Relative Size and Comparative Value in Byzantine Illuminated Manuscripts: Some Quantitative Perspectives*

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In 1295 the Byzantine scribe and intellectual, Maximus Planudes, wrote to buy some parchment. In his letter, Planudes requested parchment in two sizes and included samples of the bifolios that he wanted. He stated that the larger sheets were to be divided and cut into two bifolios.[1] In other words he intended to fold the larger measure of parchment in order to obtain bifolios and folios that, respectively, were one-half and one-forth the size of the original sheet. This practice of folding and refolding sheets of parchment to form the desired page size is well known to historians of manuscript and printed books and has been investigated by J. IRIGOIN[2] and, more recently, by L. GILISSEN, who has studied with admirable precision this process in Latin manuscripts. A scribe began with a large sheet of parchment and folded it a certain number of times to produce quires of desired size. Folding also determined the relation of hair and flesh sides of the parchment. Gregory's law that scribes deliberately matched hair side with hair side and flesh with flesh at each recto-verso opening is more the result, according to GILISSEN, of this process of folding the original parchment and afterwards cutting it for the individual pages.[3] GILISSEN proved his case with series of excellent photographs of quires, but folding can also be studied mathematically from manuscript measurements, an approach taken as

well in the recent book of C. BOZZOLO and E. ORNATO.[4]

The present study will explore the methods of such numerical analysis and its significance for understanding the production and cost of Byzantine illuminated manuscripts. These factors in turn can provide some sense of medieval aesthetics. The basic principle operative here is that two manuscripts of different sizes may have been made from parchment sheets of the same measure, if their lengths and widths can be put into correspondence in such a way that the ratios of the correlated sides is a power of two. For example, if the width of the larger equals the length of the smaller, and twice the width of the smaller equals the length of the larger, then the two books are related to each other as quarto is to octavo. This folding process will be first observed in pairs of manuscripts. The three pairs selected provide a controlled context, because their interrelation has already been demonstrated through other evidence--art historical, palaeographical, or textual.

The first pair, two late eleventh-century Gospel books in Parma, Bibl. Palat. ms. 5 and in Oxford, Bodl. Lib. E.D. Clarke 10, are related, because they share a peculiar selection of prefaces, as well as many details of their distinctive programs of decoration.[5] For instance, both illustrate the prefaces of Irenaeus with the Maiestas Domini. In the more detailed Parma frontispiece (fig. 1), cherubim and seraphim accompany Christ, and six figures flank the miniature and the title below. In the simpler Oxford version (fig. 2), the cherubim have been eliminated, and Christ changed into a standing figure, thus

contradicting the preface's evocation of "he who was shown sitting on the cherubim." Other aspects of the latter manuscript's program of decoration suggest that it is an abridgment of the more extensive illustrations in the Parma Gospels. The scripts of the two are rather similar and may be the work of the same scribe or at least the same scriptorium, but the styles of illumination are not identical.[6]

The Parma manuscript, a work of the highest quality, is distinctly superior. Figures are painted with greater precision and finesse, and ornamental and figural units are better proportioned so that ornament does not dominate. In the Oxford miniature the visual hierarchy is confused, because the central roundel with the principal figure is only somewhat larger than the corner squares with the evangelists. The ratio of the diameter of the circle to the height of the squares is 1.36 to 1. In contrast the corresponding ratio in the Parma frontispiece is 2.78 to 1, a quantitative expression of the dominance of the central disc. Moreover, the square frames of the evangelists in the Parma frontispiece approximate the size of the medallions with the four apocalyptic beasts. As a result, the correspondence of evangelist and symbol is better expressed visually.

The complex pattern of relationship between the two books is clarified by their page sizes. As I. Hutter has observed,[7] the Oxford volume is about one-fourth the size of the Parma Gospels:

Parma cod. 5 298 x 228 mm.

Oxford, Clarke 10 144 x 110 mm.

Double the width and length of the latter approximately equals the dimensions of the former. The correspondence suggests that sheets of a common measure were folded twice more for the Oxford than the Parma Gospels and points to an origin in the same workshop. The large discrepancy in size necessitated the abridgment of Oxford miniatures, such as the Maiestas Domini (figs. 2). There the painter chose a scale for the border very near to that of the much larger Parma miniature. This in turn dictated the dimensions for the corner squares with the evangelists and thereby altered the frontispiece's hierarchical composition. The Oxford painter's failure to preserve iconographic clarity suggests an inferior talent or priorities quite distinct from those of the modern observer.

