

Fragmentology

A Journal for the Study of Medieval Manuscript Fragments

Fragmentology is an international, peer-reviewed Open Access journal, dedicated to publishing scholarly articles and reviews concerning medieval manuscript fragments. *Fragmentology* welcomes submissions, both articles and research notes, on any aspect pertaining to Latin and Greek manuscript fragments in the Middle Ages.

Founded in 2018 as part of *Fragmentarium*, an international research project at the University of Fribourg (Switzerland) funded by the Swiss National Science Foundation, Stavros Niarchos Foundation (SNF), and the Zeno-Karl-Schindler Foundation, *Fragmentology* is published by the University of Fribourg and controlled by the Editorial Board in service to the scholarly community. Authors of articles, research notes, and reviews published in *Fragmentology* retain copyright over their works and have agreed to publish them in open access under a [Creative Commons Attribution](#) license; images may be subject to other licenses. Submissions are free, and *Fragmentology* does not require payment or membership from authors or institutions.

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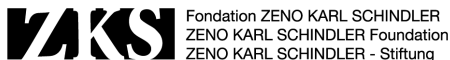
Instructions for Authors: Detailed instructions can be found at <https://fragmentology.ms/about/submissions/>. Authors must agree to publish their work in Open Access.

Fragmentology is published annually at the University of Fribourg. For further information, inquiries may be addressed to fragmentarium@unifr.ch.

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Funded by:



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Fragmentology 6

Editorial



Fragmentology #6 continues the practice of publishing articles, notes, and reviews on the study of medieval manuscript fragments. While the mission of the journal remains substantially the same since its inception, some changes have occurred over the past few years.

Most noticeably, starting with *Fragmentology* #5, the journal has been hosted by the Shared Open Access Publishing Platform ([SOAP₂](#)), a collaborative project of Swiss universities and university libraries. Migrating to SOAP₂ required that *Fragmentology* switch to the Open Journal Systems (OJS) software. An adaptation of the website is planned to enhance its appearance and utility.

Other changes with *Fragmentology* #5 include a change to Veronika Drescher's title, from Book Review Editor to Associate Editor, to reflect better the range of work and the impact it has had on the quality of the journal. In addition, Trine Wismann has volunteered her time for typesetting. This issue features some of her illustrations as well.

Fragmentology #6 includes, for the first time, a conference report. In addition to the time-tested formula of articles, research notes, and book reviews, *Fragmentology* has included since its beginning reports on fragment projects; this mission has now expanded to include summaries of conferences, workshops, and colloquia that are entirely or substantially dedicated to manuscript fragments.

A few years ago, I heard a distinguished colleague comment on the perils of the current practice of entrusting work with fragments to early-career scholars. As objects of analysis, fragments present far more technical challenges than do codices, and thus relative beginners cannot adequately describe and publish this material. In fact, this observation raises two separate points. First, what are the technical challenges, and how do we meet them? Second, should fragments, especially the description and publication of fragments, be used in the training of scholars?

The studies of particular fragments published in this issue show that seasoned experts can meet the technical challenges required. A single leaf, a series of quire guards, or even the ghost of a fragment imprinted on the boards of a binding provides the opportunity for a detailed examination of a handwritten object and its place in multiple contexts. Moreover, the varied situations that gave rise to these studies deserves consideration, as they include work within a library's collection (Mullins), a recent auction listing (Schabel), a survey of fragments in digitized early prints and manuscripts (Beullens), and research on a text carried by the host volume (Costantini). For those with experience working with early prints, manuscripts, and documents, a fragment can provide the opportunity for an engaging historical narrative.

On the other hand, these studies build on prior discoveries, themselves the fruit of expertise. Schabel's analysis would not be possible without Donadoni's auction catalogue entry; Barratt's publication of manuscript fragments in Auckland enabled Mullins to identify Dublin fragments from the same book and even from the same parchment. Beullens once again shows that digitization and publication of incunables without detailed analysis of the fragments still helps. Analysis requires discovery, and with countless pieces of manuscripts, documents, and early prints, even the most basic description makes the object more likely to be found by researchers capable of assessing it more fully.

While they require specialized expertise, fragments also lend themselves well to teaching. Unlike a relatively complete codex, a fragment is conceptually manageable and encourages the student to consider its minutiae. By analyzing a series of fragments, a researcher can develop a range of experiences and observations rapidly, and learn to appreciate books in their entirety.

Fragments are abundant enough for both seasoned experts and beginners to work on them, provided they share a common descriptive language. A quick examination of what is published on *Fragmentarium* shows the diversity of skills and approaches taken, with some aspects showing more homogeneity of language than others. Indeed, one of the unmet goals of the original *Fragmentarium* project was to develop guidelines for fragment descriptions.

Part of the challenge was that we did not have as clear an idea of who would be fragmentologists and what skills they would bring. Part involved the impossible task of finding consensus among disparate national and disciplinary traditions of working with cultural heritage. But the core problem remains: we need to document how to relate the fragment to multiple wholes, including the original and the circumstances of fragmentation and reuse, but we need to make accessible the vocabulary, the methods, and the conceptual apparatus for that purpose.

In this spirit, my own contribution to the volume represents a small step, treating how to relate fragments of books to a prior whole that now has only notional existence. Hopefully, *Fragmentology* can serve as a place for methodological dialogue, criticism, and experimentation to meet this challenge.

