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## THE MINIATURISATION OF BIBLE MANUSCRIPTS IN THE THIRTEENTH CENTURY: A COMPARATIVE STUDY

Chiara Ruzzier

Biblical production in the thirteenth century is characterised by the development of two types of books that completely differ from one another in both their format and intended use. These are: the glossed Bible,<sup>1</sup> composed of numerous large-size volumes that circulated not only as a long set of volumes making up a complete Bible but also as individual books or groups of books; and the portable Bible, consisting of a single small volume, copies of which were disseminated throughout Europe in their thousands. If portable Bibles have attracted the attention of scholars for their decoration and their text, their strictly physical attributes and the techniques used to make this type of book have been up to now mostly overlooked.<sup>2</sup> However, these innovative features are the very elements that can highlight the production mechanisms of the codex. Although there are examples in earlier centuries, it is only in the thirteenth century that the single-volume format was adopted as standard. These new pandects became the predominant format throughout the western Christian world and many of these one-volume Bibles were small enough to be easily carried within a saddle bag or even a pocket.

The results that are discussed here are the outcome of a census of small-size biblical manuscripts, almost comprehensive in scope, which has led to the development of a database including nearly 1800 items.<sup>3</sup>

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<sup>1</sup> Although most of the text of the *Glossa Ordinaria* was created in the twelfth century, the majority of surviving manuscripts date from the thirteenth century. See Mark Zier, "The Development of the Glossa Ordinaria to the Bible in the Thirteenth Century: The Evidence from the Bibliothèque Nationale, Paris" in *La Bibbia del XIII secolo. Storia del testo, storia dell'esegesi. Convegno della Società Internazionale per lo studio del Medioevo Latino (SISMEL) Florence, 1-2 giugno 2001*, ed. Giuseppe Cremscoli and Francesco Santi (Florence, 2004), pp. 155-84, at pp. 157-58.

<sup>2</sup> For a general introduction to portable Bibles see de Hamel, *The Book*, pp. 114-39; see also Josephine Case Schnurman, *Studies in the Medieval Book Trade from the Late Twelfth to the Middle of the Fourteenth century with Special Reference to the Copying of the Bible*, unpublished B.Litt. Thesis (Oxford, 1960), and Rosanna Miriello, "La Bibbia portabile di origine italiana del XIII secolo. Brevi considerazioni e alcuni esempi" in *La Bibbia del XIII Secolo*, pp. 47-77.

<sup>3</sup> These results are based on the evidence presented in my PhD thesis: *Entre Université et Ordres mendiants. La miniaturisation de la Bible au XIII<sup>e</sup> siècle*, Université Paris 1

For purposes of clarity, it should be stated that there is no definition of a portable Bible that establishes a precise size limit. Therefore, I decided to extend the census to include all complete Bibles with overall dimensions of less than 450 mm. (This figure is the sum of the page height and width, a measurement which is known as the *taille* in quantitative codicology; this measurement is used here when discussing the size of manuscripts.) This choice enabled me to observe the incidence of size vis-à-vis the physical attributes of the manuscript, on the one hand, and the type of biblical text, on the other. Nevertheless, my analysis focuses on Bibles measuring less than 380 mm. Obviously, it is an arbitrary choice, that does, however, allow me to include in the corpus both extremely small Bibles and those that are slightly bigger (used, most probably, for preaching and studying). These latter Bibles, although not very small, would have still been easy to carry in a saddle bag.<sup>4</sup>

I have directly examined 357 of these Bibles (20% of the census) and I have carried out a statistical analysis of the data collected. This analysis is based on the examination of two groups of data. The larger group, which includes manuscripts known to me only through catalogue descriptions, is the basis for a large-scale study of a limited number of characteristics. The smaller group of Bibles examined directly supports an in-depth study of textual and material aspects. The large number of surviving portable Bibles makes them ideal for adopting a quantitative and comparative approach to the analysis, and, above all, allows me to highlight the different modalities of textual compression developed in the three main countries where portable Bibles were produced: France, Italy and England.<sup>5</sup>

The localisation of the manuscripts in this study requires further explanation: for the larger group, I accepted the places of origin given by the catalogues, even if the older catalogues are sometimes unreliable

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Panthéon-Sorbonne, 2010; for the methodological basis of this research see pp. 42–50, 55–68.

<sup>4</sup> Some references to *biblie portatiles* present in mediaeval inventories are in accordance with the size limit selected, e.g. the Bible described as “Biblia integra cum expositione nominum Hebreorum secundum Remigium, portatilis, littera parisina, in columnis, carta bona, tabulis et corio rubeo obvoluta” in Giovanna Cantoni Alzati, *La Biblioteca di S. Giustina a Padova. Libri e cultura presso i benedettini padovani in età umanistica*, Medioevo e Umanesimo 48 (Padua, 1982), p. 70. This manuscript has been identified with Venice, Biblioteca Marciana, MS I. 60 which measures 209 × 140 mm.

<sup>5</sup> The production of portable Bibles outside these areas is extremely small and starts later, with the exception of Spain. Fifteen portable Bibles of Spanish origin have been identified, which copy the Parisian model to various extents. The limited availability of Spanish catalogues makes it impossible to evaluate the magnitude of production in Spain, which has therefore been excluded for now from my analysis.

concerning origin and date.<sup>6</sup> In particular, the non-Parisian production has often been underestimated in the past. Therefore the place of origin was corrected when necessary during the direct analysis of the manuscripts; a comparison between the geographical distribution of the two groups indicates that the two distributions differ by only a few percentage points. The small number of manuscripts that still cannot be localised, due to the high standardisation of the production, were excluded from comparative analysis. In a second phase, statistical analysis of data from the smaller group made it possible to formulate criteria for localisation based on material attributes, in addition to textual and decorative aspects.

The particular features that characterise the production of this type of medieval book can be viewed from several perspectives. First, in terms of numbers: there are over 1,500 portable Bibles,<sup>7</sup> defined here as Bibles with an overall size of less than 380 mm, as currently preserved, and these manuscripts account for at least half of the entire thirteenth-century production of complete Bibles.<sup>8</sup> Secondly, from a textual point of view: portable Bibles have been seen as a means for disseminating the new biblical text, the Paris Bible.<sup>9</sup> Finally, from a material perspective: the desire to miniaturise the Bible, to make it handier and easier to carry, required the integration of new handicraft techniques and new types of layout. Such innovations made it possible to reduce the whole biblical text into a single volume, smaller in size than a modern paperback. Indeed, the overall dimensions of these new Bibles could be reduced to as little as 250 mm.

<sup>6</sup> However, within a quantitative analysis, a small number of errors among many hundreds of entries is statistically insignificant.