Because both books contain the same texts, and if one assumes that the cost of materials and labor is the same during their production, their relative cost will then depend upon the size of the script, the width of the margins, the number of blank pages, and the size and number of illustrations, all factors that are approximately measured by comparing the size and number of pages in the two books. In the case under discussion, the Parma manuscript would cost the same as the Oxford manuscript, if the two had the same dimensions and number of folios. In fact Parma ms. 5 is four times larger than Oxford Clarke 10 and has 1.7 times the number of folios (283 ff. vs. 166 ff.).

Consequently the former cost some 6.8 times as much as the latter. The Parma and Oxford manuscripts, then, represent an atelier's economical and luxurious version of the illustrated Gospel book. Moreover, cost also correlates with artistic quality. The artistically inferior Oxford volume could conceivably represent the less conscientious work of the Parma illuminator, working more hastily to satisfy the lesser commission, but it is more likely to be the product of a less skilled member of the atelier. If the latter were true and if talent were rewarded financially, the difference in cost between the two books would be greater still.

Page sizes are pertinent to another pair of illuminated manuscripts, the celebrated copies of the Homilies of the monk Jakobos Kokkinobaphos in the Vatican and the Bibliothe=que Nationale (figs. 3-4). Scholarly consensus attributes both to the same atelier.[8] Corresponding miniatures, such as the scene of Mary's trial by water (figs. 3-4), are substantially the same, and vary only in minor details of pose, dress, or background architecture. The dimensions of the manuscripts are also obviously related, the Vatican manuscript being twice the size of the Paris volume:[9]

Vat. gr. 1162	328 x 230
Paris gr. 1208	230 x 165

This is an especially clear example of the correspondence that obtains when manuscripts have been produced from sheets of the same measure in the same workshop.

Which of the two manuscripts is artistically superior is debatable and ultimately depends upon the aesthetic judgment of the modern beholder, but the comparative value of the materials and workmanship gives the edge to the Vatican copy. Because both contain the same text and the Vatican volume is twice as large, the ratio of the number of its folios to those of Paris gr. 1208 would be 1:2 if the two cost the same. Instead the ratio of the former (194 ff.) to the latter (260 ff.) is 3:4, a less extreme difference than that separating the Parma and Oxford manuscripts, but telling nevertheless.

The third exemplary pair also are Gospel books, Mt. Athos, Pantocrator cod. 47 and Venice, Bibl. Marc. cod. I, 19. Both were written by the same scribe, Theodore Hagiopetrites, in the same year, 1300/1. The latter is about half the size of the former:[10]

Pantocrator 47	238 x 172
Venice I, 19	175 x 126

Once more the correspondence suggests the process of folding and indicates the comparative value of the two manuscripts. Because the number of folios in each is nearly the same (Pantocrator 47, 335 ff; Venice I, 19, 329 ff), the larger manuscript cost about twice as much as the smaller.

Aesthetically the decoration varies little between the two books. Instead value depends upon choice of materials and quantity of decoration. For example, the individual designs for the headpieces are similar,[11] and the cruciform frames around

the preface to Matthew are identical. In the latter or in the canon tables of the Venice Gospels, Hagiopetrites used a simple, inexpensive wash color, but for the corresponding parts of the Pantocrator manuscript, he switched to the standard opaque pigments of deluxe ornament.[12] Moreover, only the Pantocrator Gospels contains miniatures of the four evangelists, most likely not painted by Hagiopetrites, but by a separate illuminator enlisted for this specific task.[13] Once again, then, the pair represents the economical and luxurious versions of a Gospel book.

