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Paleographic Style and the Forms and Functions of the Dead Sea Psalm Scrolls: A Hand Fitting for the Occasion?

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Abstract

In this article I apply stylistic paleographic analysis to the Dead Sea Psalm scrolls, proposing conventional usage registers for different types and levels of scripts. I argue that more formal scripts were normally used for large presentation copies of known versions of the Davidic psalter, while less formal scripts were frequently used for smaller, textually distinctive manuscripts. This observation aids in the interpretation of the forms and functions of the majority of Dead Sea Psalm scrolls that follow this pattern and highlights exceptional cases worthy of further investigation.

Keywords

Hebrew paleography – stylistic analysis – Dead Sea scrolls – Psalms – textual criticism

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I wondher why ye can always read a doctor's bill
an' ye niver can read his purscription.

MR. DOOLEY¹

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1 Dunne, "Drugs," 93–94.

1 Introduction

The Dead Sea Psalm scrolls have been frequently studied with regard to their text forms, and recent years have seen increasing calls for considering the form and function of each manuscript on its own terms.² Yet the relevance of script for evaluating the forms and functions of the Dead Sea Psalm scrolls has largely been overlooked in previous studies, despite the fact that the handwriting is some of the most direct and important material evidence available for the production of each particular manuscript.

In the analysis below I systematically classify the 35 Dead Sea Psalm scrolls sufficiently well preserved for stylistic paleographic analysis based on: 1) script, 2) manuscript format, and 3) textual contents.³ I situate these hands within what I propose to be the conventional usage registers for the early Jewish Hebrew/Aramaic scripts. I then demonstrate a correlation between script and manuscript format in the corpus of Dead Sea Psalm scrolls, as well as between script and textual contents. From this I argue that the formal hands normally indicate large, professionally-produced copies of the Davidic psalter suitable for presentation and communal reading. On the other hand, the relatively informal hands should normally be considered small personal productions, which might in some cases help explain their distinctive contents.

2 Stylistic Classification

In the study of the early Jewish Hebrew/Aramaic scripts, the classification system of Frank Moore Cross has been most influential.⁴ Cross's model has much to commend itself, but it also has serious ambiguities and drawbacks that limit

2 Especially, Fabry, "Der Psalter in Qumran," 159–160; Jain, *Psalmen oder Psalter?*; Pajunen, "Perspectives," 163; Mroczek, *Literary Imagination*, 32; Willgren, *Formation*.

3 These scrolls are: 1Q10 (1QPs^a), 1Q11 (1QPs^b), 1Q12 (1QPs^c), 2Q14 (2QPs), 3Q2 (3QPs), 4Q83 (4QPs^a), 4Q84 (4QPs^b), 4Q85 (4QPs^c), 4Q86 (4QPs^d), 4Q87 (4QPs^e), 4Q88 (4QPs^f), 4Q89 (4QPs^g), 4Q90 (4QPs^h), 4Q91 (4QPsⁱ), 4Q92 (4QPs^k), 4Q93 (4QPs^l), 4Q94 (4QPs^m), 4Q95 (4QPsⁿ), 4Q96 (4QPs^o), 4Q97 (4QPs^p), 4Q98 (4QPs^q), 4Q98a (4QPs^r), 4Q98b (4QPs^s), 4Q98c (4QPs^t), 4Q98f (4QPs^w), 4Q98g (4QPs^x), 5Q5 (5QPs), 8Q2 (8QPs), 11Q5 (11QPs^a), 11Q6 (11QPs^b), 11Q7 (11QPs^c), 11Q8 (11QPs^d), 5/6Hev1b (5/6HevPs), Mas1e (MasPs^a), and Mas1f (MasPs^b). Because of the minimal evidence, I have excluded 4Q98d (4QPs^u), 4Q98e (4QPs^v), 6Q5 (6QPs), and 11Q9 (11QPs^e). So also 4Q98h (4QPs^y), published by Tigchelaar, "A Qumran Cave 4 Fragment." Scrolls containing only one psalm from the Davidic psalter in demonstrably different literary contexts—like 11Q11 (11QapocrPs) and 4Q522 (4QProphecy of Joshua)—require further separate research.

4 See Cross, "Development," 3–43.

its usefulness for synchronic stylistic analysis.⁵ I have proposed an alternative system of script classification (see illustrations in Figure 1 below) and suggested that analyzing the respective usage registers of different script types and levels of formality might yield important new insights into the purposes for which manuscripts were created.⁶

In this article, I will explore the implications of the handwriting for evaluating the forms and functions of the Dead Sea Psalm scrolls, using the definitions of formality, script types, and levels of execution worked out in my 2019 *COMSt Bulletin* article. I have classified each of the 35 Dead Sea Psalm scrolls sufficiently well preserved for stylistic analysis (see Table 1 below, as well as Appendix A for more quantitative substantiation and visualization).

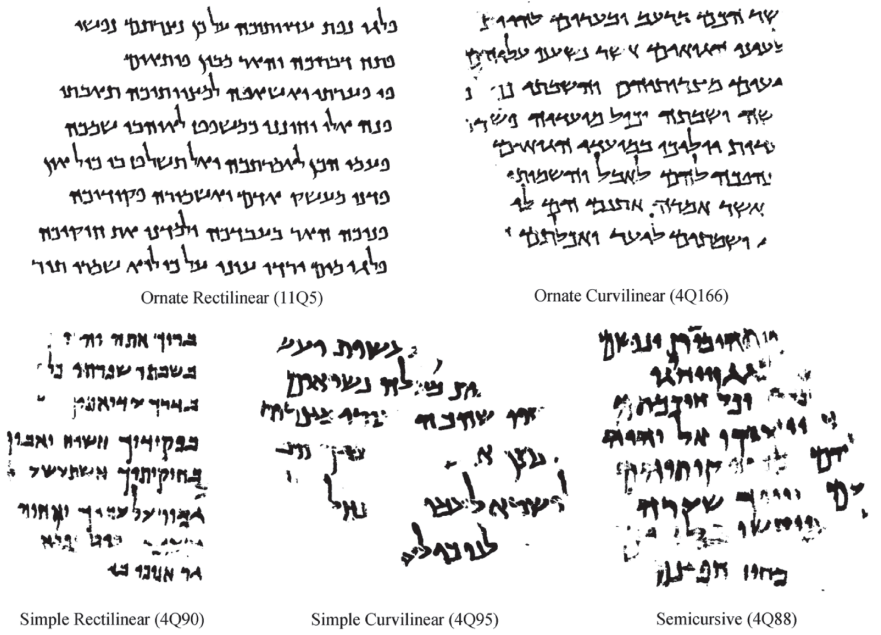


FIGURE 1 Examples of non-Cursive script types

5 E.g., Sirat, “Les manuscrits,” 275, argues that Cross’s schema does not sufficiently account for synchronic diversity.

6 See Longacre, “Disambiguating.”

TABLE 1 Stylistic classification of the Dead Sea Psalm scrolls

		Levels of Execution					
		Calligraphic		Common		Current	
Ancient Jewish Hebrew/Aramaic Script Types	(Quasi-)Square	Ornate Rectilinear	Formal 1Q11 3Q2 4Q85 4Q87 4Q89 4Q91 4Q98b 4Q98c 5Q5 8Q2 ^a 11Q5 11Q6 11Q7 11Q8 5/6Hev1b Mas1e Mas1f	Semiformal	Semiformal	Informal	n/a
		Ornate Curvilinear	Formal 2Q14 4Q97 ^b	Semiformal 4Q98	Semiformal	Informal	n/a
		Simple Rectilinear	Formal 4Q92 4Q98a	Semiformal 4Q84 ^c	Semiformal 4Q86 ^d 4Q90 ^e 4Q94 ^f	Informal 1Q12	n/a
		Simple Curvilinear	n/a	Semiformal 1Q10 4Q83 4Q96	Semiformal	Informal 4Q93 4Q95 4Q98g ^g	Informal
		Semicursive	n/a			Informal	Informal 4Q88 4Q98f
	Cursive	Cursive	n/a			Informal	Informal
		Extreme Cursive	n/a			n/a	Informal