<sup>7</sup> By assuming a survival rate of 4.2% (in the absence of an estimation of the survival rate of medieval manuscripts, I am applying here the hypothetical survival rate of incubula developed by Uwe Neddermeyer) I suggest that the output of portable Bibles could have exceeded 30,000 copies. See Uwe Neddermeyer, *Von der Handschrift zum gedruckten Buch. Schriftlichkeit und Leseinteresse im Mittelalter und in der frühen Neuzeit. Quantitative und Qualitative Aspekte*, I. Text II. Anlagen, Buchwissenschaftliche Beiträge aus dem Deutschen Bucharchiv München 61 (Wiesbaden, 1998), pp. 72–81.

<sup>8</sup> According to a partial census of extant complete Bibles of the thirteenth century that I have conducted consulting all catalogues of French libraries, portable Bibles represent about 53.5% of all surviving complete thirteenth-century Bibles.

<sup>9</sup> In relation to the “Paris Bible” I cite only Laura Light’s papers, which also provide some discussion of portable Bibles: Laura Light, “Versions et révisions du texte biblique” in *Le moyen âge et la Bible*, ed. Pierre Riché and Guy Lobrichon, Bible de tous les temps 4 (Paris, 1984), pp. 55–93, at 75–93; eadem, “The New Thirteenth-Century Bible and the Challenge of Heresy”, *Viator* 18 (1987), 275–88; eadem, “French Bibles c. 1200–30: a New Look at the Origin of the Paris Bible” in *The Early Medieval Bible. Its Production, Decoration and Use*, ed. Richard Gameson (Cambridge, 1994), pp. 155–76.

The miniaturisation of the Bible required an overall restructuring of the physical attributes of the book, including the parchment, the quire structure, the layout, and the script. The size of script could be reduced to as little as one millimetre. Material and graphic innovations were introduced to reduce the size without jeopardising the functionality of the book and the legibility of the written page. It is important to underline that these new techniques were not used to produce a few deluxe copies; on the contrary, they were applied widely to produce a remarkable number of Bibles. This rapid production was possible thanks to the sophisticated system of commercial manufacture that developed in Paris and in other university towns. The production of University books in particular – most probably including the Bible – depended on the *pecia* system, which was the only solution that made it possible to reproduce a great number of manuscripts in a very short time starting from a limited number of exemplars.<sup>10</sup>

In this paper, I will focus on an analysis of the material aspects of the portable Bible, a topic that has largely been neglected in studies of this type of book up to now. Therefore, I will leave aside questions concerning the text, as well as the decoration and the dissemination of portable Bibles, themes that would be worthy of a separate in-depth analysis. Nevertheless, I would like to call attention to the fact that, although in the majority of cases portable Bibles report the Paris Bible text or a text with a strong Parisian influence, the correspondence of textual innovations with the reduction in size is by no means absolute,<sup>11</sup> nor does it necessarily mean

<sup>10</sup> I have found no evidence to support the dissemination of the biblical text through the *pecia* system in the portable Bibles that I have consulted. Nevertheless, since copying such a lengthy text might have taken as long as two years, it is highly improbable that there could have been sufficient exemplars including the entire Bible to satisfy the tremendous demand of scribes, especially in Paris in 1220s-1250s, when Bible production reached its peak. See in particular Richard H. and Mary A. Rouse, "The Book Trade at the University of Paris, ca. 1250-ca. 1350" in *La production du livre universitaire au Moyen Âge. Exemplar et pecia, Actes du symposium tenu au Collegio San Bonaventura de Grottaferrata en mai 1983*, ed. Jacques Henri Bataillon, Bertrand Guyot and Richard H. Rouse (Paris, 1988), pp. 41–114, at pp. 57–58. For biblical manuscripts (none a small portable Bible) that include evidence of *pecia*, see Giovanna Murano, *Opere diffuse per exemplar e pecia*, *Textes et études du Moyen Âge* 29 (Turnhout, 2005), pp. 318–19.

<sup>11</sup> Only 30% of the portable Bibles examined manuscripts contain the Paris Bible text; 4% use an archaic text; 12% include only the modern chapter divisions; more than half (53%) were written using a mixed text which, in addition to the modern chapter divisions, integrates the textual criteria of the Paris Bible in various ways (new order of biblical books and the characteristic set of prologues). The use of the Parisian text seems, in any case, correlated with the book size. In the corpus the use of the Parisian text decreases progressively from 60% in manuscripts of smaller size (size below 230 mm) to 24% in those of a bigger size (size between 380 and 450 mm).

that the Bibles were written in Paris. In fact, some portable Bibles include a non-Parisian text.<sup>12</sup> These have been found mainly in Italy and in England, but also in France, mostly dating from the first half of the century. This confirms that portable Bibles were needed across Europe, independent of different textual traditions, and can be analysed, as they are here, without considering their biblical text.

Although half of the Bibles in the sample whose place of production has been determined<sup>13</sup> are of French, and mainly Parisian,<sup>14</sup> origin (chart 1), the manuscript census and analysis have shed light on the importance of English (20%) and Italian Bibles (16%). It should also be pointed

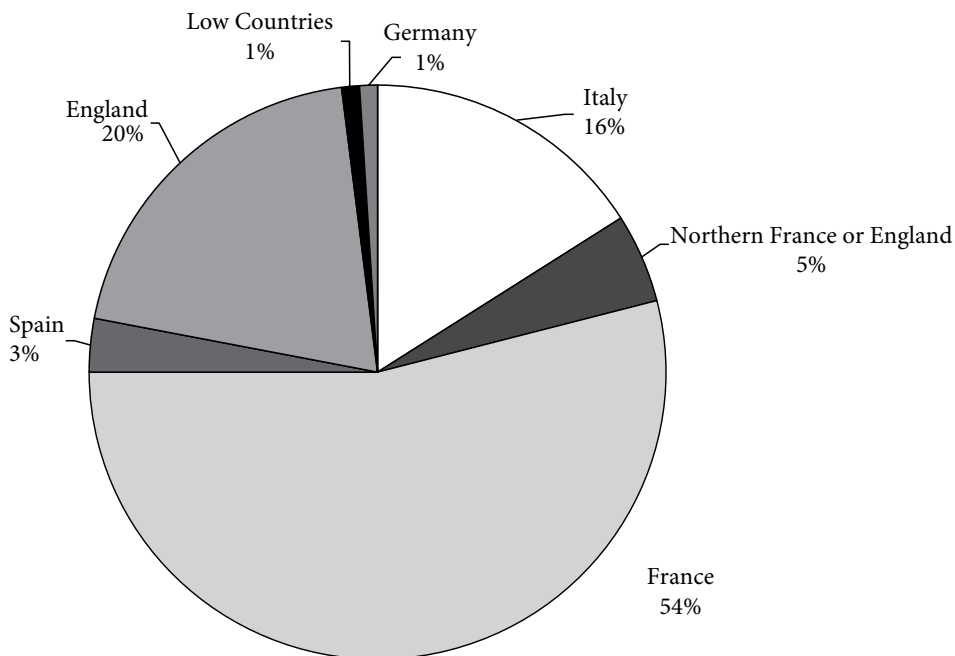


Chart 1. Place of origin of portable Bibles.