On the limited scale of two manuscripts, folding is readily apparent, but when the inquiry is enlarged, complexity ensues, and intuitive notions about relationships become less satisfactory. Fortunately it is here that statistical analysis of page sizes can impute degrees of relationship. While it should be acknowledged immediately that no technique based solely on such simple data could conceivably be definitive, such a methodology could be used to deny, or in conjunction with other evidence, to suggest a common origin. Four groups of manuscripts have been selected for study. Three are associated palaeographically or art historically, and the fourth, Greek manuscripts in the Vatican Library from number 330 to 430, will serve as the control sample, a random distribution of sizes without any apparent or predictable interconnection.[14] In Table A are the signed manuscripts of Theodore Hagiopetrites from 1277/8 to 1307/8[15]; in Table B the sixteen manuscripts that are now attributed to the late thirteenth-century Atelier of the

Palaeologina, a workshop discovered by H. BUCHTHAL and H. BELTING[16]; and in Table C the manuscripts associated with the later twelfth-century Rockefeller McCormick New Testament studied by A. WEYL CARR.[17] These sets of manuscripts will be studied to form preliminary opinions about quantitative procedures for comparing page size. For the nonce small errors inherent in the data presented in the four tables (i.e. trimming, measurement error, non-rectilinearity) are ignored, though the authors have given systematic attention to these.

The basic statistical problem may be formulated as follows. Consider a collection of manuscripts, say n in all, with page lengths $L_1, L_2, \ldots, L_n$ and page widths, $W_1, W_2, \ldots, W_n$, respectively. What can be said in a quantitative way about whether these manuscripts may be reasonably presumed to originate from a common supply of parchment or paper? The first issue is to decide upon a quantity, Q, that adequately characterizes the dimensional aspect of a set of manuscripts. This point has been discussed in detail in the previously mentioned volume of BOZZOLO and ORNATO.[18] Let L and W denote the length and width, respectively, of the pages of a manuscript. The area of the page, LW, the perimeter of the page $2(L + W)$, and the ratio of the pages' width to their length, W/L, were all suggested as possibly appropriate quantities with which to characterize page size. In their rich and varied study, BOZZOLO and ORNATO considered a large sample of manuscripts, dating from the ninth to the fifteenth centuries and originating in northern France, and determined the distribution of the above-mentioned quantities.

They based their analysis principally upon the quantity W/L and noted a number of interesting trends. This quantity will be analyzed here in the context of Tables A, B, C, and D. In the same context, the joint distribution of the pair (L,W) will also be considered.

One approach to the problem formulated above, regarding a given collection of n manuscripts, is the following. Let Q_1, Q_2, . . ., Q_n denote the ratios of page width to page length of the manuscripts in question. Determine a value Q that best fits these values in the sense of minimizing their variation about Q, and then use the resulting relative variation as a measure of how closely the given manuscripts conform to one another. What makes the problem a little complicated is that in determining Q and in computing the variation of Q_1, Q_2,. . ., Q_n about Q, the possibility of folding may be taken into account. Regarding this last point, consider a simple case, taken from Table C, wherein n = 2, L_1 = 208, W_1 = 155, L_2 = 154, and W_2 = 101. For this data it appears that $Q_1 = W_1/L_1 = .75$, whilst $Q_2 = W_2/L_2 = .66$, two numbers whose correspondence is not striking. However, inspection reveals that a closer comparison might be obtained if manuscript 2 is viewed as originally having been folded lengthwise once more than manuscript 1. If manuscript 2 is mentally unfolded, the result is a fictitious manuscript 2′ with $L_2' = 202$ and $W_2' = 154$. The fictitious manuscript has $Q_2' = W_2'/L_2' = .76$, a value that is obviously related to the value of Q1 computed above.

Turning to the implementation of the procedure just outlined, suppose as before there is given n manuscripts with dimensions $(L_1,W_1),\ldots,(L_n,W_n)$. The steps in the process of determining the relative variation of this set are as follows.

Step 1. First determine which manuscripts should be "unfolded" in order to reduce the overall variation of the lengths and widths. Compile an auxiliary list of manuscripts whose dimensions account for this unfolding. Let $(L_1',W_1'), \ldots, (L_n',W_n')$ denote the unfolded dimensions. (In the example above, $L_1' = L_1$, $W_1' = W_1$, $L_2' = 2W_2$, $W_2' = L_2$.)