- a The minimal remains of 8Q2 make it difficult to gain an overall appreciation of the quality of the hand, but it is clearly angular, ornamented, and somewhat regular.
- b The poor preservation of the fragments of 4Q97 makes analysis difficult, but the visible traces suggest regularity and the preponderance of rounded strokes.
- c The scribe of 4Q84 seems to have been trying to produce a formal script, but frequent irregularities and curved strokes indicate a somewhat inferior hand.
- d 4Q86 is fairly neat and legible, but lacks the regularity and calligraphic quality characteristic of more formal hands.

- e The scribe of 4Q90 clearly attempted to write neatly and legibly, but lacked the regularity and calligraphic quality characteristic of more formal hands.
- f 4Q94 is a fairly neat but somewhat irregular hand.
- g 4Q98g is a very carelessly written early informal hand with cursive influences, but it lacks the particular cursive forms typical of the developed Semicursives.

3 Usage Registers

The significance of these classifications is only evident against the backdrop of conventional usage. The choice of script type and the care with which scripts are written reflect the pragmatic priorities of writers. These decisions often conform to conventional usage registers, where different types and levels of scripts are considered appropriate for different contexts and functions. For instance, in Greek handwriting from the period, the clear distinction between formal literary hands and cursive documentary hands is generally considered fundamental to script classification.⁷

Scholars of the Dead Sea scrolls have long observed that formal scripts were generally preferred for nice literary manuscripts, hence the label “book hand.”⁸ Pragmatically, the clarity of their scripts would have made them easily readable to any sufficiently educated readers.⁹ Furthermore, formal book hands would have been especially appropriate for aesthetic and prestigious presentation copies suitable for display and reading in wealthy homes and communal gatherings for study, liturgical performance, or perhaps even entertainment.¹⁰ The most formal examples are predominantly rectilinear, which identifies the Ornate and (in earlier periods) formal Simple Rectilinear script types as the highest level of calligraphic book script.

This stands in stark contrast to the Cursive scripts, which are normally used in non-literary (especially legal, administrative, and epistolary) documentary

7 See Cavallo and Maehler, *Hellenistic Bookhands*, 6–17. In Longacre, “Comparative,” I further address the relevance of the comparative material and the influence of Greco-Roman writing culture on developments in the Jewish Hebrew/Aramaic scripts.

8 E.g., Cross, “Development,” 3–4 et passim; Yardeni, *Book of Hebrew Script*, v et passim.

9 Cf. Pajunen, “Reading Psalms,” who emphasizes the importance of legibility based on measurements of script size and spacing between words, lines, and poetic units. His approach nicely complements the stylistic focus of this article.

10 See Popović, “Qumran as Scroll Storehouse,” 575; Wise, *Language and Literacy*, 303–304; cf. Hezser, *Jewish Literacy*, 452–458. For the concept of extremely high-grade scrolls, see the *Letter of Aristeas* §176.

contexts in the Dead Sea scrolls. Between the opposite poles of the finest calligraphy and the tachygraphic Cursives there remain a large number of intermediate hands whose usage registers are more difficult to discern.¹¹ Here I propose to differentiate two further levels of conventional script register for these intermediate hands.

First, the writing of literary texts in the elegant and stylish (but usually semiformal, and in later periods ornate) curvilinear scripts with wavy, undulating strokes could be explained in one of three ways: aesthetic preference, scribal background, or functional register. Some of them have a regularity and elegance that could occasionally have aesthetically rivalled formal rectilinear scripts.¹² The selection of wavy, curvilinear forms may then have been a subjective artistic choice, made according to the preferences and tastes of scribes or patrons. The difficulty with this is that most examples of these scripts do not achieve the highest levels of formality, and they are not normally used for copies of the Hebrew scriptures (Psalms or otherwise).

Alternatively, these hands may reflect a preferred scribal practice in certain circles or schools. Since the vast majority of Ornate Curvilinear hands from the Judean Desert come from manuscripts from Qumran, one could reasonably argue for a connection with the Qumran community. But some Ornate Curvilinear hands have been found outside of Qumran,¹³ and only roughly 15–20% of the manuscripts from the Qumran finds are written in Ornate Curvilinear hands. Furthermore, the use of similar wavy strokes is attested in very early scrolls found at Qumran (e.g., 4Q83 and 4Q504 [4QWords of the Luminaries^a]), as well as in later semiformal hands of the 2nd–5th centuries CE (e.g., P. Cologne Inv. 5853),¹⁴ which might suggest that this type of writing was more widespread in the Second Temple period than is currently attested.

11 See also Yardeni, *Book of Hebrew Script*, 57; Yardeni, *Textbook*, [156].

12 Cf. Cross, “Development,” 32 n. 140, who describes it as “properly a flourished, readily written variety of the formal book hand.” Yardeni, *Book of Hebrew Script*, 57, treats such hands as formal variants of the calligraphic book script. Tigchelaar, “Scribal Practices,” 2, explicitly problematizes the modifier “semi-”formal, supposing that the so-called Round Semiformal (i.e., my Ornate Curvilinear) could be a fully formal script.

13 Mas1l (MasapocrJosh) was written in an Ornate Curvilinear hand, but Yardeni, “Note,” 287–298, suggests that this scroll was written by a prolific scribe well-known from the Qumran scrolls. Perhaps also Mas1 (MasGen), according to Eibert Tigchelaar in a forthcoming work.

14 See Longacre, “Reconsidering,” 54–56.

Perhaps the best explanation is simply that these elegant curvilinear hands functioned as a lower literary register.¹⁵ They are infrequently used for quality copies of the scriptures that were later included in the Hebrew Bible, but they are very common in other literary manuscripts.¹⁶ According to Tigchelaar, these scripts are used almost exclusively for non-biblical Hebrew manuscripts with full orthography and long morphological forms,¹⁷ which suggests to me a non-classical literary register.¹⁸ While not generally attaining to the highest standards of professional literary production expected for presentation copies of classical literature, these hands were nevertheless clearly and elegantly written by skilled (in most cases probably professional) writers in order to be legible and useful for others.¹⁹

Second, further distinguishing a class of non-calligraphic, non-Cursive common hands also helps clarify the possible usage registers for these scripts. In contrast to the predominantly formal or semiformal literary scrolls from the Judean Desert, informal (Quasi-)Square hands are best known from inscriptions, ostraca, abecedaries, name lists, and personal signatures.²⁰ In other words, non-Cursive informal writing was simply the normal type of everyday writing used by the majority of writers of various skill levels for most practical purposes without aesthetic pretense.