The findings presented here depend on the work of prior specialists and demonstrate the need for familiarity with fragments more broadly. Yet, that distinguished colleague is correct insofar as, by extending that awareness and providing the tools, and by encouraging work with fragments, we propagate the imperfect: transcription errors, dating and localization mistakes, even incorrect identifications. If such imperfection aids discovery and does not hinder improvement and later correction, then it benefits our understanding and helps build the discipline. We strive to minimize error, not to stigmatize it.

William Duba
Editor of Fragmentology 6 (2023)
Fribourg, 31 December 2023

Erratum

In the review of *The Bristol Merlin: Revealing the Secrets of a Medieval Fragment*, published in *Fragmentology* V (2022), 95–98 the list of authors was inaccurately presented. It has been corrected to read: Leah Tether, Laura Chuhan Campbell, and Benjamin Pohl, with the assistance of Michael Richardson.

Finding the Prior Leaf: Manuscript Fragments and Original Codices

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Abstract: Fragments of Latin-script medieval manuscript books evoke the whole to which they once belonged, encouraging us to build a mental model of the now-broken whole. Discussing fragments thus requires a way to describe not just the surviving objects and how they relate to their current context, but also how they related to the original. At the most basic level, relating individual pieces to an original codex requires identifying the fragment's physical role and orientation in the codex. Then, if the text of the fragment is known, extrapolation can be used to reconstruct leaves, gatherings, and codicological units. An extrapolative method is documented and validated using experimental data and examples from the *Fragmentarium* web platform.

Keywords: experimental fragmentology, reconstructions, methodology, applied synecdoche

Fragments draw attention to the missing whole. The base of a column invites speculation on the building that once stood, a fossilized jawbone asks for the monster that held such teeth, a potsherd evokes an amphora, and a scrap of a manuscript begs the original codex. The immediate impulse is towards reconstruction, using context, conjecture, and contrivance to integrate the remaining pieces into an imagined whole.

* I would like to thank Laura Albiero, Pieter Beullens, Lisa Fagin Davis, Veronika Drescher, Liz Mullins, and the two anonymous referees for their comments on drafts of this paper. Some of the research presented here was produced while I was employed on the Swiss National Science Foundation Projects *Fragmentarium* (Grant number 156569) and *Fragmentarium Phase II* (Grant number 182173), PI: Christoph Flüeler.

By definition, fragments evoke two realities: what they currently are (fragments) and what they were, namely, the something of which they are now a fragment. Working with manuscript fragments, these two realities correspond to two physicalities, the current, fragmented state of the object, and the prior whole from whence it came. It is impossible to think of a manuscript fragment as a fragment without imagining the role that piece played in its previous context. For fragments of manuscript codices in the Latin script tradition (the focus of this study), this role was as part of a book, and by recognizing a fragment as such, we build a mental model – a reconstruction – of that book.

Fragmentology does not limit itself to reconstruction, but reconstruction is an inescapable part of the study of manuscript fragments. The contributions to the web platform *Fragmentarium* made by research projects, individual scholars, and seminar students have revealed some of the problems posed by the dual physicality of fragments. First, the naming and numbering systems used are largely (and rightly) taken from library practices that refer to intact codices, and using them to refer to parts of books can be confusing. Second, those charged with cataloguing fragments need to identify and situate them; that is, they need to build a mental model of how the fragment functioned in the prior whole, and from that model, determine whether the unbound fragment is part of a leaf or a bifolium and which side is which. Often, however, constraints of time and ability make them rely on material and paratextual cues to do this work of identifying and situating fragments, and yet there is a lack of guidance in the literature. Finally, if the fragment is of a known work, the visible text on the fragment can be used to reconstruct leaves, quire structures, and even entire codices. But, while the methodologies to perform such reconstructions seem obvious, they have not been documented, let alone validated by experimentation. Indeed, in spite of the considerable value such reconstructions can offer to our understanding of the process of fragmentation and to book culture in the middle ages, and in spite of the relative simplicity and ease with which such reconstructions can now be made, they are rarely practiced.

For these reasons, the following contribution presents briefly a way to discuss book fragments as they relate to the structure of the original book, followed by a short discussion of how to orient an unbound codex fragment by determining whether it is a leaf or bifolium and in which way it was bound into the original book. With these basic steps out of the way, the article focuses on the method of extrapolating from the surviving fragment to the larger whole, from rebuilding the page to reconstituting the codex. Much of the material, especially at the

beginning, may be obvious to experienced fragmentologists, but, since I was unable to find a satisfactory presentation, I hope that it is at least helpful for those entering the field, and can serve as a point of departure for future treatments.

Talking about fragments from manuscript codices

Researchers and cataloguers tend to name the parts of fragments after the parts of books. Just as a medieval manuscript book is most often foliated, with each leaf receiving a number in sequence and its two pages being distinguished as recto and verso, so are fragments: leaves are most often numbered, typically in the order they appear in situ, or in a pile of detached fragments, and the recto verso sides assigned. Yet, a codex typically is read and understood in sequential order, e.g., 1r-1v-2r-2v..., while reading a fragment often requires following a disrupted order with extensive gaps. As a result, for fragments, the numbering scheme used rarely matches its intellectual order. Fragment cataloguers can increase the confusion when they fail to orient and situate correctly their objects, but the mismatch largely arises due to the inadequacy of the naming scheme to capture both the current physical order and the one that preceded fragmentation.