<sup>12</sup> In my corpus, there are fourteen portable Bibles that do not include any characteristics of the Paris Bible, not even the modern chapter divisions; among these, e.g., of Parisian origin, BnF, MS lat. 16267 (162 × 115 mm), and of Italian origin BAV, MS Vat. Lat. 6026 (187 × 130 mm).

<sup>13</sup> Unfortunately, only 2% of the manuscripts of my census have a colophon and any mention of the place of origin is very rare.

<sup>14</sup> It seems that there were no other centres of production of portable Bibles in France that are as important as Paris. Nevertheless, the exact localisation of many manuscripts remains uncertain in the absence of objective indicators, especially if such manuscripts do not have historiated initials and report a text that mixes ancient and modern characteristics. Still I believe it probable that the majority of manuscripts that have been classified as French are of Parisian origin.

out that my research indicates that both the percentages of English production and, to an even greater extent, of Italian production are underestimated, because cataloguers rarely note down the place of production when it is not Paris itself. In fact, among the Bibles that I have directly consulted the percentage of Italian manuscripts rises considerably, reaching 26%. The important localities for the copying of Bibles in Italy were much more dispersed than in France, and were concentrated primarily in the North of the country, in particular in the Veneto (twenty-five manuscripts), and to a lesser extent in Naples (seven manuscripts). In Bologna, in contrast, very few small-format Bibles were produced, despite the fact that it was an important centre for the copying of Bibles. These groups of manuscripts differ from the Parisian production both in their biblical text<sup>15</sup> and in their physical attributes, as I will discuss later on.

The production of portable Bibles began during the third decade of the thirteenth century (chart 2),<sup>16</sup> increased significantly up to the middle of the century, reached its peak during the second half and then rapidly collapsed at the beginning of the fourteenth century. Compared to the French and English production, which were nearly contemporaneous, the Italian production started slightly later and developed mainly during the second half of the thirteenth century.

The complete abandonment of the production of portable Bibles at the end of the century can possibly be explained by the very long usable lifetime of these objects: Bibles, and indeed most medieval manuscripts, were

<sup>15</sup> In reference to the characteristics of the biblical text of Italian manuscripts, see in particular Sabina Magrini, "Production and Use of Latin Bible Manuscripts in Italy during the Thirteenth and Fourteenth Centuries", *Manuscripta* 51/2 (2007), 209–57 and Guy Lobrichon, "Pour l'étude de la tradition et du texte de la Vulgate latine en Italie (XIII<sup>e</sup> siècle)" in *La Bibbia in italiano tra Medioevo e Rinascimento, Atti del Convegno internazionale, Firenze, Certosa del Galluzzo, 8–9 novembre 1996*, ed. Lino Leonardi, Millennio Medievale 10 (Firenze, 1998), pp. 23–33; repr. in Guy Lobrichon, *La Bible au moyen âge* (Paris, 2003), pp. 173–80.

<sup>16</sup> The oldest dated Bible of relatively small size seems to be New York, Pierpont Morgan Library, MS M.163 (216 × 162 mm), dated 1229, followed by the Dole, BM, MS 15 (162 × 108 mm), dated 1234, which is also the first dated copy that includes the text of the Paris Bible. The first portable Bible of Italian origin dates back to 1250: BAV, MS Ottob. Lat. 532 (154 × 109 mm). Unfortunately, dating the Bibles included in this study is difficult, especially since their production was so standardised and so concentrated over a short time-span; only 1.3% of the recorded manuscripts include a date. This dating ratio corresponds to the average one observed in the thirteenth century; see Carla Bozzolo and Ezio Ornato, "Les fluctuations de la production manuscrite à la lumière de l'histoire de la fin du Moyen Âge", *Bulletin philologique et historique (jusqu'à 1610) du Comité des travaux historiques et scientifiques* (1979), 51–75, repr. in *La face cachée du livre médiéval. L'histoire du livre vue par Ezio Ornato, ses amis et ses collègues* (Rome, 1997), pp. 179–95, at pp. 182–85.

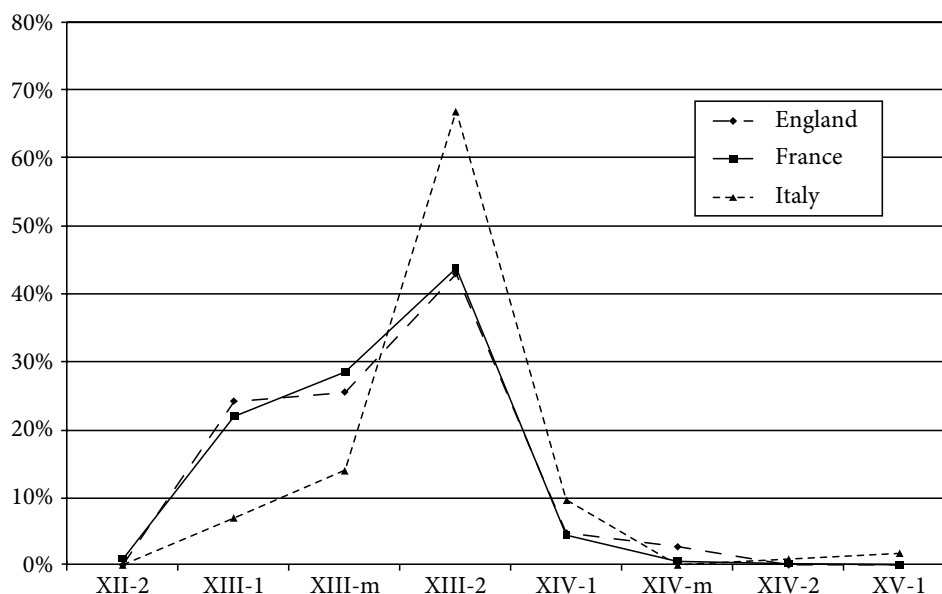


Chart 2. Production period according to place of origin (% of production per each country).

designed to last a long time, and were passed on from generation to generation. When the number of potential owners stabilised or decreased, the number of Bibles already circulating became sufficient to meet the demand. The long lists of possession notes from the fourteenth and fifteenth century confirm the fact that many Bibles were used for centuries. Moreover, it is also true that Bible production almost parallels the trend observed in global manuscript production, which reaches its peak in the thirteenth century, and decreases during the second half of fourteenth century due to the economic recession and the plague.<sup>17</sup> The production of portable Bibles, however, presents peculiar features: an explosion in output, followed by a sudden collapse some decades before that of manuscript production in general.<sup>18</sup> Moreover, this collapse was not followed by

<sup>17</sup> The phenomenon is discussed in Carla Bozzolo and Ezio Ornato, *Pour une histoire du livre manuscrit au Moyen Âge. Trois essais de codicologie quantitative* (Paris, 1980), pp. 84–109 and Bozzolo and Ornato, “Les fluctuations”, pp. 188–95. In addition, according to Bozzolo and Ornato nearly 50% of the biblical manuscripts still extant date back to the thirteenth century (see Bozzolo and Ornato, *Pour une histoire du livre manuscrit*, p. 53).