Thus, I suggest that the contemporary classes of handwriting in the Hellenistic and early Roman Hebrew/Aramaic Jewish scripts entailed three basic conventional functional registers (see Table 2): 1) formal, professional, calligraphic, and (in late stages) ornate literary book scripts in two levels (1a—the highest level—is strictly rectilinear; 1b is elegant but curvilinear with wavy strokes); 2) simple, common, everyday personal hands of various skill

15 For an example of an explicit three-tiered division along a spectrum of handwriting quality, see the famous Diocletian price edict cited in Turner, *Greek Manuscripts*, 1.

16 Cross, “Development,” 32, e.g., notes that the Round Semiformal (i.e., my Ornate Curvilinear) is “extremely popular,” but that “relatively few are biblical.”

17 See Tigchelaar, “Scribal Practices,” who also observes the free execution of these hands and the frequent use of non-final letter forms in final position.

18 For a helpful discussion on the delineation of classical literature in the period, see Crawford, *Scribes and Scrolls*, 219–223.

19 Compare the similar situation in late antique Hebrew scripts, where semiformal curvilinear hands were common, but apparently were not used for prestige copies of the scriptures like EGLev and Oxford, Bodleian Library, Ms. Heb. d.89 (P) i; see Longacre, “Reconsidering.”

20 For examples of the inscriptions, see Cross, “Excursus,” 217–219; Lemaire, “Inscriptions.” For the learning exercises and signatures in particular, see Wise, *Language and Literacy*, 57–60, 357–391.

TABLE 2 Functional registers over time

			III-I BCE	I BCE to II CE
Functional Register	Literary Scripts	1a High Level	Formal Simple Rectilinear	Ornate Rectilinear
		1b Mid Level	Semiformal Simple Curvilinear	Ornate Curvilinear
	Common Scripts	2 Low Level	Informal Simple Rectilinear	Simple Rectilinear
			Informal Simple Curvilinear	Simple Curvilinear
Documentary Scripts	3 Low Level	Semicursive	Cursive	

levels; and 3) professional legal or administrative documentary scripts. In most cases, these categorical divisions were more likely to be conventional and preferential than formalized and regulated. Furthermore, well-educated and practiced writers may have been skilled in multiple styles of handwriting.²¹ Thus, blurred boundaries and exceptional crossovers between these categories are not entirely unexpected or particularly problematic for the overall picture.²² The existence of these different registers in large part explains the coexistence of multiple, discrete writing styles in the same region over such an extended period of time, thereby elucidating the most important synchronic style differences evident in the early Jewish scripts.

The corpus of Psalm scrolls from the Judean Desert illustrates well the distinction between literary and documentary hands, since not one of them is written in a truly Cursive script. In contrast, of the Dead Sea Psalm scrolls written in formal scripts, 90% (= 19/21) are rectilinear, and 90% (= 19/21) are ornate scripts. Thus, the majority of the Psalm scroll scripts seem to fall into this highest literary register (1Q11 3Q2 4Q85 4Q87 4Q89 4Q91 4Q98b 4Q98c 5Q5 8Q2 11Q5 11Q6 11Q7 11Q8 5/6Hev1b Mas1e Mas1f; possibly also the unornamented 4Q92 and 4Q98a, the inferior quality 4Q84, and the relatively curvilinear 2Q14 and 4Q97). A relatively small number of Dead Sea Psalm scrolls seem to have been written in the second-tier literary register (1Q10 2Q14 4Q83 4Q96 4Q97 4Q98; possibly also the relatively rectilinear 4Q84).

I classify nine of the Dead Sea Psalm scrolls within the broad register of common, everyday writing (1Q12 4Q86 4Q88 4Q90 4Q93 4Q94 4Q95 4Q98f 4Q98g). This does not mean that the writers of the Psalm scrolls in relatively

²¹ See Sirat, *Writing as Handwork*, 314.

²² Cf. the similar picture with regard to Greek hands in Turner, *Greek Manuscripts*, 1–4; Cavallo and Maehler, *Hellenistic Bookhands*, 6–7.

informal, personal hands were necessarily lay or unskilled. Rather, the contents of the manuscripts and the skillful fluency with which most of them were written suggest intimate familiarity with the texts and substantial training and experience in writing. Even the most careless examples like 4Q98g were evidently written by practiced writers, perhaps as memory exercises or notes. As I will demonstrate below, many of the less formal hands are found on relatively small manuscripts with distinctive textual contents, which is suggestive of intellectual engagement and creative contribution. The combination of highly skilled but non-calligraphic handwriting with frequent indications of high-level intellectual interaction with the textual contents suggests that these manuscripts were personal or working copies written by and/or for interested scholars that were probably never intended for public dissemination.²³ Similar usage of inelegant but fluent handwriting for scholarly manuscripts has been well-documented in both contemporary Greco-Roman and later Jewish Hebrew/Aramaic writing practices.²⁴ In the case of the parallels, scholarly texts are often more creative, interventionist, and idiosyncratic than professional scribal productions of more elegant presentation copies, which also seems to be the case among the Dead Sea Psalm scrolls.

Thus, the handwriting of the Dead Sea Psalm scrolls simultaneously reflects pragmatic and conventional concerns and, at the same time, signals to potential readers appropriate usage contexts. As will become evident in sections 4 and 5, the choice of script register in this corpus depends in large part upon the nature of the manuscript each writer intended to create, which is reflected both in manuscript format and textual contents.

23 See, similarly, Norton, "Question"; Popović, "Qumran as Scroll Storehouse," 576–578; Wise, *Language and Literacy*, 329–330; Popović, "Reading"; Hempel, "Reflections"; Crawford, *Scribes and Scrolls*, 260–261.

24 On the many parallels between Greco-Roman and early Jewish scholarship, see Hartog, *Pesher and Hypomnema*. Of informal writing, Sirat, *Writing as Handwork*, 315, asserts, "This was the standard tool of intellectual activity until the spread of typewriters and especially personal computers ... The informal family is the common one, used to draw up a draft, write a list, or copy a text rapidly ... [M]any books copied for readers were written in fluent personal scripts that we would consider as fit only for personal notes." Turner, "Scribes and Scholars," associates practiced informal handwriting with other features as indicative of scholars' texts. These other features include careful correction and collation of texts, good Greek language, marginal notes, the occasional use of the verso of papyri, and sometimes the use punctuation or critical signs. In her survey of annotated Greek and Latin manuscripts, McNamee, *Annotations*, 16, 21, 24, 30, 37, 45–47, concludes similarly that scholars' personal manuscripts are usually written in relatively skilled but informal handwriting. See McDonnell, "Writing"; Houston, *Inside Roman Libraries*, 13–14, 26–28, on scholars' writing their own works or making copies of others' in their own hands.

