H reads twice Ezra 3:6 והיכל instead of also Isa 44:28 by mistake as compared to item 25a in the manuscript. Item 35b Josh 22:32 והנשיאים is missing in MS Or. 2091.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
Words that occur twice starting with ה	65	64	345v	Est 1:1	Incomplete with 71.5 word pairs[90] as compared to 78 (H)/79 (P); א–ש of an alphabetical list; list includes link verse	Exactly the same order as H except for two consecutive word pairs which occur in reverse order; clearly different from P. Same items as H and P except that P lists הנמצאות Gen 19:15 and Judg 20:48, which is absent from the ms. and H.
Unique words beginning with י	68	67	335v	Song 1:2	Incomplete with 19 items as compared to 25 (H)/40 (P); א–צ of an alphabetical list; link verse missing (ישקני)	Same order as H except that יענה Job 37:23 and יפרה Isa 11:1 are missing from H (but present in P). The eight/eleven last items on the list in H/P (ק–ת) are missing in the ms. P has 9 items more than the ms. in the section א–צ; ignoring those, the order is mostly the same as in H and the ms.
Words beginning with וי that occur twice	69	68	132r	Jer 1:9	Incomplete; 20.5 word pairs compared to 24 (H) and 28 (P); full alphabet (third letter) with one word pair per letter, except for 14b 2 Sam 13:15 וישנאה, which is missing; list includes the link verse.[91]	Basically in the same order as H and P, but in this list there is maximum one word pair per letter of the alphabet and the letter ל is represented as opposed to H and P.[92]
Words beginning with מ that occur twice	70	69	245r	Joel 4:13	Incomplete; 20.5 word pairs compared to 22 (H) and 24 (P); the list includes the link verse	In the same order as H and P;[93] with the same word pairs as H; only מחים Isa 5:17 and Ps 66:15 word pair (H/P) is missing in ms.; further minor mistake with repeated item 2 Kings 19:23 instead of 2 Kings 3:19 in one word pair. P has two extra word pairs: משבימי Isa 5:11 and Ps 127:2 and משחת Mal 1:14 and Prov 25:26.

90　Of the last word pair only the first item is mentioned.

91　The letter י as third letter (ויי) is represented in none of the three sources.

92　As it happens, the letter ח is not represented in H either. The problematic word pair representing the ל of the alphabet is ויילנו, with insecure identifications of Ex 15:24 and 16:2 as the verses in which the word occurs.

93　However, one word pair is found in reverse order in H and P, plus one more in H.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
Ktiv ו in the middle of a word/Qre with י	72	81	38v	Judg 21:22	Incomplete; first 44/75; א–ל of alphabetical list exactly up to and including the link verse	In exactly the same order as H, clearly different from P.
		85				See below H 156 B
Ktiv without ה at the end of a word/Qre with ה	93	111	324r	Job 42:16	Complete 29/29	In exactly the same order as H, different from P; the same items as H and P.
Ktiv without ו at the beginning of a word where it should be read ו	103	117	345v	Lam 5:3, 5:7	Complete 12/12 as compared to 12/12 (H)/12/12 (P); list includes two link verses	Exactly same order as H; different from P. Same items in the ms., H and P.
Ktiv without ו at the end of a word/Qre with ו	105	119	38v	Judg 21:20	Complete 18/18	In exactly the same order as H, clearly different from P.
Ktiv with ו at the end of a word/Qre without ו	106	120	38v	(Judg 21:20)	Complete 11/11	9/11 items in the same order as H, different from P.
Ktiv without י in the middle/Qre with	112	128	256v	Hab 3:14	Incomplete 28/56 as compared to 55/56 (H)/56/56 (P); up to and including the link verse	In exactly the same order as the first part of H except for items Isa 56:10 and Isa 52:5, which are missing from H but not from P. With some minor exceptions, also same order as the first part of P, where three more items occur.[94]
Ktiv with ו at the end of a word/Qre with י	120	136	203r	Ezek 1:8	Complete 44/44 as compared to 47/44 (H)/47/47 (P);[95] list includes the link verse twice	In the same order as H, clearly different from P. The extra items in H and P are 2 Sam 18:13 (לעזור), 2 Kings 17:13 (נביאו) and Ps 119:79 (וידעו).