<sup>18</sup> These different patterns are probably to be linked with the stabilisation, in the late thirteenth century, of the number of mendicant Friars, probably the main users of these manuscripts. See Chiara Ruzzier, “Des *armaria* aux besaces. La mutation de la Bible au XIII<sup>e</sup> siècle” in *Les usages sociaux de la Bible, XI<sup>e</sup>-XV<sup>e</sup> siècles; Cahiers Électroniques d’Histoire Textuelle du LAMOP* 3 (2010, first online edition, 2011), 73–111. See also Bozzolo and Ornato, *Pour une histoire du livre manuscrit*, pp. 93–96.

the recovery in output in the fifteenth century that is observable in manuscript making as a whole.

#### ANALYSIS OF MANUSCRIPTS<sup>19</sup>

The groups of French, Italian and English origin present some disparities in term of size (chart 3). The clearest contrast is between France and Italy, while England occupies an intermediate position. France shows a clear preference for the “pocketbook” format, measuring less than 280 mm, while relatively bigger formats, which we could call “saddle-bag” Bibles, are much less common. If we restrict our analysis to Bibles of known Parisian origin among size-classes, there is an evident preference for smaller-size formats: 70% of manuscripts of the corpus are below 330 mm, with a significant preference for the size-class of 230–280 mm. The data curve referring to Italy is practically the opposite: none of the manuscripts is really small and the majority belongs to the size-class of 281–330 mm. Finally, in England a few very small book were produced, but the country seems not to show any particular preference for a specific size.

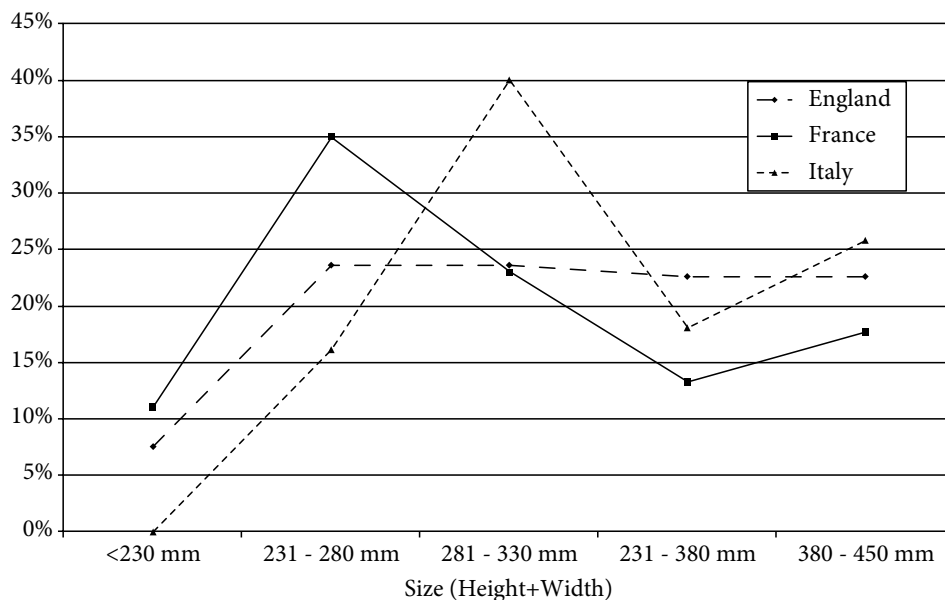


Chart 3. Distribution of manuscripts according to size and place of origin.

<sup>19</sup> This analysis is based only on the 357 Bibles that I have seen in person.

Although the variation in size may have been partly due to local preference (indeed, it is not at all improbable that tiny Bibles became a fashion in Paris), the differences in dimensions can also be explained by the hand-craft practices unique to each country. In fact, given that the biblical text was always, or nearly, the same length,<sup>20</sup> and that the miniaturisation of the text faced clear physical limits, the question of why different geographical regions preferred certain sizes is an important one.

In order better to understand the mechanisms that lay behind the variations in size, we need to consider the fact that the main element which determines the dimensions of a manuscript is the number of leaves, and that these two parameters – i.e. number of leaves and the overall size – are interdependent. In the absence of other types of restrictions, the aim of the artisan was to make a manuscript that was neither too thick nor too thin for its size.<sup>21</sup> The two common manuscript formats are small manuscripts with few leaves and large manuscripts with many leaves. This latter type was normally adopted for longer texts; Carolingian Bibles, and the giant Bibles of the eleventh and twelfth centuries are excellent examples.

In the case of portable Bibles, in contrast, the manuscripts are very small, but they include a very large number of leaves.<sup>22</sup> The average number of leaves in the *corpus* is in fact 492, but some examples include as many as 600–700. These are very high figures compared to those found in “ordinary” types of texts, which might include an average of between 100 and 200 leaves. Moreover, in the case of small Bibles, the relationship between the size of the manuscript and the number of leaves is reversed: the smaller the size of the book, the larger the number of leaves (table 1). As a result, portable Bibles of Italian origin, which are generally larger in size, have fewer leaves (420 on average), contrasting with those of French origin, which are smaller and have a greater number of leaves (538 on average) (table 2). We need to keep in mind that, in general, an increase in the number of leaves leads automatically to a significant increase in the thickness of the book, unless the text is divided into two volumes. This latter

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<sup>20</sup> Minor variations in length, due to the presence or absence of the *Oratio Manasse* and of the third book of Esdras, do not have a statistical influence in the study of the physical construction of the manuscript.

<sup>21</sup> See primarily Denis Muzerelle and Ezio Ornato, “La terza dimensione del libro. Aspetti codicologici della pluritestualità” in *Il codice miscellaneo. Tipologie e funzioni. Atti del Convegno internazionale (Cassino 14–17 maggio 2003)*, ed. Edoardo Crisci and Oronzo Pecere, *Segno e testo* 2 (Cassino, 2004), pp. 43–74.

<sup>22</sup> The only other exception among the manuscript production is that of Breviaries.

Table 1. Relation between size and number of leaves.

Size	<300 leaves	301–450 leaves	451–600 leaves	>600 leaves	Total
<230 mm	0,0%	7,5%	46,8%	45,7%	100,0%
231–280 mm	0,3%	20,2%	52,8%	26,7%	100,0%
281–330 mm	2,4%	52,1%	36,3%	9,2%	100,0%
331–380 mm	4,7%	50,0%	40,2%	5,1%	100,0%
380–450 mm	1,3%	56,3%	37,4%	5,0%	100,0%
All sizes	1,8%	40,0%	42,7%	15,5%	100,0%

Table 2. Average number of leaves according to size and place of origin.

Size	England	France	Italy	Other countries or unknown origin	Total
<230 mm	689	618		570	620
231–280 mm	510	569	427	513	531
281–330 mm	437	511	392	441	449
331–380 mm	472	482	443	496	473
381–450 mm	468	488	451	391	463
All sizes	481	538	420	471	492

option was not preferred by readers, and was therefore only rarely adopted.<sup>23</sup> The solution to this problem was to use very thin parchment: in this way it was possible to increase the number of the leaves in a book without making the book excessively thick. This procedure compensated for the decrease in size by increasing the overall space available. Another possible solution was to accept a slightly bigger size, and thus to limit the number of leaves.