4 Manuscript Format

One important factor in evaluating the forms and functions of the Dead Sea scrolls is their format, which is comprised of their physical size and layout.²⁵ Particularly large dimensions and margins have frequently been associated with fine calligraphic handwriting and luxury manuscripts.²⁶ On the other hand, small manuscripts have frequently been associated with personal, liturgical, educational, or ritual contexts.²⁷ Given the fragmentary nature of the remains of the Dead Sea Psalm scrolls, it is usually impossible to reconstruct the scrolls completely and reliably,²⁸ but often there remain enough features to make warranted suggestions about their original size and layout. Building on the measurements and reconstructions suggested in the respective principal editions and by Eva Jain,²⁹ I have produced my own preferred reconstruction of each of the scrolls (see Appendix B). I have then classified the 27 sufficiently well-preserved Dead Sea Psalm scrolls into three different typical formats, which I define as follows (see Appendix C for the justifying evidence used in these classifications).³⁰

Large-format scrolls are characterized by: scroll height of > 20 cm; top and bottom margins measuring > 1.5 cm each; wide columns (in the majority of cases > 10 cm, not infrequently 6–10 cm); and they are frequently well-enough preserved to suggest reconstructions of lengths ≥ 3 m. Thirteen manuscripts can be classified as large-format (4Q83 4Q85 4Q87 4Q92? 4Q98 4Q98b 8Q2 11Q5 11Q6 11Q7 11Q8 5/6Hev1b Mas1e).

Medium-format scrolls are characterized by: scroll height of 12–20 cm; columns almost always < 10 cm in width; top and bottom margins usually

25 Cf. Krauß, “Zwischen Literatur und Liturgie.”

26 E.g., Tov, *Scribal Practices*, 125–129; Davis, “High Quality Scrolls”; Tigchelaar, *Beautiful Bookhands*.

27 E.g., Tov, “Excerpted and Abbreviated Biblical Texts”; Tov, *Scribal Practices*, 90; Tigchelaar, “Material Variance,” 5–6.

28 See Jain, *Psalmen oder Psalter*, 216–220, 299.

29 The Dead Sea Psalm scrolls are published in DJD volumes 1, 3, 4, 16, 23, and 38, with the exception of the Masada fragments, which are published in Talmon, “Hebrew Fragments.” See also Jain, *Psalmen oder Psalter*, for attempted reconstructions of all of the scrolls.

30 I usually treat scroll height as the most indicative factor. Cf. the similar size classifications of Tov, *Scribal Practices*, 74–104. Eight manuscripts for which insufficient evidence has been preserved are simply labelled as indeterminate (1Q11 1Q12 4Q95 4Q96 4Q97 4Q98c 4Q98f Mas1f). The heights of these scrolls cannot be confidently reconstructed, and the column width alone is insufficiently indicative to distinguish the different formats identified here. Question marks indicate ambiguities in the evidence that lead to uncertainty in the classification.

TABLE 3 Manuscript format and script formality

Script Formality	Manuscript Format			
	Indeterminate	Small	Medium	Large
Formal	1Q11 4Q97 4Q98c Mas1f	4Q89 5Q5	2Q14? 3Q2? 4Q91? 4Q98a?	4Q85 4Q87 4Q92? 4Q98b 8Q2 11Q5 11Q6 11Q7 11Q8 5/6Hev1b Mas1e
Semiformal	4Q96	4Q94?	1Q10? 4Q84 4Q86 4Q90	4Q83 4Q98
Informal	1Q12 4Q95 4Q98f	4Q98g	4Q88 4Q93	

measuring < 1.5 cm each; and often reconstructable lengths of > 1 m. Ten manuscripts can be classified as medium-format (1Q10? 2Q14? 3Q2? 4Q84 4Q86 4Q88 4Q90 4Q91?³¹ 4Q93 4Q98a?³²).

Small-format scrolls are more difficult to classify, since they are few in number in this corpus and do not share a clear and consistent profile. Nevertheless, they can be roughly stated to be smaller than the typical medium-format scrolls in terms of height (usually < 12 cm) and/or length and have column widths of < 10 cm. Four manuscripts can be designated as small-format (4Q89 4Q94? 4Q98g 5Q5).

Comparison between manuscript format and script formality (see Table 3) shows that the corpus of Dead Sea Psalm scrolls conforms well to the hypothesis of a relationship between script and format. Of the manuscripts confidently classified as large, 83% (= 10/12) are written at the highest level of formality, and the only two exceptions (4Q83 4Q98) are among the most elegant of curvilinear semiformal. On the other hand, all five of the confidently classified medium-format manuscripts are written in simple semiformal or informal handwriting. The few small-format manuscripts are divided between simple, relatively informal hands (4Q94? 4Q98g) and calligraphic copies of Ps 119 (4Q89 5Q5), the latter of which seem to represent a special case in this corpus.

31 Jain, *Psalmen oder Psalter*, 119–121, plausibly reconstructs columns of 14 lines for 4Q91 based on similarities in the shapes of frgs. 3–5 and 8, but the columns are somewhat wider than usual for medium-format scrolls.

32 4Q98a can alternatively be reconstructed with taller columns, but it is here classed as medium-format because of the small margins and narrow columns.

In other words, the finest calligraphy was generally reserved for large and exquisite scrolls, while smaller manuscripts with shorter texts were more often written in relatively informal handwriting. Nevertheless, the skilled fluency of personal hands written by scholars facilitated frequent and extensive writing, so sometimes somewhat longer texts were also written in a fast and simple manner.

5 Textual Contents

The question naturally arises whether the observed correlation between script formality and manuscript format can aid in the interpretation of the textual contents of the Dead Sea Psalm scrolls.³³ The diverse contents and arrangements of these scrolls have been frequently discussed in the literature and need not be rehearsed in detail here.³⁴ I argue that the Dead Sea Psalm scrolls can be profitably categorized in terms of their specific relations to known versions of the written Davidic psalter tradition, as exemplified by the (proto-)MT and 11Q5 psalters.³⁵ I classify the manuscripts based on general contents and arrangement, rather than small textual details. Thus, I consider collections to differ from each other whenever there is at least one demonstrable incompatibility in which psalms were included and in which order. All of the manuscripts that apparently had only one psalm were necessarily very different in contents from the full psalters from this perspective, and so they are classified as a separate category of divergent manuscripts. Manuscripts with preserved

33 Cf. Krauß, "Zwischen Literatur und Liturgie," 55–73.

34 E.g., Flint, *Dead Sea Psalms Scrolls*; Wilson, *Editing*; Lange, *Handschriften*; Jain, *Psalmen oder Psalter*; Willgren, *Formation*. In this article, I will only address problematic or controversial cases as needed.

35 In a forthcoming article entitled "The 11Q5 Psalter as a Scribal Product: Standing at the Nexus of Textual Development, Editorial Processes, and Manuscript Production," I argue that the 11Q5 psalter was presented and received as a revised and expanded version of the written Davidic psalter tradition. All of the psalms and major editorial features of the proto-MT psalter are evident or presupposed in the 11Q5 psalter, which suggests that the compiler of the 11Q5 psalter supplemented and rearranged a proto-MT base text without omitting any psalms. The net result is a new version of the full Davidic psalter, rather than a different work like an incipient prayer book. On the basis of 4Q87, 11Q5, and 11Q6, I define the contents and arrangement of the 11Q5 psalter as follows: Pss ... 76→77→78 ... 81 ... 86 ... 88[→]89 ... 101→102→103 ... 109 ... 114[→]115→116 ... 118→104→147→105→146→148→[120]→121→122→123→124→125→126→127→128→129→130→131→132→119→135→136+cat→145+→154→Plea→139→137→138→Sir51→ApostZion→93→141→133→144→155→142→143→149→150→Hymn→2Sm23→DavComp→140→134→151A→151B.

evidence for only a single psalm—but for which there is no positive evidence that these manuscripts originally contained only that psalm—are labelled as indeterminate, since they do not preserve evidence that is useful for macrostructural comparison. In this way, the Psalm scrolls can be classified as on Table 4.