Step 2. Compute the mean m and the standard deviation s of the auxiliary list by the standard formulae,

$$m = \frac{1}{n}(Q_1 + \ldots + Q_n)$$

$$s = \left\{\frac{1}{n}(|Q_1-m|^2 + \ldots + |Q_n-m|^2)\right\}^{1/2}$$

where either $Q_i = W_i/L_i$, or $Q_i = (L_i,W_i)$, $i = 1,\ldots,n$.

Step 3. Compute the coefficient of variation $c = s/m$ to obtain a non-dimensional measure of the variation of the given set of manuscripts about its mean value.

The results of carrying out this procedure on the data gleaned from Tables A, B, C, and D are summarized in the following chart. (The numbers reported are the various coefficients of variation, expressed in percent.)

Group		*Variation of W/L*	*Variation of W/L (with unfolding)*	*Variation of (L,W)*
A	I	1.5	4.1	3.7
	II	4.5	4.3	4.9
B	I	6.5	6.5	6.0
	II	3.3	2.5	1.9
C	I	6.3	6.9	5.7
	II	3.5	4.1	3.3
D		6.3	9.1	10.7

These results agree generally with those of BOZZOLA and ORNATO[19] where they overlap, namely in the first column.

Several interesting points emerge from the foregoing calculations. First note that whilst the members of the groupings in Tables A, B, and C are known to be closely related, the use of the quantity W/L does not always disclose this fact, because the data in both group I of Table B and group I of Table C vary as much as does the random sample in Table D. When folding is taken into account, the variation of W/L tends to increase, but the random sample is somewhat more easily distinguished from the selected groupings, as seen in column two. This aspect is further enhanced when the more delicate statistics of the pair (L,W) are considered. In column three, all the variations of the related sets are well separated from that of the random sample.

We tentatively conclude that statistical analysis permits the differentation of related and unrelated groups of manuscripts and offers the potential of supplementing the historical study of illuminated manuscripts. In principle hundreds or thousands of

manuscripts could be surveyed automatically, and out of a vast caldron of widely divergent books, small groups of interrelated manuscripts might be precipitated. Such precipitants must then be investigated palaeographically and art historically, for page size cannot be used as the sole criterion for associating manuscripts, since accidental relationships between dissimilar books can and do occur. For example, note from Table D the closely related sizes of the Vat. gr. 387 from the fifteenth century and gr. 394 from the tenth or eleventh century.[20] Indeed, considerably more experience with controlled sets of manuscripts, such as those presented in Tables A, B, and C, is needed before these statistical methods should be applied routinely to determine patterns of relationship.

Suitably extended, the notion of the comparative value of books with the same text and related sizes also has further potential and could be applied, for instance, to various manuscripts in Tables B and C. Yet here too a cautionary note is in order. The values derived on the basis of size are only a crude determination of what, in essence, is the comparative quantity of materials and, to some extent, the time expended on two books. While useful, these values should not overrule common sense. To refine the notion of comparative value, one would have to find ways to estimate other factors, such as the varying cost of different types of parchment and pigments; different media, i.e. drawing, wash or full color; different types of decoration, i.e. ornamental or historiated headpieces; and the possibly differing wages of the craftsmen. By including these factors in the

equation, a more accurate sense of comparative values of Byzantine manuscript illumination would be obtained. With a knowledge of contemporary costs, the art historical investigation of individual miniatures or whole manuscripts could probe what artistic qualities were valued by Byzantine illuminators and patrons. Such analysis thus offers the prospect of supplementing, extending, and probably correcting modern aesthetic judgments of medieval illumination.

List of Illustrations

1. Parma, Bibl. Palatina, Ms. gr. 5, f. 5r. (70% of original size)

2. Oxford, Bodl. Lib. E. D. Clarke 10, f. 2v. (70% of original size)

3. Rome, Bibl. Vat. gr. 1162, f. 188r. (68% of original size)

4. Paris, Bibl. Nat. gr. 1208, f. 251v. (68% of original size)

5. Table A. Signed Manuscripts of Theodore Hagiopetrites, 1277/8-1307/8.

6. Table B. Atelier of the Palaeologina.

7. Table C. The Chicago Subgroup Published by A. WEYL CARR.

8. Table D. Vatican Library Parchment Manuscripts, gr. 330-430.

Notes

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1. M. TREU, Maximi monachi planudis epistulae, re-edition Amsterdam 1960, pp. 135, 260-261.