The relationship between the average number of leaves and the place of origin corresponds, in fact, to the different thickness of parchment made in the three countries studied here: very thin in Paris, average thickness in England, and relatively thick in Italy.<sup>24</sup> This is explained by the fact that to

<sup>23</sup> Only 1.4% of the portable Bibles in the corpus are divided into two or three volumes.

<sup>24</sup> The thickness has been measured using a micrometre on a sample of thirty-nine manuscripts. The average measure obtained was of 0.088 mm, with a minimum of 0.064 mm recorded from smaller manuscripts of Parisian origin. The figures used for the rest of

the north of the Alps, parchment was probably made from calf skins, which were highly processed on both sides to produce very thin leaves, rendered soft to the touch, white in colour and with no contrast between the hair side and the flesh side. In Italy, by contrast, we find a thicker and more rigid parchment, often yellowish in colour and with a marked contrast between the two sides, obtained probably from goat skin. Therefore, it is the relatively thicker parchment in Italy which prevented an increase in the number of leaves, and therefore made it impossible to produce extremely small Bibles.

The thickness of the parchment and the number of leaves also influenced the quire structure. In fact, in order to ensure a solid long-lasting binding with numerous very thin leaves, it was important to adopt a structure that could ensure greater stability than the traditional quaternions (four bifolia). This was achieved by increasing the number of bifolia *per* quire, since if the parchment is too thin and there are too few bifolia, the action of sewing can cause the loss of leaves. During the thirteenth century, quaternions were progressively dropped in favour of senions (six bifolia) or of even thicker structures, which are more stable and possibly also saved the bookbinder time.<sup>25</sup> Therefore, the type of quire used depended essentially on the thickness of the parchment and, consequently, it is also linked to the manuscript size and the number of leaves. In particular, the use of quires of twelve bifolia is seen almost invariably in Bibles that include more than 600 leaves, but it is already a common feature in manuscripts with more than 500 leaves. Hence, it is only in France that we often find quires of twelve bifolia (table 3). In Italy, by contrast, we find mainly senions and, less frequently, quinions (five bifolia), which in

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the corpus are only an estimate. The terms “thin” and “thick” have to be interpreted within the context of our type of book production: even the thickest parchment of a portable Bible will appear extremely thin compared with that of a larger manuscript. The studies to date conducted on the thickness of parchment in fact list measurements which are always more than 0.14 mm. See in particular Francesco Bianchi, Donatella Buovolo, M. Giovanna De’ Caterina, Marilena Maniaci, Lucia Negrini, Ezio Ornato, Marco Palma and Anna Pannega, “Facteurs de variations de l’épaisseur du parchemin italien du VIII<sup>e</sup> au XV<sup>e</sup> siècle” in *Ancient and Medieval Book Materials and Techniques*, ed. Marilena Maniaci and Paola Franca Munafò, Studi e Testi 357–358 (Vatican City, 1993), pp. 95–184 ; repr. in *La face cachée*, pp. 275–345.

<sup>25</sup> For an overall analysis of quires of the late Middle Ages, see Paola Busonero, “La fascicolazione del manoscritto nel basso Medioevo” in *La fabbrica del codice. Materiali per la storia del libro nel tardo Medioevo*, ed. eadem, Maria Antonietta Casagrande Mazzoli, Luciana Devoti and Ezio Ornato (Rome, 1999), pp. 33–139. Concerning the factors behind the choice of a quire structure and for a few hypotheses concerning portable Bibles, see Ezio Ornato, *Apologia dell’apogeo. Divagazioni sulla storia del libro nel tardo medioevo* (Rome, 2000), pp. 51–77.

Table 3. Quire structure according to place of origin.

Quire (most common structure)	England	France	Italy	Other countries or unknown origin	Total
Quinions		1	14	1	16
	0,0%	0,9%	17,1%	1,7%	5,4%
Senions	16	19	60	28	123
	42,1%	16,4%	73,2%	46,7%	41,6%
Quires of 8 bifolia	14	17	5	14	50
	36,8%	14,7%	6,1%	23,3%	16,9%
Quires of 10 bifolia	7	11	2	9	29
	18,4%	9,5%	2,4%	15,0%	9,8%
Quires of 12 bifolia	1	68	1	8	78
	2,6%	58,6%	1,2%	13,3%	26,4%
Total	38	116	82	60	296
Total %	100,0%	100,0%	100,0%	100,0%	100,0%

the thirteenth century can be considered a fairly reliable indicator of Italian origin. Lastly, in England the structures preferred for smaller manuscripts were the quires of eight or ten bifolia. The quire of eight bifolia seems to be an intermediate solution, characteristic of England, which was well suited to the intermediate parchment thickness and manuscript size used in this country. Quires of eight bifolia can also be found in France, but only in larger manuscripts; therefore, when used in portable Bibles, they are a clear indication of English origin. Thus, as a result of my analysis, it emerges that the type of quires is an important factor in establishing the origin of a portable Bible.<sup>26</sup>

An increase in the number of bifolia *per* quire also led to the elaboration of new techniques including the use of leaf signatures, which were especially important in the workshops of commercial illuminators and

<sup>26</sup> The origin of Bibles used in the analysis was never determined only from the quire structure. Instead, it is the quantitative analysis that has highlighted the importance of this factor. Changes in the quire structure depending on the origin of manuscripts also appear, regardless of the type text, in the study of Paola Busonero, "La fascicolazione del manoscritto", pp. 50–61.

bookbinders, where many similar manuscripts were present at the same time, to avoid confusion among copies.<sup>27</sup> In particular, a primitive leaf and quire signature is typical of Parisian production (indeed, it is unique to Paris). These signatures consisted of letters, in alphabetical sequence, for each leaf in the first half of the quire, and marks, each different, labelling each quire. The system kept track of the order of the leaves within a quire but did not keep track of the order of the quires. These primitive leaf and quire signatures are found in 50% of manuscripts with longer quires (eight bifolia or more), and we can suppose that their absence in the remaining 50% of manuscripts may be due to trimming. I have found no primitive leaf and quire signature in quires structured in senions or quinions. This suggests that they were not in use in Italy – where the percentage of catch-words is much higher.