TABLE 4 Textual contents and script formality

Script Formality	Textual Contents					
	Single Psalm	Indet.	Collections Different from MT and 11Q5 Psalters	Collections Consistent only with 11Q5 Psalter	Collections Consistent only with MT Psalter	Collections Consistent with MT and 11Q5 Psalters
Formal	4Q89 ^a 5Q5 ^b	4Q97 4Q98c Mas1f ^c	4Q92 ^d	4Q87 11Q5 11Q6	2Q14? ^e	1Q11 3Q2 ^f 4Q85 4Q91 4Q98a 4Q98b 8Q2 11Q7 11Q8 5/6Hev1b Mas1e
Semiformal	4Q90 ^g		4Q84? ^h 4Q86 ⁱ	4Q83? ^j 4Q98? ^k	4Q94? ^l	1Q10 4Q96
Informal	4Q93 ^m 4Q98g ⁿ	1Q12 4Q98f	4Q88 ^o			4Q95 ^p

a 4Q89 probably only contained Ps 119.

b 5Q5 probably only contained Ps 119.

c Mas1f has been reconstructed by Talmon, “Hebrew Fragments,” 91–97, with the sequence Pss 147→[148]→[149]→150 (with MT) at the end of the last inscribed sheet of the scroll, which would be in conflict with the 11Q5 psalter. But Talmon’s reading of the traces identified as coming from Ps 147 is clearly in error. In a forthcoming work, Eibert Tigchelaar proposes an alternative identification and reconstruction that would imply that Mas1f was much smaller than Talmon supposed. A smaller reconstruction could be supported by its unusually narrow columns.

d In 4Q92, Ps 99 follows Ps 135, but it is unclear how to reconstruct the lacuna between them. Skehan, Ulrich, and Flint, “92. 4QPs^k,” 123; Jain, *Psalmen oder Psalter*, 123, 125, each reconstruct one or more psalms between Pss 135 and 99 on the supposition that the wide columns require a large column height. But it is also possible to reconstruct a short scroll with the

- direct transition Pss 135[→]99. Either way, 4Q92 must be reconstructed contra both the MT and 11Q5 psalters. Since Ps 136 could reasonably be reconstructed between Pss 135 and 99, 4Q92 could have agreed with 4Q95.
- e 2Q14 preserves fragments only of Pss 103 and 104, suggesting that they may have been juxtaposed as in the MT psalter, rather than far removed as in the 11Q5 psalter. This arrangement would also contradict 4Q84.
 - f Only parts of Ps 2 have been preserved, but the single fragment of 3Q2 must have been preceded by another column (and thus probably Ps 1 as well).
 - g 4Q90 may have only contained Ps 119.
 - h 4Q84 evidences the join Pss 103→112 contra MT (and probably 2Q14). Ps 109 (lacking or moved in 4Q84) is preserved in a separate fragment in 11Q5, and it is usually placed between Pss 103 and 112 in reconstructions. This reconstruction is uncertain, however, and it is also possible that 11Q5 originally had the join Pss 103→112 like 4Q84, while Ps 109 was located elsewhere. In 4Q84, Ps 93 is preserved in the same position as in MT. In 11Q5 it is found between the Apostrophe to Zion and Ps 141, but it is not clear whether or not Ps 93 also occurred in its MT position in the lacunose portions of the 11Q5 psalter. Thus, I consider 4Q84 to be clearly in disagreement with MT, and possibly inconsistent with the 11Q5 psalter, though the latter cannot be demonstrated conclusively. The join Pss 103→112 may also contradict 4Q88, which preserves psalms within this span.
 - i 4Q86 evidences the joins Pss 106?→147→104 against both the MT and 11Q5 (Pss 104→147) psalters.
 - j 4Q83 preserves the joins Pss 31→33 (in agreement with 4Q98) and Pss 38→71 contra MT, but it does not overlap with preserved parts of the 11Q5 psalter.
 - k 4Q98 preserves the join Pss 31→33 (in agreement with 4Q83) against the MT psalter, but it does not overlap with preserved parts of the 11Q5 psalter.
 - l 4Q94 appears to have had Ps 93 in the same position as MT and 4Q84. Ps 93 occurs in a different position in the 11Q5 psalter, but it is not entirely clear whether Ps 93 was lacking in the 11Q5 psalter at its position in MT, 4Q84, and 4Q94.
 - m 4Q93 may have only contained Ps 104.
 - n 4Q98g probably only contained a version of Ps 89.
 - o 4Q88 contains at least two psalms not included in the MT or 11Q5 psalters (Eschatological Hymn and Apostrophe to Judah) and may have differed in other ways, both in terms of contents and arrangement. The preservation of Pss 107 and 109 may also contradict the join Pss 103→112 of 4Q84.
 - p Parts of Pss 135 and 136 are preserved on different fragments in 4Q95. The DJD editors introduce unfortunate confusion by suggesting that fragments 2–3 preserve the direct transition 135:11–12→136:23–24, which has given rise to much unnecessary speculation about the redaction of these psalms. What the editors label as 135:11–12 is more plausibly identified as the closely parallel text of 136:20–22 with minor harmonizations to Ps 135.

When comparing script formality with textual contents, an interesting correlation appears. Formal hands are typically used for collections consistent with known versions of the written Davidic psalter, whereas scrolls differing in contents from both the MT and 11Q5 psalters are often written in less formal hands. 71% (= 15/21) of collections consistent with known versions of the Davidic

psalter are written in formal hands. Five out of twenty-one are written in semi-formal hands, four of which (1Q10 4Q83 4Q96 4Q98) I classified as calligraphic in section 2. Furthermore, three of the semiformal examples (1Q10 4Q94 4Q96) are poorly preserved and may have been medium or small manuscripts. The lone informal hand (4Q95) is similarly poorly preserved, and its contents cannot be confidently reconstructed. Thus, on material grounds, many of the less formal examples listed as consistent with known versions of the psalter are in fact unlikely to have actually been copies of a version of the psalter, which reinforces the observed correlation between script formality and textual contents. It is also noteworthy that there is no apparent difference in the treatment of copies of the proto-MT and 11Q5 psalters, which supports my contention that the 11Q5 psalter was recognized as another version of the Davidic psalter.

On the other hand, three out of four of divergent collections are written in semiformal (4Q84 4Q86) or informal hands (4Q88). If we include manuscripts that apparently contained only a single psalm—and thus diverged from versions of the psalter in their selectivity—then 67% (= 6/9) of divergent manuscripts are written in semiformal (4Q84 4Q86 4Q90) or informal (4Q88 4Q93 4Q98g) hands. Of the three semiformal hands, I classified only 4Q84 as calligraphic (though notably not ornate), but 4Q86 and 4Q90 as common. All are medium-format manuscripts that are unlikely to have contained the entire psalter. Conversely, three out of eight semiformal hands and three out of four informal hands preserve contents differing from known versions of the Davidic psalter. It is noteworthy that almost half of the poorly preserved indeterminate scrolls—not included in these previous statistics—are also written in informal handwriting.