A dismantled book does not maintain the sequential order of the prior whole. While single-leaf manuscript pages (singletons) do occur, the majority of text is written onto bifolia, single sheets comprised of two attached leaves, side-by-side. Bifolia are stacked into gatherings, typically of four (quaternion), five (quinion), or six (senion) and folded in half. Holes (sewing stations) are cut in the fold, through which a cord attaches the gathering to the sewing supports on the spine of the book. Since bookbindings, like medieval manuscript books in general, are unique historical artefacts, they vary not only by region and time, but also according to the unique needs and historical accidents of the individual book.

A quaternion, therefore, is composed of four bifolia, containing the order of leaves 1-8 (outermost bifolium), 2-7, 3-6, 4-5 (innermost

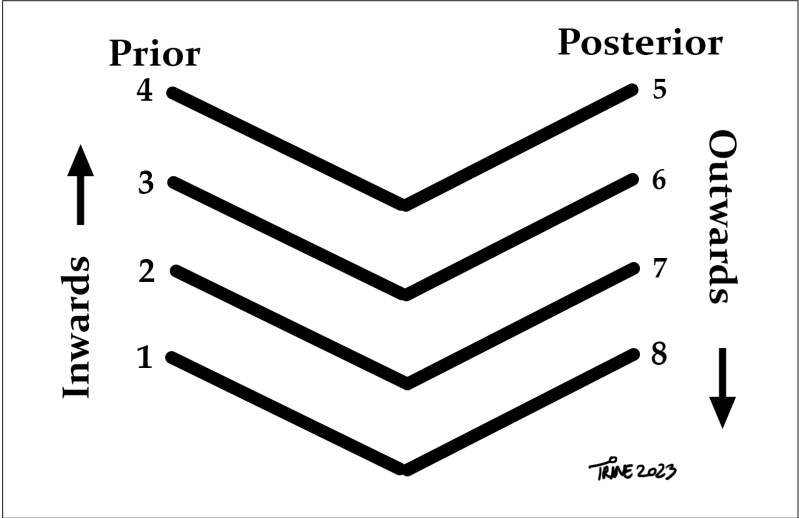


Figure 1: Quaternion, showing foliation, recto-verso sides, and the relationship to bifolia, which have sides that are inward- and outward-facing, as well as prior and posterior leaves

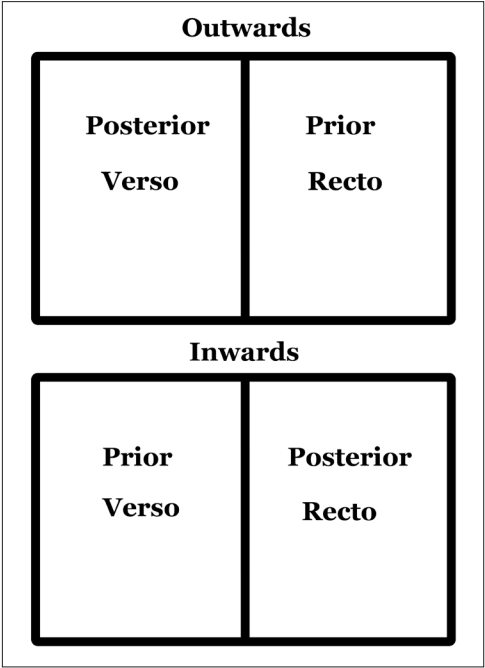


Figure 2: Diagram of a bifolium, showing outward and inward sides, with the recto and verso of prior and posterior leaves

bifolium). The sides of a bifolium are not recto and verso, for each side has a recto, on the right, and a verso, on the left [Figure 1]. The sides of a bifolium can be referred to with reference to the fold; the side that is outside, facing the binding and other gatherings in the codex, we call here ‘outward-facing’, or just ‘outwards’, and the side that is inside, folded towards itself, we call ‘inward-facing’ or just ‘inwards’.¹ The two leaves of the bifolium are related as prior and posterior; the prior leaf has the recto facing outwards and the verso facing inwards; the posterior leaf has the recto facing inwards and the verso facing outwards [Figure 2].

In practice, however, bifolia often appear foliated in a variety of ways, sometimes as a leaf (with the outward- and inward-facing sides assigned recto and verso), sometimes as bifolia, foliated sequentially, so that two consecutive bifolia would have leaves foliated 1-2 and 3-4, respectively, and any texts on those bifolia would be read f. 1-3-<gap>-f. 4-2, where the <gap> corresponds to the content of any bifolia or singletons inside the bifolium foliated 3-4.

Orienting the Fragment

If the text is known, and can be read, determining recto and verso is usually trivial: the recto comes before the verso. For bifolia, identifying the prior and posterior leaf might be more difficult, especially if there are different texts on each leaf. Often, however, the text is not identifiable, or the person doing the cataloguing does not have the time or ability to make sense of it. In such cases, the fragment’s physical characteristics and paratextual elements can help with the orientation.

Leaf or Bifolium?

Often, it is clear whether we are looking at a fragment from a single leaf or from a bifolium: a leaf is longer than it is wide, and a bifolium is wider than it is long. When bound in a book, a bifolium

¹ D. Muzerelle, *Vocabulaire Codicologique. Répertoire méthodique des termes français relatifs aux manuscrits*, Paris 1985, 91–92 (311.01–12) only includes in his vocabulary the page and the folio as ways of referring to a surface and not the bifolium.