The data indicate that portable Bibles did not usually have a modular structure. This is a structure – observed by Marilena Maniaci in the so-called Atlantic or Atlas Bibles<sup>28</sup> – in which the end of quires corresponds with the end of textual units. The aim was to isolate, through *caesurae*, blocks of biblical books which have a homogeneous content. This practice is rarely applied to biblical production in the thirteenth century, and is completely absent in the portable Bibles of Parisian origin where the text flows continuously from St. Jerome's general prologue to the end of the Apocalypse, and often to the end of the Interpretations of Hebrew Names. However, it is possible to find some *caesurae* in French Bibles of non-Parisian origin at the beginning and/or at the end of the book of Psalms, between the Old and the New Testament and before the Interpretations of the Hebrew Names. I have noticed that the distribution of such *caesurae* represents an important indicator of the origin of a manuscript: the most common *caesura* in all countries is that which isolates the extra-Biblical text of the glossary (present in 56% of cases); this is followed by a *caesura* between the Psalms and the Proverbs (35% of cases), which, in theory, could lead to a division of the biblical text into two volumes. A *caesura* of this type is present in 56% of the manuscripts of Italian origin, but in only 27% of manuscripts of French and English origin. Finally, it is the presence

<sup>27</sup> See Patricia D. Stirnemann, "Nouvelles pratiques en matière d'enluminure au temps de Philippe Auguste" in *La France de Philippe Auguste. Le temps des mutations, Actes du Colloque international organisé par le C.N.R.S. (Paris, 29 septembre – 4 octobre 1980)*, ed. Robert-Henri Bautier (Paris, 1982), pp. 955–80, at pp. 959–60.

<sup>28</sup> See Marilena Maniaci, "La struttura delle Bibbie atlantiche" in *Le Bibbie Atlantiche. Il libro delle Scritture tra monumentalità e rappresentazione.*, ed. eadem and Giulia Orofino (Milan, 2000), pp. 47–60.

Table 4. Italian and English deviation in (difference of) average number of leaves with respect to the French production.

Size	France	Italian deviation	English deviation
<230 mm	618		+10%
231–280 mm	566	–24%	–10%
281–330 mm	504	–21%	–13%
331–380 mm	482	–16%	–1%
381–450 mm	491	–10%	–9%
All sizes	535	–22%	–9%

of a *caesura* between the Old and New Testaments which turns out to be significant: it appears in 61% of Bibles of Italian origin, but only in 12% and 23% of French and English Bibles, respectively, and is thus an important indication of origin.

Returning to the problem of the miniaturisation of the biblical text, we can see in table four that when Bibles of the same sizes are compared, the average number of leaves is systematically smaller in Italy (about 22% fewer) than in France, and that the difference in number of leaves between these two countries is more significant in manuscripts that are smaller than 330 mm. In larger manuscripts, by contrast, there is no correlation between geographical differences and the average number of leaves. What are the reasons for these variations? It seems clear that increasing the number of leaves was not by itself sufficient to produce the biblical text as a portable book. The second device used concerns the layout of the page. Differences in layout could theoretically be applied at three levels: 1) increasing the dimensions of the written space in relation to the dimension of the page;<sup>29</sup> 2) compressing the writing within the written space by increasing the number of lines – depending therefore, on the unit of ruling (i.e. the average height of a line area, measured in millimetres) and on the size of the writing; and 3) acting on the length of the text itself, by using abbreviations.

<sup>29</sup> One should note that nearly all portable Bibles have a text written in two columns, a solution widely used in the thirteenth century, which allowed for an increase in the density of graphic signs on one page without compromising the legibility of the text. For an analysis of the functional needs which lay at the basis of such a choice, see Bozzolo and Ornato, *Pour une histoire du livre manuscrit*, pp. 318–30. Nevertheless, I have reviewed more than ten portable Bibles copied in a single column.

It is important to highlight that the mechanism of these dynamics is identical in all the countries studied here; what varies according to the place of production is the material condition. For example, if the number of leaves can be increased, according to preference, thanks to thin enough parchment, one can have fewer restrictions in filling the page. In France, for the same size manuscripts, producers were free to choose between “rarefied”, that is non-densely written manuscripts with many leaves, and manuscripts with fewer leaves (which were consequently less expensive, since less parchment was needed) but with a more densely packed written space (table 5). In Italy, the material constrictions were more severe: given

Table 5. Average number of lines and average unit of ruling according to place of origin.

Size		England	France	Italy	Total
<230 mm	Average number of lines	40	46		45
	Average unit of ruling	2,28	2,06		2,10
231–280 mm	Average number of lines	46	47	52	48
	Average unit of ruling	2,27	2,23	2,08	2,21
281–330 mm	Average number of lines	53	49	54	51
	Average unit of ruling	2,43	2,62	2,25	2,45
331–380 mm	Average number of lines	50	50	52	51
	Average unit of ruling	2,89	2,95	2,81	2,88
381–450 mm	Average number of lines	46	50	51	50
	Average unit of ruling	3,29	3,35	3,13	3,26
Total average number of lines		49	48	53	50
Total average unit of ruling		2,64	2,58	2,57	2,58

the use of thicker parchment, it was not possible to increase the number of leaves, since this would result in a manuscript that was too bulky. An available option, however, was to expand the dimensions of the written area (*noir*) in relation to the dimensions of the whole leaf. Nevertheless, this solution was not adopted in Italy,<sup>30</sup> probably because the outcome would have been aesthetically poor and far less advantageous in terms of gaining space, than reducing the size of the writing.<sup>31</sup> Choosing to reduce the size of the writing, in fact, leads to increasing the number of lines per page. An intensive use of abbreviations also allowed a further decrease in the length of the text.<sup>32</sup>

In the case of French and Italian Bibles, two opposite solutions were adopted. The outcomes of these different solutions are especially evident in Bibles that are smaller than 280 mm. As examples of the different solutions adopted in the two countries, one can compare BnF, MS lat. 211 (167 × 111 mm) and BnF, MS lat. 232 (169 × 112 mm) (figures 4.1–2). The two Bibles, the former of Parisian origin and the latter of Italian origin (coming most probably from Padua or Venice), were both produced to high standards and are nearly the same size. Nevertheless, the written area of the Italian Bible contains fifty-three lines, while that of the Parisian one contains “only” forty-four. In any case, as the book size increases, the differences between the countries vanish and the solutions adopted everywhere are more varied. The reason for this trend is that there is a tendency to go back to a more traditional type of manuscript, where the material constrictions do not exercise the same pressure as is the case in extremely small manuscripts. Outside the context of portable manuscripts, it was possible to choose whether to give preference to a rarefied page and accept a heavy manuscript or the opposite.

<sup>30</sup> On the contrary, in the Italian manuscripts, the ratio of written space compared to the rest of the page turns out to be slightly lower than the average of my corpus, which is 42%. This figure is in any case lower than the average reported in the manuscripts of French origin from the thirteenth century (between 45% and 50%). Concerning this issue, see mainly Carla Bozzolo, Dominique Coq, Denis Muzerelle and Ezio Ornato, “Noir et blanc. Premiers résultats d’une enquête sur la mise en page dans le livre médiéval” in *Il libro e il testo. Atti del convegno internazionale (Urbino, 20–23 settembre 1982)*, ed. Cesare Questa and Renato Raffaelli (Urbino, 1984), pp. 195–221; repr. in *La face cachée*, pp. 473–508.

<sup>31</sup> Due to a greater reduction in the size of the text, the average number of characters per line is systematically higher in the Italian Bibles (on average 12% more) than in the French ones of the same size.