2. J. IRIGOIN, Pour une étude des centres de copie byzantins, in Scriptorium, 12 (1958), pp. 212-213. Also see his general comments on parchment: Les conditions matérielles de la production du livre à Byzance de 1071 à 1261, in XVe Congrès international d' études byzantines, Rapports et Co-Rapports, II, Langue, Littérature, Philologie, pt. 3, Athens 1976, pp. 3-5.

3. L. GILISSEN, Prolégomènes à la codicologie, Recherches sur la construction des cahiers et la mise en page des manuscrits médiévaux, Gand 1977, pp. 14-122.

4. C. BOZZOLO and E. ORNATO, Pour une histoire du livre manuscrit au moyen âge, Trois essais de codicologie quantitative, Paris 1980.

5. The Parma manuscript remains inadequately published. Illustrations in V. LAZAREV, Storia della pittura bizantina, Torino 1967, figs. 240-244. Further literature in R. S. NELSON, The Iconography of Preface and Miniature in the Byzantine Gospel

Book, New York 1980, p. 68; and G. GALAVARIS, The Illustrations of the Prefaces in Byzantine Gospels, Wien 1979, pp. 74-93. The Oxford manuscript is discussed and illustrated in detail in I. HUTTER, Corpus der byzantinischen Miniaturenhandschriften, I, Stuttgart 1977, pp. 56-59, figs. 207-212. On the prefaces in both see NELSON, Iconography, pp. 119-121.

6. For further discussion on the relation of the two books see the important remarks of HUTTER, Corpus, III, Stuttgart 1982, p. 333.

7. Ibid. The Parma measurements are from direct observation. In E. MARTINI, Catalogo di manoscritti greci esistenti nelle biblioteche italiane, I, 1, Milano 1893-1896, p. 149, the dimensions are given as 300 x 231 mm. The Oxford measurements are taken from HUTTER, Corpus, I, p. 56.

8. The manuscripts have been discussed most recently by J. D. ANDERSON, The Illustration of Cod. Sinai. Gr. 339, in The Art Bulletin, 61 (1979), 170-185. A few remarks on problems of these and the other manuscripts of this style appear in a review article by R. S. NELSON, Byzantine Miniatures at Oxford; CBM 1 and 2, forthcoming in Byzantine Studies/Etudes byzantines.

9. The measurements of the Vatican manuscript are from direct observation. In C. STORNAJOLO, Miniature delle omilie giacomo monaco (Cod. Vatic. Gr. 1162) e dell' evangeliario greco urbinate (cod. Vatic. Urbin. Gr. 2),; Roma 1910, p. 8, the dimensions are given as 326 x 227 mm. The measurements of the Paris volume are from Bibliothèque Nationale, Byzance et la France médiévale,

Paris 1958, p. 21.

10. On Hagiopetrites see G. PRATO, Scritture librarie arcaizzanti della prima età dei Paleologi e loro modelli, in Scrittura e civiltà, 3 (1979), pp. 177-180; R. S. NELSON, Theodore Hagiopetrites and Thessaloniki, in XVI. Internationaler Byzantinistenkongress, Akten II/4, Jahrbuch der Österreichischen Byzantinistik, 32/4 (1982), pp. 79-85. The measurements of the Pantocrator volume are from I. SPATHARAKIS, Corpus of Dated Illuminated Greek Manuscripts to the Year 1453, Leiden 1981, p. 56. Those of the Venice manuscript are from E. MIONI, Bibliothecae Divi Marci Venetiarum, Codices graeci manuscripti, I, Roma 1967, p. 25.

11. Cf. the headpieces for Matthew: Pantocrator 47 in S. M. PELEKANIDES, Οἱ θησαυροὶ Ἁγίου Ὄρους, III, Athens 1979, fig. 178; Venice I, 19 in I. FURLAN, Codici greci illustrati della Biblioteca Marciana, III, Milano 1980, fig. 19.

12. These aspects of both manuscripts are unpublished.

13. Οἱ θησαυροὶ, III, figs. 174-177.