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94 Cf. the ambiguity in the ms., H and P as regards Ezek 40:22: according to BHS three items are relevant, i.e. וחלנו ואלמו ותימרו.

95 I.e. H and P mention respectively 44 and 47 items in the header. Jer 51:34 is counted as five items and Ps 71:20 as two.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
Ktiv with י at the end of a word/Qre with ו	121	137	203r	(Ezek 1:8)	More than complete 24/22 as compared to 22/24 (H)/24/24 (P); the link verse of the related previous list functions also here as link verse	In exactly the same order as H, clearly different from P. Jer 13:20 with two items (שאי, וראי) is missing from H.
מעשי occurs 11 times with י	135	--	132r	Jer 1:16	Incomplete 10/11	Enumerative; Ps 107:24 missing in the ms.
על ייי occurs 31 times	152 H	--	254r	Nah 1:11	Incomplete 30/31 as compared to 31/31 (H)	Enumerative; in the same order as H except for two consecutive items which occur in reverse order and one more item which occurs at a slightly different place compared to H; Num 27:3 missing in the ms.
Words that are once preceded by ואל	156 B	85	338r	Eccl 1:5	Incomplete with 31/32 items as compared to 30, 31 or 32/32 (H)/45/45 (P); list includes link verse	With some minor variations the same order and items as H; clearly different from P. The ms. lists ואל הארץ Ps 50:4, which is absent from H but found in P.
ואל/אל or ועל/על	161 H-I	--	132r	Jer	Complete 4/4, 1/1, but incomplete when it comes to Jeremiah as a whole: 161 J-K are missing	
לא or ולא at the beginning of a verse	162 A-B, E-J	--	1r	Josh 1:5, 8	Complete 9/9, 6/6, 14/14, 3/3, 2/2, 14/14, 2/2, 7/7, 8/8	Former Prophets, Isa, Jer/Ezek, Minor Prophets, Chron, Writings, Gen, Exod, Lev (Num, Deut missing)
	162 H-I		239r	Cf. Hos 7:14	Complete 3/3, 2/2	Minor Prophets, Chron; no link verse on the page or on the previous or next page
לא לא לא	164	--	239r	Hos 1:9	Incomplete 30/47 as compared to 47/47 (H); up to and including the Book of Ezekiel; the link verse is not reached	In the same order as H

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
לא ולא ולא	166	--	172v	Isa 1:6	Incomplete; 22/34 as compared to 34/34 in H; one more item does not fit the list (= mistake) plus another item remains unidentified; list includes the link verse	Very different order to what is found in H; item 2 Ex 19:13 is erroneous; item 21 Jer 3:16 containing לא ולא ולא ולא is not found in H. Very different order to what is found in H; the order is more like that on fol. 172v.
			258r	Zeph 3:13	More than complete; 35/34 items	This version of the list does not have the mistake Ex 19:13 but instead it has Lev 19:11 as item 2, as it does in H.[96] On the other hand it quotes 1 Kings 13:17 (BHS לא ולא לא) as against fol. 172v and H.
A word which only occurs once without ו at the beginning of a verse	--	175	243v	Joel 1:4	Complete 22/22 as compared to 22/22 in P	Very different order to what is found in P but the same items.
ועד and then עד in verse	--	321	1r	(Josh 1:4)	Complete 3/3	List there due to relation with P 322; see also OkhlaH2 139 B
ועד ועד in verse	--	322	1r	Josh 1:4	Complete 14/14	
עד and then ועד in verse	--	323	1r	(Josh 1:4)	Complete 7/7	List there due to relation with P 322; see also OkhlaH2 139 A
אין ואין	--	325	256v	(Hab 3:17)	Complete 10/10	List there due to relation with P 328; the same items as P, but in a slightly different order
אין אין	--	326	256v	(Hab 3:17)	Incomplete 15/16	List there due to relation with P 328; the same items as P except Ps 53:4 which is missing, but in a slightly different order
אין אין, whereby the first אין occurs at the beginning of the verse	--	327	256v	(Hab 3:17)	Complete 2/2	List there due to relation with P 328; same items and order as P

96   Another difference is that this version of the list does not make the mistake of quoting Deut 2:4 (see fol. 172v) instead of Josh 6:10.