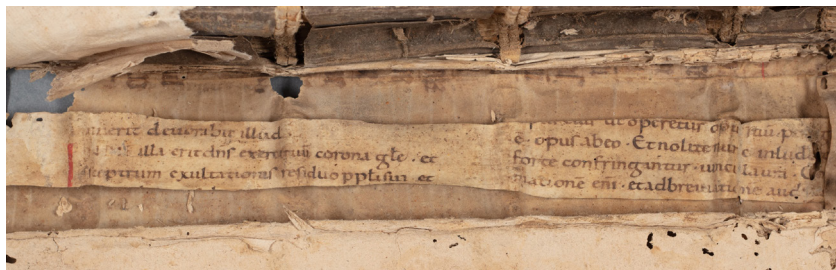


Figure 3a: [F-g70d] Toruń, Biblioteka Uniwersytecka, Ob.6.III.669/2 – a: Single leaf. The gap between the two columns has no signs of a fold. Left: Is. 25: 10–12, Right: Is. 26:21

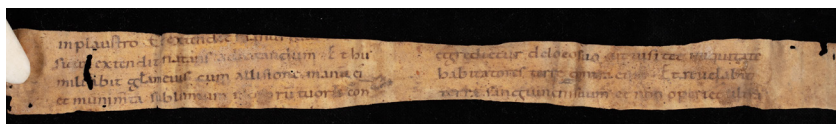


Figure 3b: [F-g70d] The other (verso) side. Left: Is. 28:4–5, Right: Is. 28:22

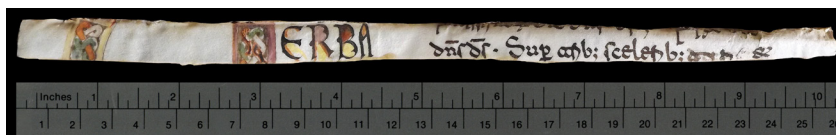


Figure 4: [F-nqtb] Montecassino, Archivio dell'Abbazia, 208: Single leaf. The gap between the two columns shows no signs of a fold.



Figure 5: [F-qszi] Antwerpen, Rijksarchief te Antwerpen, Verzameling Losse Aanwinsten, nr. 2.28: Bifolium with sewing station

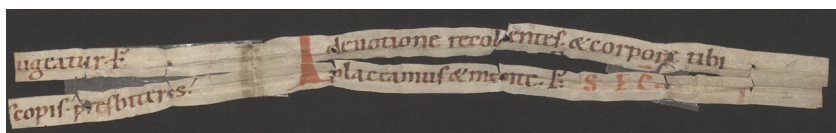


Figure 6: [F-z87a] Wien, Österreichische Nationalbibliothek, Fragm. 4b: Bifolium with fold





Figure 7a: [F-t6ih] St. Gallen, Stiftsbibliothek, Cod. Sang. 1002, p. 24–25: Bifolium (inwards side) without any clear indication. A faint trace of the fold can be seen. Left: Ps. 145:13, Right: 147:10



Figure 7b: [F-t6ih] Outwards side. Left: Ps. 147:15, Right: Ps. 144:8



is folded in the middle, where holes are cut for sewing stations. But in some cases, particularly in strips cut for use as quire guards, the distinction is not obvious [Figures 3–7]. If the text is known, then the flow of the text will reveal the difference: text on a two-column leaf flows from one column to the other, and from one side to the other; text on two single-column leaves in a bifolium flows from the right (recto) of one side (outwards), to the left (verso) of the other side (inwards), and, after a gap for any inside bifolia, from the right (recto) of that side (inwards) back to the left of the other side (outwards).

Sometimes, ruling and pricking can make the distinction between bifolium and two-column leaf clear, since pricking occurs only outside of columns, and ruling through the gutter is often more complex than ruling between columns.

Leaves: Recto and Verso

If a leaf is complete, reading the text can often reveal which part goes before the other. Rubrics and numbering along the margins can also be of help. Often, however, the text is not known, or the script is not legible, at least to the person working with the fragment. At this point, evidence of how the leaf was bound and paratext can aid in orientation.

Binding evidence

The evidence that fragments provide of binding structures can be crucial for understanding the original codex. Holes in the support