14. Measurements from R. DEVREESSE, Codices vaticani graeci, II, Codices 330-603, Vatican 1937, pp. 1-151. As the table indicates, paper manuscripts have been excluded. Also omitted are the following six manuscripts: gr. 336 and gr. 413, because no material is specified; gr. 338, because the dimensions are given in the wrong order with the smaller number first, a misprint?; gr. 396, because it is made from the parchment of an

earlier Latin manuscript; gr. 425, because no measurements are listed.

15. Measurements from published catalogues or direct observation. Fourteen of Hagiopetrites' seventeen signed manuscripts are listed. Absent for obvious reasons are Amsterdam, Univ. Bibl. Remonstr. 45, a post-Byzantine copy of a lost manuscript of 1292/3; Mt. Athos, Lavra roll no. 11; Serres, Monastery of St. John Prodromos, cod. 7, now missing, no measurements published.

16. Measurements from H. BUCHTHAL and H. BELTING, Patronage in Thirteenth-Century Constantinople, An Atelier of Late Byzantine Book Illumination and Calligraphy, Washington 1978, pp. 105-120. Included here are two additional manuscripts recently attributed to the Atelier: Vat. gr. 352 and Oxford, Bodl. Lib. Laud gr. 90. On the former see K. MAXWELL, Another Lectionary of the "Atelier" of the Palaiologina, Vat. Gr. 352, in Dumbarton Oaks Papers, 37 (1983), pp. 47-54. On the latter see HUTTER, Corpus cit., III, p. 345 and NELSON, Byzantine Miniatures cit., forthcoming.

17. Measurements taken from A. WEYL CARR, A Group of Provincial Manuscripts from the Twelfth Century, in Dumbarton Oaks Papers, 36 (1982), 67-81.

18. As in n. 4, p. 217.

19. Ibid., pp. 287, 297ff.

20. DEVREESSE, Codices cit., II, pp. 81, 93.

Table A
Signed Manuscripts of Theodore Hagiopetrites, 1277/8 - 1307/8

I.

A.	Vat. gr. 644, 1279/80	332 × 248
	Burney 21, 1292 (paper)	342 × 253
	Zavorda ms., 1307	345 × 250
B.	Copenhagen 1322, 1277/8	255 × 190
	Pantocrator 47, 1300/1	238 × 172
C.	Venice I, 19, 1300/1	175 × 126

II.

A.	Moscow 345, 1294/5	312 × 226
	Meteora 545, 1296/7	284 × 202
	Coislin 13, 1303/4	315 × 245
	Kosinitza 35, 1306/7	310 × 236
	Sinai 277, 1307/8	302 × 213
B.	Vatopedi 962, 1283/4	212 × 153
	Christ Church 20, 1291/2	200 × 145
	Williamstown, ms. 1, 1294/5	220 × 146

Table B
Atelier of the Palaeologina

I.

A.	Mt. Athos, Iviron 30m	305 x 245 mm
	Mt. Athos, Stavronikita 27	318 x 242
	Mt. Sinai gr. 228	315 x 250
	Vat. gr. 352 (attribution of K. Maxwell)	321 x 239
	Oxford, Laud gr. 90 (attribution of R. Nelson and I. Hutter)	335 x 260
B.	Mt. Athos Dionysiou 5	245 x 170
	Vat. gr. 1158	231 x 180
	Paris, B.N. gr. 21	225 x 155
	Mt. Athos, Stavronikita 46	255 x 170
C.	Mt. Athos, Lavra A 2	150 x 105
	Baltimore, WAG W525	165 x 115
	Florence, Plut. VI,28	141 x 117
	Venice, Marc. gr. 541	165 x 125
D.	Paris, B.N. suppl. gr. 260	118 x 85

II.

A.	Vat. gr. 1208	278 x 195
B.	Oxford, Barocci 31	183 x 137

Table C.
The Chicago Subgroup Published by A. Weyl Carr

I.