Phenomenon	H	P	Fol.	Link verse	No. of items	Remarks
ואין ואין	--	328	256v	Hab 3:17	Complete 13/13	The same items as P, but in a different order
ואין ואין ואין	--	332	258r	Hag 1:6	Complete 3/3	Order and items same as P
וגם the third last word of the verse	--	357	268r	Ruth 1:12	Complete 11/11	Different order from P

APPENDIX 2

Overview of Okhla[H2] lists with some representation in MS Or. 2091

The numbers follow Ognibeni's edition.

Okhla[H2]	Fol.	Link verse	No. of items
1 B	84r	1 Kings 1:3	Incomplete 26/36
1 D	250r	Jonah 1:3	Complete 11/11; link verse is strangely enough missing, instead Gen 50:8 is erroneously quoted as the first item in the list.
1 E	338r	Song 8:11	'Incomplete' 13 or 14/15 as compared to 13/13 (H); list includes link verse. The item יביא את המנחה could not be identified in the Bible. Interestingly, the word המנחה also occurs in H and is deleted there. Same order and items as H.
	343r	Eccl 12:14	'Incomplete', 13 or 14/15 as compared to 13/13 (H); list includes link verse. Similarly to fol. 338r, the unidentified item המנחה appears in the list. Same order and items as H.
1 F	335v	Prov 31:14	Complete 13/13
3 D	270v	Ps 1:1	Incomplete 19/20; list includes link verse; 1 Kings 11:16 missing
3 K	345v	Lam 5:21	Complete 7/7
5 G	343r	Eccl 12:11	Complete 6/6
7 K	254r	Nah 1:7	Complete 3/3
10 A	132r	Jer 1:12	Complete 13/13
	251r	Jonah 4:2	Complete 13/13, in different order
10 E	132r	Jer 1:16	Complete 9/9
13 B	258r	Zeph 3:19	Incomplete 22/22 (עשה with segol except העשה) 1/1, (העשה with tsere), 7/8 (with tsere; the last item Prov 22:2 missing); first part of the list (but second in P) includes the link verse
13 E	343r	Eccl 12:14	Complete 10/10

Okhla[H2]	Fol.	Link verse	No. of items
14 E	38v	Judg 21:19, 1 Sam 1:3	Complete 5/5
18 J	345v	Est 1:1	Complete 5/5
22 B	363r	Dan 12:2	Complete 6/6
28 D	309r	Ps 149:2	Complete 3/3
31 A	363r	Dan 12:6	Complete 32/32 with the same difference with Weil 319 due to 2 Kings 22:15 missing
33 L	338r	Song 8:7	Complete 11/11
34 A	20r	Judg 1:4	Complete 11/11
41 B	172v	Isa 1:1	Complete 3/3
90 A	265v	Zech 14:18	Incomplete; אם/ואם at beginning verse; 10/10 (Gen-Exod), 17/18 (Num-Deut; Num 32:11 missing, also in H), 5/5 (Kings, Isa, Ezek, Ps, Eccl), 14/14 (Sam, Jer), 11/11 (rest incl. the link verse), 8/8 (אם לא at the beginning of the verse), 2/2 (Job)
93	255r	(Nah 3:11)	Incomplete 5/5 (Minor Prophets), 19/20 (Writings, last item missing), 5/5 (Pentateuch/Josh/Judg), 4/4 (Sam), 1/1 (Kings), 6/8 (Isa/Jer; last 2 items missing), 0/3 (Ezek); link verse shows a non-exceptional case so does not turn up in the list
103	1r	Josh 1:2	Incomplete 2/3
129	203r	Ezek 1:10	Complete 4/4
202	243v	Joel 1:14	Complete 3/3
215	250r	Jonah 1:6	Complete 5/5
222	335v	Song 1:2	Complete 20/20 as compared to H 22/22. Absent from the ms. are the H items Job 3:1 and Mal 2:7.
234	309r	Ps 148:14	Complete 8/8
310	324r	Job 42:11	Complete 3/3
311	20r	Josh 24:32	Complete 3/3