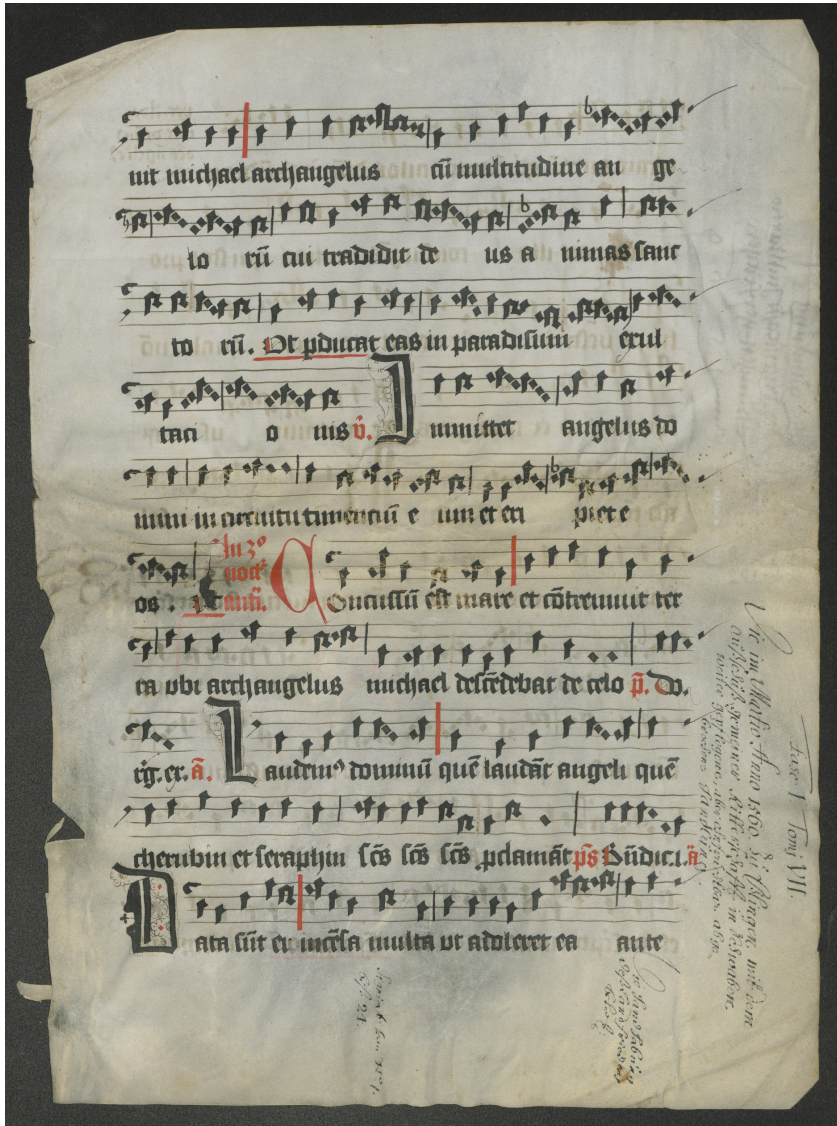


Figure 8: [E-eyes7], Stuttgart, Hauptstaatsarchiv, C 9 Bü 184, recto (rights): a single leaf reused as a wrapper. The left side shows evidence of the sewing stations.

Image Rights: <https://www.landesarchiv-bw.de/nutzungsbedingungen>

point to the fragment's previous life. The presence of sewing stations can indicate where the center of the bifolium was [Figure 8]; therefore, in the case of a single leaf, the recto is the side with such holes on the left. Binding fragments, however, provide evidence of both the binding of the original codex and that of the host volume, and make the identification more complex.²

Paratextual elements

Signs of foliation usually appear on the recto; if numbering only appears on one side, that side is likely the recto [Figure 9]. On occasion, however, numbering will be according to facing pages (that is, the verso-recto pairs of an open book); in such cases, the number can occur in the top center margin, or on the verso, in the top left [Figure 10].

Running titles are usually designed to be read with the book open, from verso to recto. The middle-Dutch translation of the Epistle to the Hebrews preserved in [F-ertw] [Figure 11] has the running title *Ad Hebreos*, with *Ad* on the verso and *Hebreos* on the recto. In general, the more specific indication, often a number (of chapter, book, distinction, question, or similar), appears on the recto. Thus, the running titles to [F-xgw4], a copy of Gratian's *Decretum* read "Ca." on the verso, followed by "XXIII" on the recto [Figure 12]. In this latter case, the fragment is a leaf that was re-used in a binding as an end-leaf hook, with a large fold and sewing stations (to the host volume) on the outer side of the leaf (right on the recto, left on the verso); the fragment was cut along the original fold, and the indentations of the original sewing stations can be seen on the opposite (inside) of the fragment (left on the recto, right on the verso).

Bifolia

Binding evidence and paratext can also be used to determine the facing of bifolia. Numbering, whether of foliation or of section of a book, on the rectos can aid in determining the sides: the outward side usually has a lower number on it.

² J.M. Sheppard, "Medieval Binding Structures: Potential Evidence from Fragments", in *Interpreting and Collecting Fragments of Medieval Books: Proceedings of The Seminar in the History of the Book to 1500*, Oxford 1998, ed. L.L. Brownrigg, M.M. Smith, London 2000, 166–175.