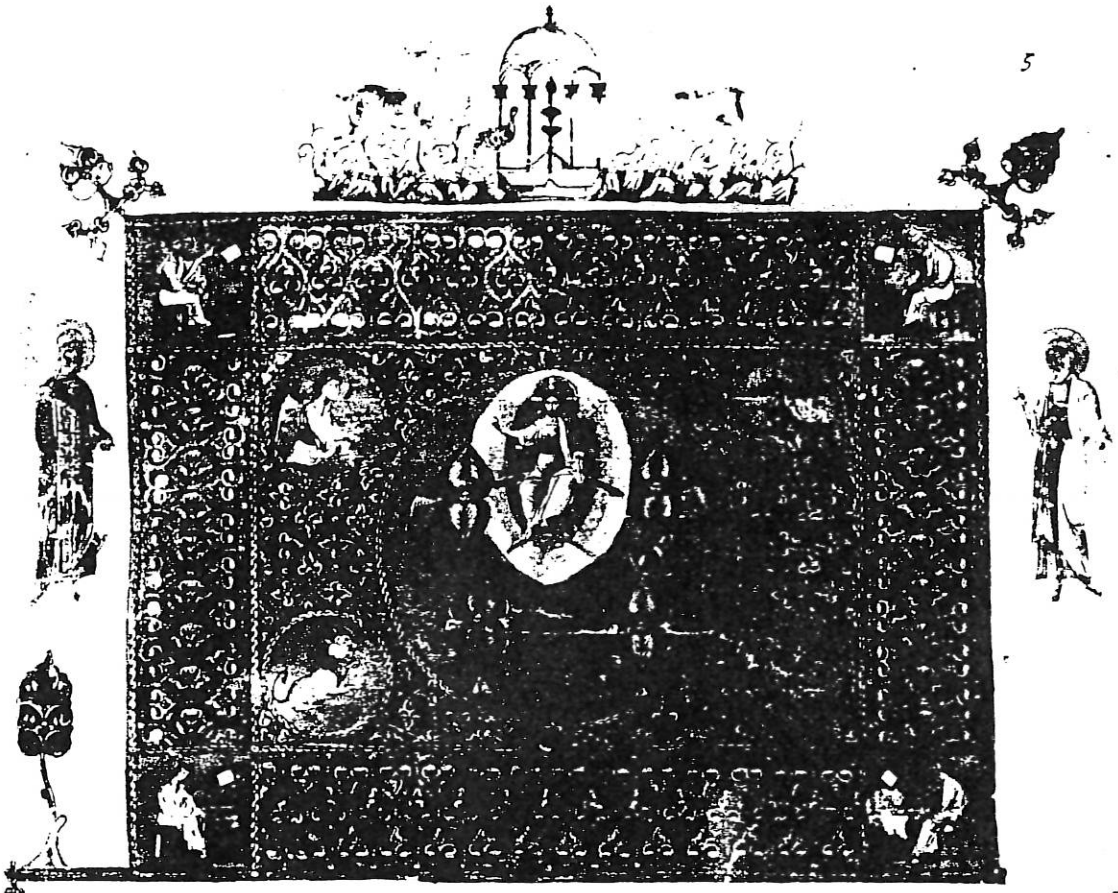
A.	Mt. Athos, Lavra B 100	300 × 220
	Moscow, Hist. Mus. gr. 88	319 × 228
B.	New York, H. P. Kraus	220 × 157
	Paris, Bibl. Nat. suppl. gr. 1335	205 × 158
	Mt. Athos, Lavra A 66	230 × 150
	Chicago, Univ. Lib. 965	208 × 155
	Palermo, Bibl. Nat., Deposito Museo, 4	212/215 × 158/162
	Mt. Athos, Vatopedi 851	216 × 147
	Mt. Athos, Stavronikita 57	218 × 173
	Rome, Vat. Barb. gr. 449	234 × 171
	Oxford, Bodl. Lib. Roe 6	200 × 140
C.	Athens, Benaki Mus. 34.3	150 × 113
D.	Oxford, Lincoln College, 31	154 × 101
	Paris, Bibl. Nat. suppl. gr. 927	155 × 110
	Athens, Byz. Mus., 820	157 × 129

II.