In sum, the majority of collections consistent with known versions of the psalter are written in formal hands (71% = 15/21), while the majority of divergent manuscripts are in informal or semiformal hands (67% = 6/9). Based on this observed correlation between script formality and textual contents, I propose that writers generally preferred to use more formal handwriting for straightforward copies of the Davidic psalter (or at least substantial portions thereof), but were more flexible in their use of scripts for manuscripts with distinctive contents. The only clear exceptions to this overall pattern are copies of Ps 119 (4Q89 5Q5) and the uniquely arranged 4Q92 in relatively formal hands,³⁶ as well as the poorly preserved 4Q95—compatible with both MT and 11Q5 psalters—in an informal hand.

36 If Masif was indeed a small scroll, it too would be exceptional.

6 Discussion

In the preceding analysis, I proposed associating various types and levels of script with different usage registers. Observed correlations between script, manuscript format, and textual contents suggest the functional differentiation of these scripts within the corpus of Dead Sea Psalm scrolls. Thus, the content-independent stylistic classification of scripts has important implications for ongoing discussions about the respective forms and functions of each of these scrolls.

The correlation between more formal hands and large literary scrolls of conventional or traditional contents and between relatively informal hands and small manuscripts with textually distinctive contents provides a useful paradigm for interpreting these documents. In most cases, formal (and, to a lesser extent, elegant semiformal) hands generally indicate large, prestigious, high-register literary copies of the Davidic psalter suitable for presentation and communal reading (e.g., 4Q83 4Q85 4Q87 4Q98 4Q98b 8Q2 11Q5 11Q6 11Q7 11Q8 5/6Hev1b Mas1e; possibly also 1Q11 2Q14 3Q2 4Q91 4Q97 4Q98a 4Q98c Mas1f). These manuscripts reproduce well-known contents and were professionally produced by scribes for patrons or customers, so they cannot be easily dismissed as careless or idiosyncratic. Manuscripts in lower-register semiformal and especially informal hands—usually smaller manuscripts—should normally be considered personal and/or scholarly in nature, which might allow for (but not require) greater creativity, intervention, and idiosyncrasy (e.g., 1Q10 1Q12 4Q84 4Q86 4Q88 4Q90 4Q93 4Q94 4Q95 4Q96 4Q98f 4Q98g).

Two exceptions to this overall pattern demand further explanation and provide potential avenues for further research. *First*, both examples of formal or semiformal hands in manuscripts containing only a single psalm (4Q89 5Q5) appear to be copies of only Ps 119, which suggests a special treatment of this monumental psalm (see also 4Q90). *Second*, 4Q92 is written in a relatively formal hand, but appears to have contained a collection (of unknown size) at odds with both the MT and 11Q5 psalters. While neat, regular, and bilinear, 4Q92 also betrays some substandard features that are less than strictly formal, including unadorned letters, nearly upright stance, and the inconsistent use of final and non-final forms. Thus, the nature of 4Q92 remains unclear.

Finally, I will highlight three medium-format manuscripts written in simple informal (4Q88) or semiformal (4Q84 4Q86) hands, which preserve collections different from both the MT and 11Q5 psalters. These are probably best understood as relatively informal personal or scholarly productions, as opposed to exquisite presentation copies. For instance, they could have been working

drafts, sources for personal study, or perhaps even reference texts for occasional or informal liturgical settings. 4Q88 is a highly distinctive manuscript, with a Semicursive hand, frequent orthographic confusion and Aramaisms, a large number of unique variant readings, and a unique collection of psalms including at least Pss 22, 107, 109, Apostrophe to Zion, Eschatological Hymn, and Apostrophe to Judah.³⁷ 4Q86 has the unique sequence Pss 106(?)→147→104 (in contrast to both the MT and 11Q5 psalters) and numerous unique readings, which led its editors likewise to describe it as “a distinctive manuscript.”³⁸ Even the hand of 4Q84—the best of the three—is substandard with respect to the high-register presentation copies, as evident in the lack of ornamentation and frequent irregularities and curved strokes. Furthermore, 4Q84 is a relatively small manuscript laid out in a distinctive format (narrow columns consisting of one hemistich per line, with the awkward exception of only part of Ps 118 with two hemistichs to a line) with a direct transition from Pss 103→112, in conflict with the MT and (possibly) 11Q5 psalters.³⁹ One should not automatically assume that all the idiosyncrasies in these manuscripts should be attributed to those who produced them. Nevertheless, the apparent nature of these manuscripts with texts for informal use makes it considerably more plausible that the writers themselves introduced innovations into the contents than would be the case with most of the professionally produced presentation copies.

7 Conclusion

The results of this study of the Dead Sea Psalm scrolls suggest differences in functional register for various script types and levels of formality and demonstrate the importance of understanding the material features of manuscripts for interpreting their texts. Recognition of this reality has opened significant new avenues for further research on the forms and functions of the Dead Sea Psalm scrolls and may serve as a corrective to elements of previous studies.

In particular, I suggest that these functional differences—evident in the correlations between script and manuscript format identified here—better

37 See Skehan, Ulrich, and Flint, “88. 4QPs^f,” 86–88. Note also the awkward inconsistencies in column height (e.g., Cols. III and IV), the narrow columns, and the small top and bottom margins, which further suggest an informal production.

38 Skehan, Ulrich, and Flint, “86. 4QPs^d,” 65. Note also the distinctively narrow columns, small top margin, and awkward transition from prose to stichographic layout within Ps 104, which could further argue for a relatively informal manuscript.

39 Cf. also the unusual Paleo-Hebrew *waw* inserted after Ps 93.

explain the diverse contents of most of the Dead Sea Psalm scrolls than does any supposed diachronic trajectory of increasing conformity to a proto-MT psalter.⁴⁰ The superior explanatory power of a synchronic functional analysis is especially understandable in this case, since almost all of the Dead Sea Psalm scrolls appear to have been written within about one or two centuries of each other. I see no clear correlation between manuscript date and text form in this corpus, and I consider the supposed division between the stable Pss 1–89 and unstable Pss 90–150 unsubstantiated.⁴¹

This research confirms the suspicions expressed in numerous recent studies that the evaluation of the form and function of each manuscript is the most promising approach to treating the textual diversity evident in the Dead Sea Psalm scrolls,⁴² providing specific suggestions for each manuscript on the basis of its material features. Based on the observed patterns, I conclude that ancient readers and scribes did indeed generally recognize and formally distinguish a traditional “Book” of Psalms (in multiple versions) from the many diverse forms of reuse of its contents.⁴³

40 Contra, e.g., Wilson, *Editing*, 116–122; Flint, *Dead Sea Psalms Scrolls*, 135–149.

41 Wilson’s and Flint’s chronological lists are deeply flawed in this regard. Both include relatively small collections of questionable relevance like 4Q84, 4Q86, 4Q88, and 11Q11 (11QapocrPs), while the clearly-identified copies of the proto-MT and 11Q5 psalters are all near contemporaries. Wilson does not include the possibly early 4Q98a as supportive because of uncertainty about its date. Flint misconstrues the evidence by including 4Q95 as contradicting the proto-MT arrangement of psalms, as well as discounting the evidence for conflicting arrangements of psalms included in Pss 1–89 found in 4Q83, 4Q98, and 4Q88. Correcting for these unhelpful classifications, the impression of greater instability in Pss 90–150 is almost entirely due to copies of the 11Q5 psalter. The net result is that the distinction between these parts of the psalter is actually far less obvious than would seem to be the case from Flint’s charts. See, similarly, the critique of Willgren, *Formation*, 117–120.