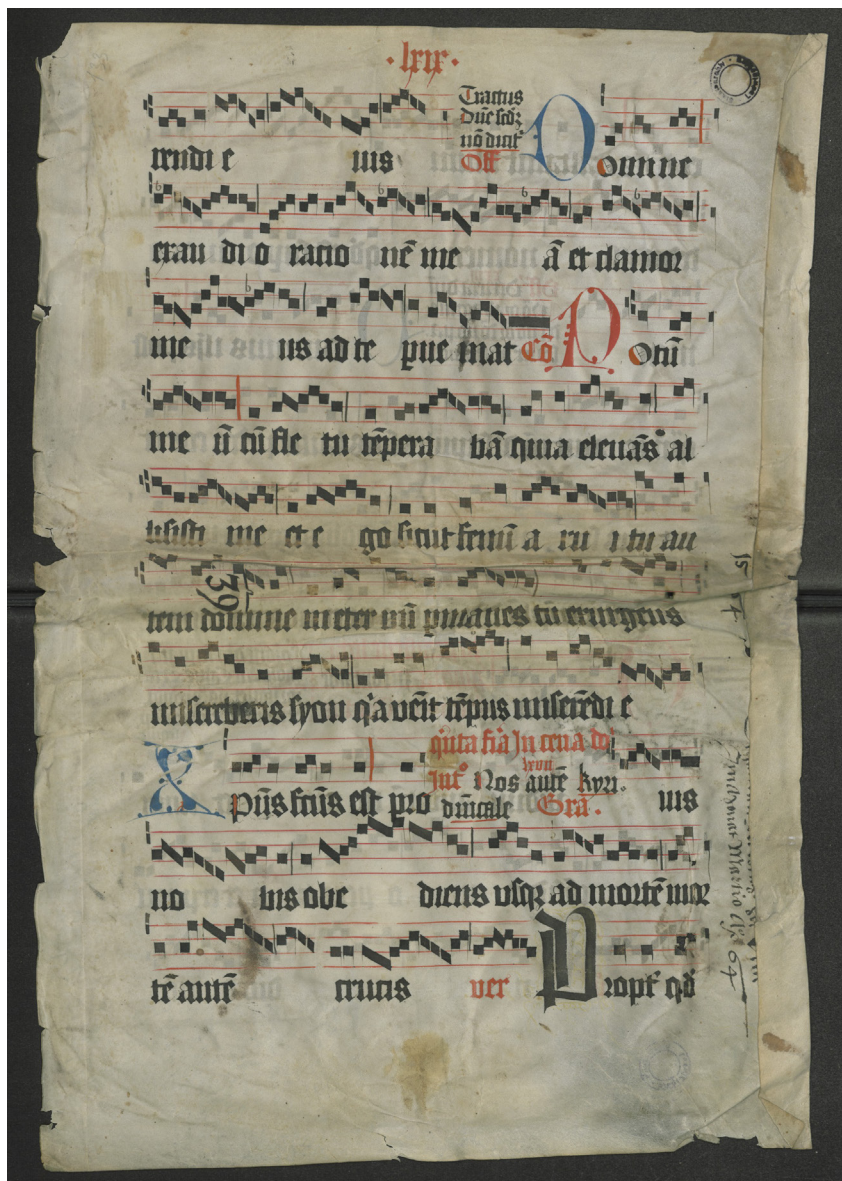


Figure 9: [F-wide6] Stuttgart, Hauptstaatsarchiv Stuttgart, C 9 Bü 186, recto: in addition to the foliation at the top, note holes for the sewing stations to the left.

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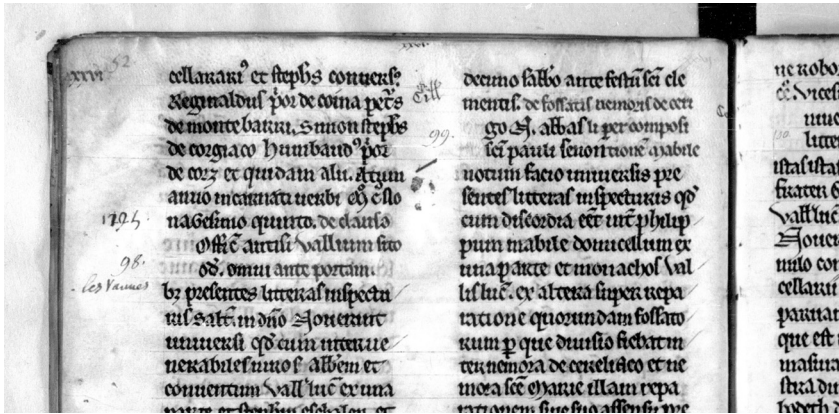


Figure 10: Cartulary of Vaultisant, Paris, Bibliothèque nationale de France, latin 9901, f. 28v, showing a thirteenth-century number xxvi in the top-left corner of a verso and the number xxvi above the intercolumnar gap. The number xxvi is also visible on the facing recto (f. 29r, not pictured).

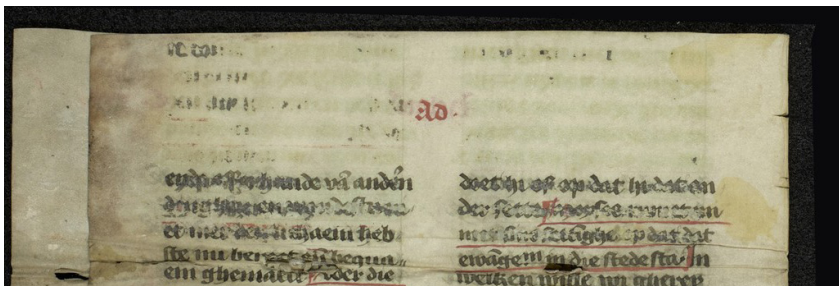
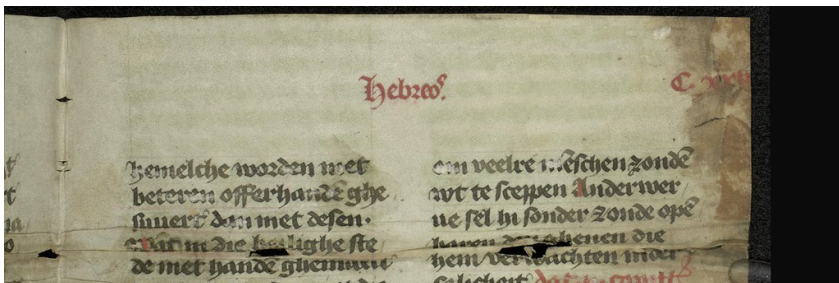