<sup>32</sup> According to a survey conducted on a fixed sequence of text, it emerges that Italian Bibles use 9% more abbreviated words than the French ones.

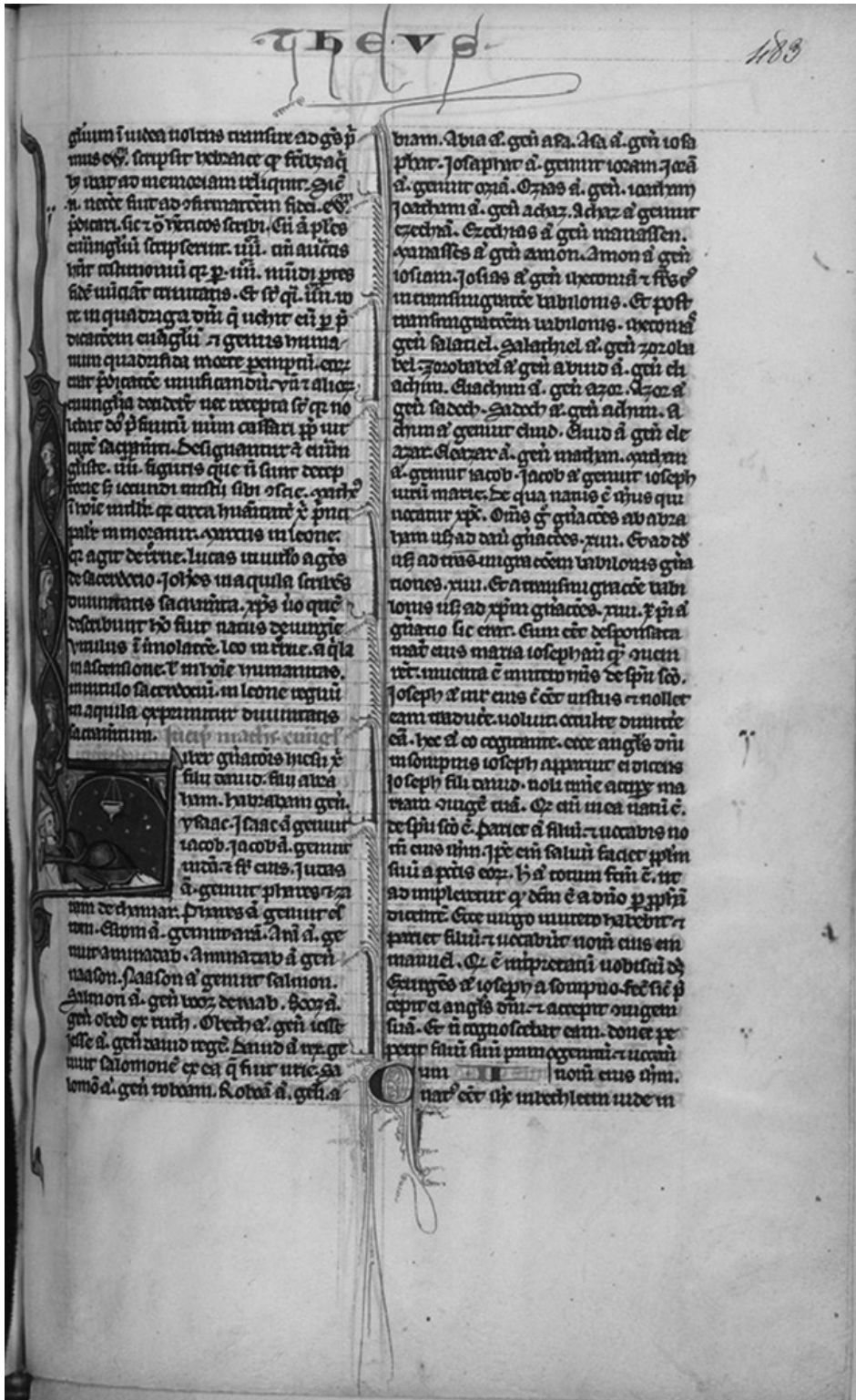


Figure 4.1. Paris, Bibliothèque nationale de France, MS lat. 211, fol. 483r.