42 See, especially, Jain, *Psalmen oder Psalter*; Willgren, *Formation*; Krauß, “Zwischen Literatur und Liturgie”; Pajunen, “Reading Psalms.”

43 Contra, e.g., Pajunen, “Perspectives”; Mroczek, *Literary Imagination*.

Appendix A: Paleographic Information

Date Range: Paleographic date ranges are approximate and assigned by me according to the conventional typology of Cross, given in the format $\pm A, \pm B$, where A is the earliest element in the proposed range and B the latest. Negative years = BCE; positive years = CE. E.g., $-25, +25 = 25$ BCE to 25 CE. Actual dates may differ from these estimates.

To aid in the classification of the scripts, I have assigned relative numerical values for the three following variables for each manuscript. NB, these values are subjectively assigned on the basis of traditional paleographic evaluation, and they do not result from computerized measurements or multivariate analysis.

Ornamentation: Measured on a scale from 0 (= no ornamental elements) to 1 (= fully developed and consistent system of ornamentation)

Curvature: Measured on a scale from 0 (= extremely curvilinear) to 1 (= strictly rectilinear)

Regularity: Measured on a scale from 0 (= highly irregular) to 1 (= highly regular formation)

For ease of visualization, I include links to three 3D plots in an online repository. Each manuscript is plotted along three axes defined by the three aforementioned variables. These plots are variously labelled to graphically illustrate the correlations observed in this article.

Psalm scrolls plot by script type

<https://chart-studio.plot.ly/~dlongacre/7>

Psalm scrolls plot by script formality and manuscript format

(small, medium, and large formats indicated by the relative size of the dots; “indeterminate” are the smallest dots)

<https://chart-studio.plot.ly/~dlongacre/66>

Psalm scrolls plot by textual contents

<https://chart-studio.plot.ly/~dlongacre/58>

ID #	Name	Date Range	Script Subtype	Execution	Formality	Ornamentation	Curvature	Regularity
1Q10	1QPs ^a	-50,-1	Simple Curvilinear	calligraphic	semiformal	0.3	0.7	0.7
1Q11	1QPs ^b	-25,+25	Ornate Rectilinear	calligraphic	formal	0.7	0.9	0.8
1Q12	1QPs ^c	-25,+25	Simple Rectilinear	common	informal	0.4	0.7	0.6
2Q14	2QPs	-50,-1	Ornate Curvilinear	calligraphic	formal	0.6	0.6	0.9
3Q2	3QPs	+1,+50	Ornate Rectilinear	calligraphic	formal	0.8	0.9	0.9
4Q83	4QPs ^a	-175,-125	Simple Curvilinear	calligraphic	semiformal	0.4	0.6	0.8
4Q84	4QPs ^b	-50,-1	Simple Rectilinear	calligraphic	semiformal	0.4	0.8	0.7
4Q85	4QPs ^c	+25,+68	Ornate Rectilinear	calligraphic	formal	0.8	1.0	0.9
4Q86	4QPs ^d	-75,-25	Simple Rectilinear	common?	semiformal	0.4	0.8	0.6
4Q87	4QPs ^e	+1,+50	Ornate Rectilinear	calligraphic	formal	0.8	1.0	0.9
4Q88	4QPs ^f	-75,-25	Semicursive	current	informal	0.2	0.4	0.3
4Q89	4QPs ^g	-25,+25	Ornate Rectilinear	calligraphic	formal	0.7	1.0	0.8
4Q90	4QPs ^h	-75,-25	Simple Rectilinear	common?	semiformal	0.2	0.8	0.7
4Q91	4QPs ^j	+1,+50	Ornate Rectilinear	calligraphic	formal	0.7	0.9	0.9
4Q92	4QPs ^k	-75,-25	Simple Rectilinear	calligraphic	formal	0.4	0.9	0.9
4Q93	4QPs ^l	-75,-25	Simple Curvilinear	common	informal	0.3	0.6	0.5
4Q94	4QPs ^m	-50,-1	Simple Rectilinear	common?	semiformal	0.4	0.8	0.6
4Q95	4QPs ⁿ	-50,-1	Simple Curvilinear	common	informal	0.3	0.5	0.5
4Q96	4QPs ^o	-50,-1	Simple Curvilinear	calligraphic	semiformal	0.2	0.7	0.7
4Q97	4QPs ^p	-50,+25	Ornate Curvilinear	calligraphic	formal?	0.6	0.7	0.8
4Q98	4QPs ^q	-50,-1	Ornate Curvilinear	calligraphic	semiformal	0.6	0.6	0.7
4Q98a	4QPs ^r	-125,-50	Simple Rectilinear	calligraphic	formal	0.4	0.7	0.8
4Q98b	4QPs ^s	+1,+50	Ornate Rectilinear	calligraphic	formal	0.7	1.0	0.9
4Q98c	4QPs ^t	+25,+68	Ornate Rectilinear	calligraphic	formal	0.9	0.8	0.9
4Q98f	4QPs ^w	-100,-50	Semicursive	current	informal	0.3	0.4	0.3
4Q98g	4QPs ^x	-175,-100	Simple Curvilinear	common	informal	0.3	0.4	0.2
5Q5	5QPs	-25,+25	Ornate Rectilinear	calligraphic	formal	0.6	0.8	0.7
8Q2	8QPs	-25,+50	Ornate Rectilinear	calligraphic	formal?	0.6	0.8	0.7
11Q5	11QPs ^a	+1,+50	Ornate Rectilinear	calligraphic	formal	0.8	1.0	0.9
11Q6	11QPs ^b	-25,+25	Ornate Rectilinear	calligraphic	formal	0.7	0.8	0.8
11Q7	11QPs ^c	+1,+50	Ornate Rectilinear	calligraphic	formal	1.0	0.9	0.9
11Q8	11QPs ^d	+25,+68	Ornate Rectilinear	calligraphic	formal	1.0	0.9	0.9
5/6Hev1b	5/6HevPs	+50,+100	Ornate Rectilinear	calligraphic	formal	1.0	0.9	0.9
Mas1e	MasPs ^a	+25,+73	Ornate Rectilinear	calligraphic	formal	1.0	0.9	0.8
Mas1f	MasPs ^b	+25,+73	Ornate Rectilinear	calligraphic	formal	0.9	0.9	0.9