Figure 11: [F-ertw], Gent, Koninklijke Academie voor Nederlandse Taal en Letteren, KANTL.HS.7c. Upper image: f. 124r, with running title “Hebreos” and foliation; lower image: f. 124v, with running title “Ad”

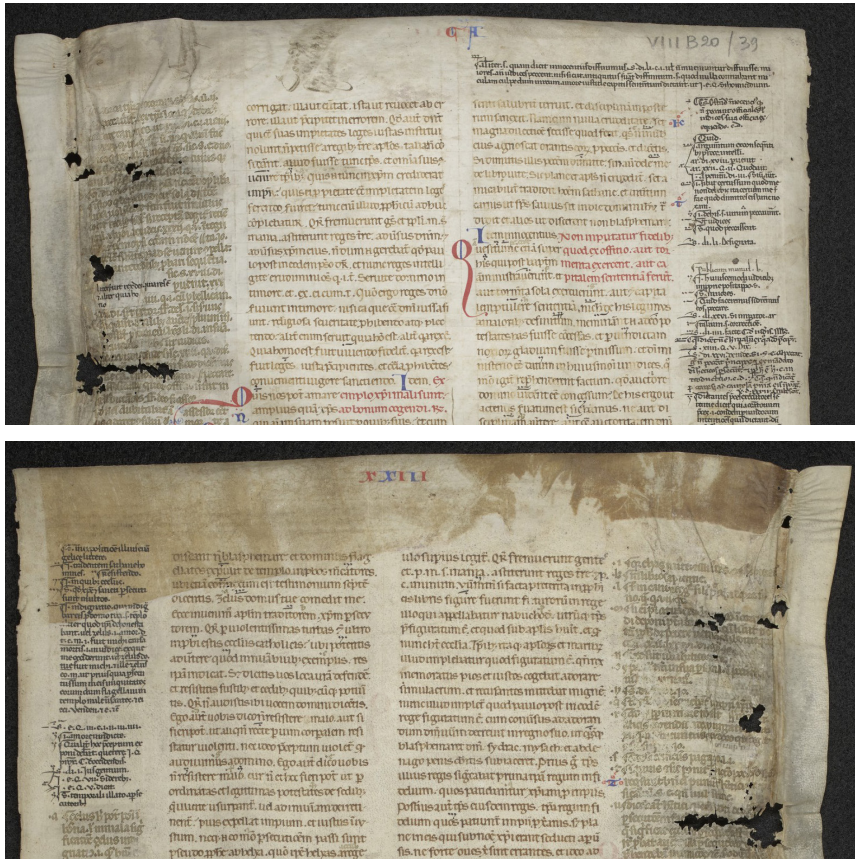


Figure 12: [E-xgw4] Leuven, Archief van de Abdij van Park, VIII B20/39, recto (top), verso (bottom). Running titles “ca” and “xxiii”

Situation in Gatherings

Most of the physical and paratextual evidence concerning the orientation of bifolia, however, also helps to situate bifolia and singletons in their original gatherings. The innermost bifolium can be recognized because the text on the inwards verso continues on the inwards recto. In other words, the two leaves are consecutive. Even without the text, sometimes the imprint along the fold left by the sewing reveals the innermost bifolium [Figure 13].

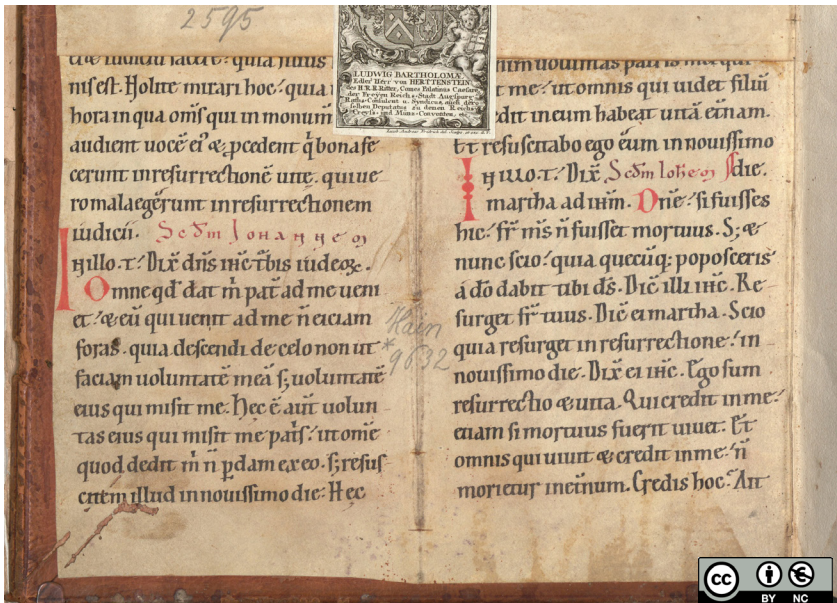


Figure 13: [F-oawl] München, Bayerische Staatsbibliothek, 2° Inc.c.a. 2595, front pastedown, lower bifolium (1B). The innermost bifolium, inward-facing side, showing imprint of sewing along the fold. The text, John 6:40, continues across the fold (*Haec | est autem voluntas*).

Likewise, the exterior (outermost) bifolium often has a catchword written on the verso of the outward side, to match against the first word(s) of the next gathering. The presence of such a catchword can indicate the orientation of the bifolium and the position (outermost) in the gathering [Figure 14].