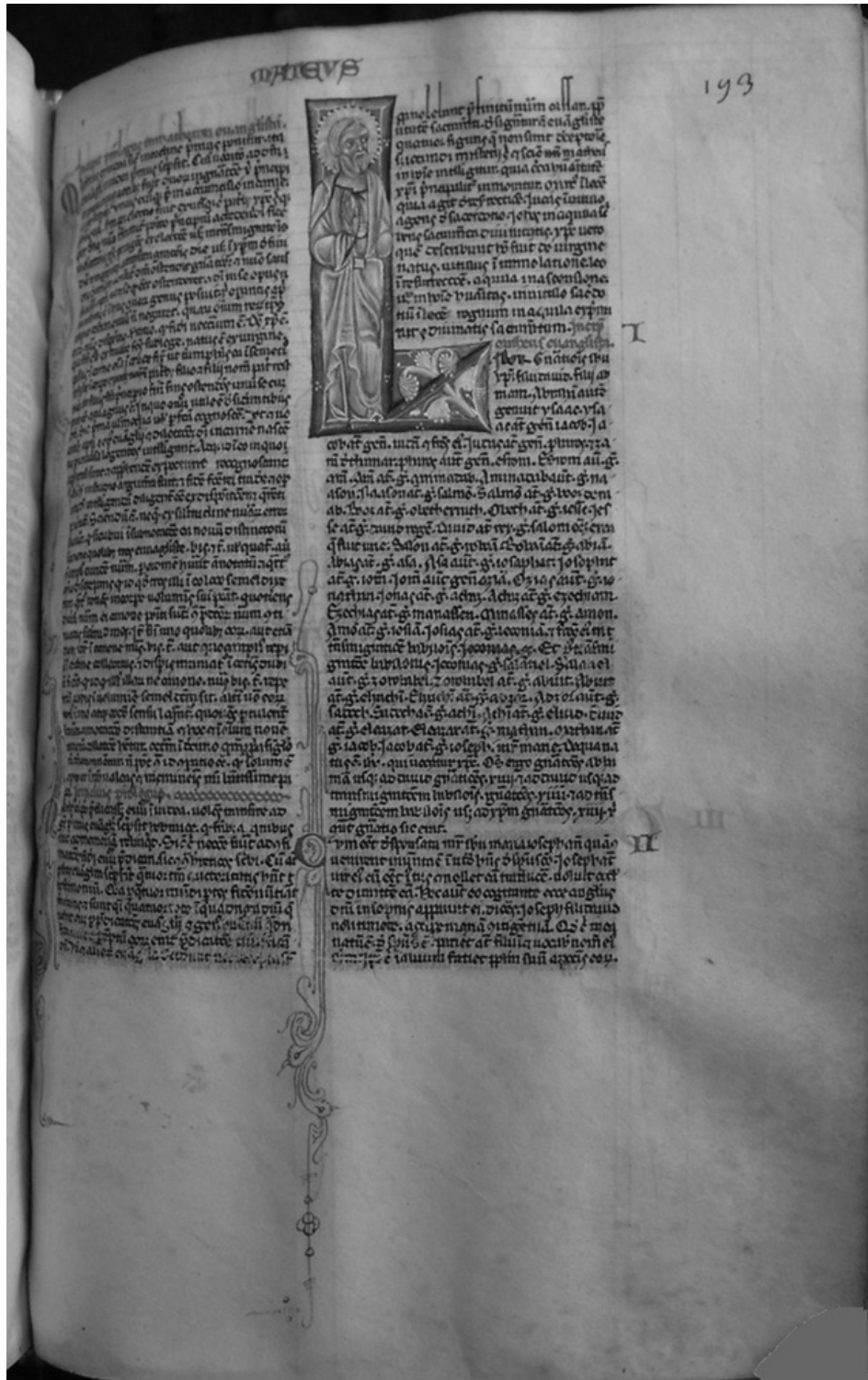


Figure 4.2. Paris, Bibliothèque nationale de France, MS lat. 232, fol. 193r.

It is worth asking whether France or Italy found the optimal solution. On the one hand, it seems that the French solution is more satisfactory from the point of view of aesthetics and legibility. To preserve a rarefied page and a text of an acceptable size, artisans found the means to reduce the thickness of the parchment, and consequently were able to increase the number of leaves without compromising the functionality and solidity of the book. On the other hand, we need to recognise that despite the need to exploit as much of the available surface-area as possible, the Italian page offers an acceptable compromise between the density of the page and its legibility. In addition, we should not forget that a smaller quantity of thicker parchment would have definitely been less costly.

English production nearly always positions itself between the French and the Italian solutions. Nevertheless, the outcomes in England are often closer to the former than to the latter, especially where the nature of parchment is concerned. In other aspects, which are less closely linked to the material restrictions, including the type of ruling patterns and the *mise en texte*, English Bibles do exhibit some unique characteristics. Although it goes beyond the limits of this survey to discuss these in depth, they include ruling with a thick brown plummet, frequent use of vertical and horizontal marginal lines, and frequent use of the colour blue for running titles and chapter numbers.

Finally, as far as the production of Bibles of known Parisian origin is concerned, the solutions adopted stand out both for their specific features and for their homogeneity. It is in Paris, in fact, that one can find the most innovative and refined skills, both concerning the processing of parchment and the making of quires, and consequently the density of the written space was not brought to an extreme. On the contrary, the preference for limiting the density of the page necessarily led to wasting a certain amount of parchment – which is fully compatible with the wealth associated with most of this production. The homogeneity and the innovations are indicators of a “mass-production”, probably found within the circles of the Parisian stationers from ca. 1230–40. This is confirmed by the fact that most of the material innovations which we have discussed are directly correlated with the text of the Paris Bible.<sup>33</sup>

Given this evidence, it is time to ask ourselves whether, at least from the strictly material point of view, there were other localities with productions

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<sup>33</sup> Of the Bibles of the corpus reporting the text of the Paris Bible, 94% have quires with more than six bifolia; quires of this size are totally absent in manuscripts having an archaic text or only the modern chapter divisions.

as standardised as that in Paris. On the one hand, the answer is no: from a material point of view, no other group of manuscripts is as easily identifiable as the Parisian one, nor is there one that presents such innovative features. On the other hand, we need to recognise that elsewhere producers seem to have been inspired by the Parisian model, without slavishly copying it, and achieved outputs of equal aesthetic value, despite adapting them to the constraints of local materials. In this regard, if the English work, from a strictly material point of view, differs only slightly from the Parisian model, in Italy we find different and more clearly distinguishable solutions, especially in terms of the layout. Even in the cases where the Parisian model was followed more strictly in terms of text and decoration,<sup>34</sup> the material structure remains rigidly anchored to the Italian tradition. This confirms that specific material features, and in particular, the type of the parchment, were a determining factor over the construction of the object and the final output.

Indeed, it is in Italy that we can isolate a group of Bibles according to a set of easily recognisable features. Bibles from Veneto, which from a textual point of view are related to other Italian Bibles, are characterized by some recurrent codicological features, which are worth listing. They are all of high quality and range in size between 250 and 330 mm, use a senion structure with three *caesurae* (after the Psalms, between the Old and the New Testaments, and before the Interpretations of Hebrew Names), feature quite a high exploitation of the page surface (the number of lines is often higher than fifty-five) and a characteristic decorative structure (figure 2).<sup>35</sup> Even if we are still very far from Parisian standardisation, these Bibles form a specific and easily recognisable type. In addition, it should be pointed out that the production of biblical manuscripts in this region in the third quarter of the thirteenth century was almost exclusively confined to portable manuscripts, probably linked with the flourishing convents of the mendicant friars in Veneto.

In addition, I would like to draw the attention to how geographically localised is most of the production of portable Bibles: Paris, Southern England and Northern Italy. This clearly highlights the fact that it required

<sup>34</sup> For an example of Naples production, see Hélène Toubert, "Influences gothiques sur l'art frédéricien: le maître de la Bible de Manfred et son atelier" in *Federico II e l'arte del Duecento italiano. Atti della III settimana di studi di storia dell'arte medievale dell'università di Roma (15-20 maggio 1978)*, ed. Angiola Maria Romanini, 2 vols. (Rome 1980), 2:59-76.

<sup>35</sup> For general information, see *La miniatura a Padova dal Medioevo al Settecento*, ed. Giovanna Baldissin Molli, Giordana Canova Mariani and Federica Toniolo (Modena, 1999), pp. 16-18.

highly developed technical skills to produce these Bibles, and such work was feasible only in towns which had already established an efficient system of manuscript production, linked with the development of universities.

Obviously the craft practices which I have indicated should be considered as overall trends which naturally embraced some individual exceptions. Nevertheless, I believe that it is important to highlight the role of the thickness of parchment as an indicator that can help explain the differences in approach. In addition, the study of the physical attributes of a large number of manuscripts enables us, on the one hand, to clarify the modes of production of manuscripts in the thirteenth century in general, and on the other hand, enables us to establish some reliable criteria that can help determine the place of origin to be used side by side with fundamental analysis of the biblical text and its decoration. Indicators of this codicological kind could, in fact, be particularly useful in the analysis of the majority of manuscripts which lack historiated initials,<sup>36</sup> and which, up to now, have been mostly overlooked. What is highlighted through this type of analysis is not only the importance of the Parisian production and the innovative character of the solutions adopted in that town, but also the development, mainly in Italy, of different solutions to achieve the same results: the compression of a very long text into a single small-size Bible appropriate for private and sometimes even itinerant usage.

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<sup>36</sup> 35% of the manuscripts of the corpus have only flourished initials. The rest of the manuscripts have all or part of the initials ornamented, but only 22% of the total have historiated initials for all the books of the Bible.