APPENDIX 3

Overview of Okhla-like lists

Phenomenon	Fol.	Link verse	No. of items	Remarks
לא לא ולא, the first one at the beginning of a verse	1r	Josh 1:5	6/6	Cf. H 162 A-B, E-J represented on 1r: ולא/לא at the beginning of a verse
את את את in verse	1r	Josh 1:11	8/8	All verses found in Joshua
ולו at the beginning of a verse	38v	1 Sam 1:2	4/4	
ישב or יושב	20r	Judg 1:9	4/4, 4/4, 1/1, 4/4, 5/5	Judg, Jer, Ezek, Psalms/Prov, Isa
A word occurs four times, the first time without preceding ו and the other times with	203r	Ezek 1:10	18/18	Item 18 (1 Chron 6:47 מטה) differs from item 18 (1 Chron 6:56 את) in Weil 3911
לא ולא לא	239r	Hos 2:1	17/17	
A word is repeated thrice in a verse, the first time without preceding ו and the other times with	243v	Joel 1:4	7/7	
ואת את ואת	250r	Jonah 1:9	7/7	
	265v	Mal 1:3	7/7	
Words uniquely spelled plene with ו	254r	Nah 1:2, 4	27; list includes link verses	Some interesting cases; list for once not in alphabetical order
Verses with once the accent dargā plus two ḥuṭrin	255r	Hab 1:3	14/14	
ושם at the beginning of a verse	268r	Ruth 1:2	13/13	
ושם ושם	268r	Ruth 1:2	7/7	The last one, the link verse Ruth 1:2, is mentioned separately as containing ושם ושם ושם.
הלא/א/הלוא in the Bible	380v	Neh 13:26	9/9, 13/13, 17/17 (but with issues), 6/6, 2/3	Writings, Pentateuch, Kings, Isa, Jer

APPENDIX 4

Overview of Aramaic mnemonics

David Marcus' Scribal Wit: Aramaic Mnemonics in the Leningrad Codex (Piscataway NJ: Gorgias Press, 2013) offers a good introduction to Aramaic mnemonics in Masora.

Fol.	Link verse	Biblical lemma	Hebrew catchwords	Aramaic mnemonic	No. of items	Translation
1r	Josh 1:1	ויהי אחרי מות	אברהם משה יהושע שאול	אבא רעיא שמשא ומלכא	4/4	Father (cf. אברהם in Gen. 25:11), shepherd (cf. משה in Josh. 1:1), servant (cf. יהושע in Judg. 1:1) and king (cf. שאול in 2 Sam. 1:1).
20r	Judg 1:1	ויהי אחרי מות	אברהם משה יהושע שאול	אבא רעיא שמשא ומלכא	4/4	Same
84r	2 Sam 24:24	אעלה	מלאך ואמר האשה ארונה ארכה אכסה קטרת ירושלם	אמר מלאכה לאנתתי דארונה אריך למכסיא קטורתא דירושלם	8/8	The angel (cf. מלאך in Judg 2:1) said (cf. ואמר in Ex 3:17) to my wife (cf. האשה in 1 Sam 28:11) that the ark (cf. ארונה in 2 Sam 24:24) is fit (cf. ארכה in Jer 30:17) to cover (cf. אכסה in Jer 46:8) the incense (cf. קטרת in Ps 66:15) of Jerusalem (cf. ירושלם in Ps 137:6).
84r	1 Kings 1:2	וחם	המלך ישכבו השמש	דמך מלכא בשמשא	3/3	The king (cf. המלך in 1 Kings 1:2) lay (cf. ישכבו in Eccl 4:11) in the sun (cf. השמש in Ex. 16:21).
243v	Joel 1:14	וזעקו	לכו הרעים קדשו	אזלו רעיא וקדישו	3/3	Go (cf. לכו in Judg 10:14), (ye) shepherds (cf. הרעים in Jer 25:34), sanctify (cf. קדשו in Joel 1:14)