Appendix B: Scroll Dimensions

ID #	Name	Lines per Column	Column Height	Top Margin	Bottom Margin	Scroll Height	Average Column Width	Scroll Length
1Q10	1QPs ^a	15?	10.5 cm?	–	–	12–15 cm?	7 cm	> 0.5 m
1Q11	1QPs ^b	8?	5.6 cm?	2 cm	–	8–10 cm?	8–11 cm	> 1 m?
1Q12	1QPs ^c	?	?	–	–	?	8–12 cm?	?
2Q14	2QPs	?	?	0.4 cm?	–	?	6–9 cm	?
3Q2	3QPs	?	?	1 cm	–	?	8.4 cm	?
4Q83	4QPs ^a	35	22.5 cm	–	≥ 2.5 cm	26–28 cm	12.8 cm	≥ 3.8 m
4Q84	4QPs ^b	16–18	10.4–11.7 cm	1.5 cm	2 cm	14–16 cm	2.5–5 cm	≥ 2 m?
4Q85	4QPs ^c	33	21.5 cm	≥ 1.5 cm	≥ 3.2 cm	26–28 cm	8.5 cm	≥ 2.7 m
4Q86	4QPs ^d	19	13.8 cm	1 cm	–	16–17 cm	3.5–6.0 cm	> 0.5 m
4Q87	4QPs ^e	25–26	19.5 cm	1.9 cm	–	23–25 cm	9–10 cm	≥ 3 m
4Q88	4QPs ^f	23–25	12.5–14 cm	0.5 cm	1.3–2.9 cm	15–16 cm	4 cm	> 0.7 m
4Q89	4QPs ^g	8	5.3 cm	1.9 cm	1.4 cm	8.4 cm	8.3 cm	c. 2.7 m
4Q90	4QPs ^h	21	12.6 cm	–	1.8 cm	15–17 cm	6.5 cm	≥ 0.8 m
4Q91	4QPs ⁱ	14?	13.5 cm?	–	–	14–16 cm?	10.5 cm	≫ 0.5 m
4Q92	4QPs ^k	?	?	–	1.9 cm	?	13 cm	≥ 0.3 m
4Q93	4QPs ^l	15	12.8 cm	–	–	14–17 cm	4.0–4.6 cm	≥ 0.4 m
4Q94	4QPs ^m	12?	8 cm?	1–1.2 cm	?	10–12 cm?	6.3–9.4 cm	≥ 3.4 m?
4Q95	4QPs ⁿ	?	?	–	–	?	10–14 cm	≥ 0.25 m
4Q96	4QPs ^o	?	?	–	–	?	8.4 cm	?
4Q97	4QPs ^p	?	?	–	?	?	8 cm	?
4Q98	4QPs ^q	29	20 cm	2.0 cm	–	24–25 cm	17 cm	≫ 0.35 m
4Q98a	4QPs ^r	30? (or 60?)	15–16 cm?	–	0.8 cm	17–19 cm?	5–6 cm	≫ 0.12 m
4Q98b	4QPs ^s	c. 40? (or 20?)	26 cm?	–	1.9 cm	29–31 cm?	11–11.5 cm	≫ 0.12 m
4Q98c	4QPs ^t	?	?	–	–	?	10 cm	?
4Q98f	4QPs ^w	?	?	?	–	?	13.4–14.4 cm	?
4Q98g	4QPs ^x	?	?	1 cm?	–	?	6 cm?	c. 10 cm?
5Q5	5QPs	16	9.6 cm	–	–	11–12 cm	8 cm	c. 1.3 m
8Q2	8QPs	24?	18 cm?	2 cm	≥ 0.9 cm	21–22 cm?	9.5 cm	≥ 3.6 m?
11Q5	11QPs ^a	25	22–23 cm	1.8–2.1 cm	–	26–28 cm	9–13 cm	> 4.2 m
11Q6	11QPs ^b	25–28	18–20 cm	2.3 cm	–	22–25 cm	9–11 cm	≥ 0.8 m
11Q7	11QPs ^c	36	28 cm	–	–	30–34 cm	12–13 cm	c. 6.5 m
11Q8	11QPs ^d	32–34	23–26 cm	3 cm	–	28–32 cm	8.2–12.4 cm	> 5 m?
5/6Hev1b	5/6HevPs	28	17 cm	1.5–1.8 cm	2.5–2.7 cm	21 cm	8 cm	c. 10.1 m
Mas1e	MasPs ^a	29	19.5 cm	2.4 cm	3.2 cm	24.9 cm	9 cm	≥ 7.4 m
Mas1f	MasPs ^b	?	?	–	–	?	3.5–4.5 cm	?

Appendix C: Manuscript Format

SL = Scroll Length

SH = Scroll Height (column height plus margins)

cw = Column Width

Mg. = Top/Bottom Margins (individually, not the sum total of the top and bottom margins)

ID #	Name	Format	Small		Medium				Large					
			SL < 1 m	SH < 12 cm	SL ≥ 1 m	cw < 6 cm	Mg. < 1.5 cm	SH 12–20 cm	cw 6–10 cm	cw > 10 cm	Mg. ≥ 1.5 cm	SH > 20 cm	SL ≥ 3 m	SL ≥ 5 m
1Q10	1QPs ^a	Medium?			x			x?	x					
1Q11	1QPs ^b	?		x?	x?				x		x			
1Q12	1QPs ^c	?							x?					
2Q14	2QPs	Medium?					x?		x					
3Q2	3QPs	Medium?					x		x					
4Q83	4QPs ^a	Large								x	x	x	x	
4Q84	4QPs ^b	Medium			x	x		x			x			
4Q85	4QPs ^c	Large							x		x	x	x	
4Q86	4QPs ^d	Medium			x	x	x	x						
4Q87	4QPs ^e	Large							x		x	x	x	
4Q88	4QPs ^f	Medium			x	x	x	x						
4Q89	4QPs ^g	Small		x	x				x		x			
4Q90	4QPs ^h	Medium			x			x	x		x			
4Q91	4QPs ^j	Medium?						x?		x			x	
4Q92	4QPs ^k	Large?			x					x	x			
4Q93	4QPs ^l	Medium			x	x		x						
4Q94	4QPs ^m	Small?		x?			x		x				x?	
4Q95	4QPs ⁿ	?			x					x				
4Q96	4QPs ^o	?							x					
4Q97	4QPs ^p	?							x					
4Q98	4QPs ^q	Large								x	x	x	x	
4Q98a	4QPs ^r	Medium?			x	x	x	?				?		
4Q98b	4QPs ^s	Large			x					x	x	x?		
4Q98c	4QPs ^t	?							x					
4Q98f	4QPs ^w	?								x				
4Q98g	4QPs ^x	Small	x?				x?		x?					

(cont.)

ID #	Name	Format	Small		Medium				Large					
			SL < 1 m	SH < 12 cm	SL ≥ 1 m	CW < 6 cm	Mg. < 1.5 cm	SH 12–20 cm	CW 6–10 cm	CW > 10 cm	Mg. ≥ 1.5 cm	SH > 20 cm	SL ≥ 3 m	SL ≥ 5 m
5Q5	5QPs	Small		x	x				x					
8Q2	8QPs	Large						x		x	x	x?		
11Q5	11QPs ^a	Large							x	x	x		x	
11Q6	11QPs ^b	Large			x			x		x	x			
11Q7	11QPs ^c	Large							x		x		x	
11Q8	11QPs ^d	Large							x	x	x		x?	
5/6Hev1b	5/6HevPs	Large						x		x	x		x	
Mas1e	MasPs ^a	Large						x		x	x		x	
Mas1f	MasPs ^b	?				x								

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