A.	Berlin, Staatsbibl. cod. gr. octavo 13	180 × 130
	Leningrad, Publ. Lib., gr. 105	187 × 133
	London, Brit. Lib. Add. 11836	186 × 124
	Mr. Athos, Vatopedi, 939	181 × 131
	Oxford, Christ Church, Wake 31	178 × 126
	Paris, Bibl. Nat. Coislin 200	175 × 130
	Mt. Athos, Lavra B 26	167 × 123
B.	Jerusalem, Greek Patr., Saba 698	119 × 90
C.	London, Brit. Lib. Add. 40753	87 × 65

Table D
Vatican Library Parchment Manuscripts,
Gr. 330–430

9th century	
Gr. 335	330 × 255
Gr. 357	395 × 320
Gr. 428	324 × 209
9–10th century	
Gr. 351	339 × 248
Gr. 353	294 × 208
Gr. 370	291 × 226
Gr. 411	335 × 257
10th century	
Gr. 337	185 × 138
Gr. 354 (949 A.D.)	358 × 235
Gr. 365	245 × 202
Gr. 367	206 × 166
Gr. 408	262 × 197
Gr. 415	326 × 240
Gr. 423	235 × 165
10–11th century	
Gr. 334	253 × 206
Gr. 394	235 × 169
Gr. 399	258 × 202
Gr. 418	333 × 240
11th century	
Gr. 331	395 × 314
Gr. 333	285 × 216
Gr. 339	200 × 145
Gr. 341 (1021 A.D.)	191 × 150
Gr. 342 (1087–88 A.D.)	176 × 130
Gr. 347	328 × 255
Gr. 349	324 × 253
Gr. 358	289 × 224
Gr. 362	194 × 150
Gr. 364	215 × 162
Gr. 390	273 × 208
Gr. 407	248 × 186
Gr. 412	338 × 255
Gr. 414 (1021 A.D.)	310 × 230
Gr. 416	342 × 265
Gr. 421	335 × 267
Gr. 422	332 × 246
Gr. 426	230 × 182
11–12th century	
Gr. 350	328 × 272
Gr. 352	320 × 242
Gr. 363	200 × 163
Gr. 371	239 × 197
Gr. 373	251 × 191
Gr. 405	337 × 243
12th century	
Gr. 361	205 × 160
Gr. 383	330 × 250
Gr. 395	301 × 235
Gr. 417	315 × 239
12–13th century	
Gr. 392	229 × 151
13th century	
Gr. 360	231 × 172
Gr. 368	255 × 198
13–14th century	
Gr. 356	322 × 242
Gr. 424	319 × 213
14th century	
Gr. 427	300 × 214
15th century	
Gr. 378	368 × 252
Gr. 380	268 × 244
Gr. 387	342 × 233



† ΥΠΟΘΕΣΙΣ ΤΗΣ ΤΩΝ
ΕΥΑΓΓΕΛΙΣΤΩΝ ΣΥΝΦΩΝΙΑΣ

φησὶ τὸ κατὰ ματθαῖον εὐαγγέλιον·
ἑβραΐδι διαλέκτῳ γραφὲν ὑπ' αὐτοῦ. ἐν
ἰλλυρικοῖς ἐξεδόθη· ἡρμηνεύθη δὲ, ὡς φασὶ
λόγιοι· ἐν παλαιστίνῃ δὲ τὴν κατ' ἀνθρω
πον τοῦ χυ γέννησιν· καὶ ἰφιγένη
θρω

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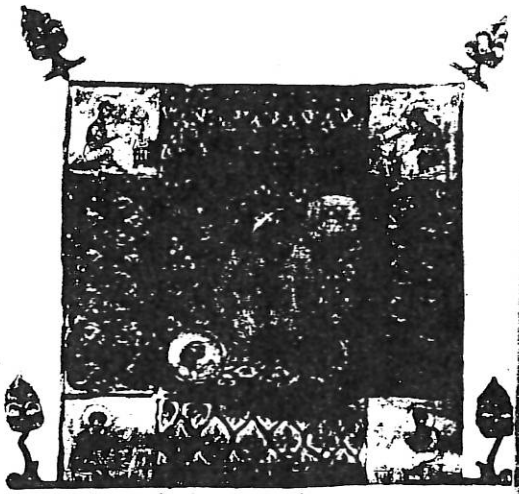

+ ΥΠΟΘΕΣΙΣ ΤΩΝ ΑΓΙΩΝ ΤΩΝ ΑΓΙΩΝ ΥΜΝΩΝ +

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