Catchwords sometimes appear in other places, however. For example, in the copy of the [Ps-?]Augustinian *Meditationes* (PL 40, col 938–940), 37A, preserved in Gent, Universiteitsbibliotheek, HS.2582/083 [F-aicg], a catchword appears on the inward verso of the center bifolium in what appears to have been a binion [Figure 15].

Often binders will employ leaf signatures as well; in the thirteenth century, what Gumbert calls “primitive leaf signatures” indicate the order of bifolia within a quire, with a numbering of each of the bifolia or single leaves bound in that gathering, with (Roman)



Figure 14: [E-jx2h] Cluj-Napoca, Biblioteca Academiei Române, Fragm. Cod. Lat. 7, flesh side – Missale; inset: detail of catchword

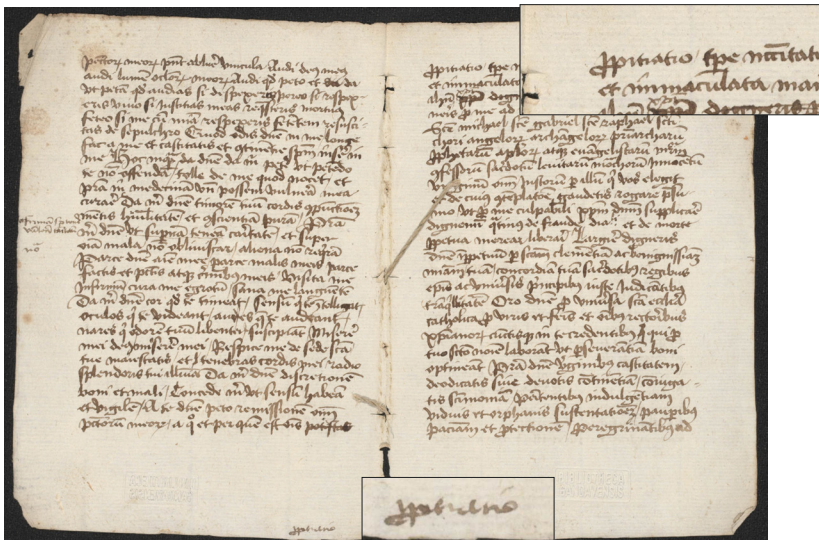


Figure 15: [E-aicg] Gent, Universiteitsbibliotheek, HS.2582/083, f. [3]v- [4]r: catchword at bottom of the verso (magnified in inset), *propitiatio*, matches the first word of recto, and the text reads continuously across the fold.

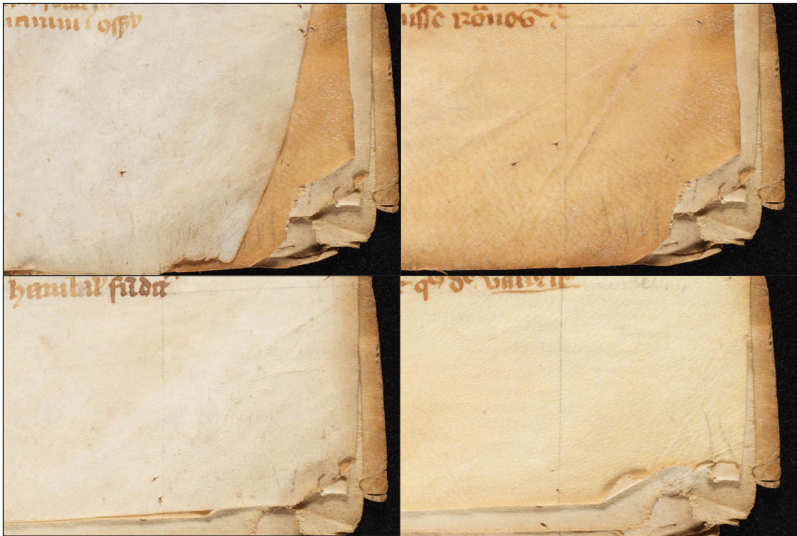


Figure 16: [F-4tsf] Bern, Burgerbibliothek, Cod. A 94.24, detail of f. 1r (top left), 2r (top right), 3r (bottom left), and 4r (bottom right), showing primitive leaf signatures III, IIII, v, and vi



number 1 indicating the outermost bifolium. By the fourteenth century, leaf signatures can be found composed of a letter, indicating the gathering, followed by a number, giving the bifolium's position in the gathering.³ Usually written faintly and on the bottom right of the outward (prior) recto, signatures rarely are identified as such on fragments, but they are extremely helpful for determining the orientation of the bifolium and its position in the gathering. For example [F-4tsf] Bern, Burgerbibliothek, Cod. A 94.24 is a gathering of four bifolia, and the rectos of the first four leaves (1r, 2r, 3r, 4r), corresponding to the outward recto of the four bifolia, have signatures [Figure 16]. While the *III* on f. 1r is hardly visible, the indications *IIII*, *v* and *vi* on f. 2r, 3r, and 4r, respectively, make clear the order of the bifolia. Since ff. 4-5 is the innermost bifolium, these signatures indicate that the gathering was originally a senion.

3 J.P. Gumbert, "The Tacketed Quire: An Exercise in Comparative Codicology", *Scriptorium* 65 (2011), 299–320, at 313.

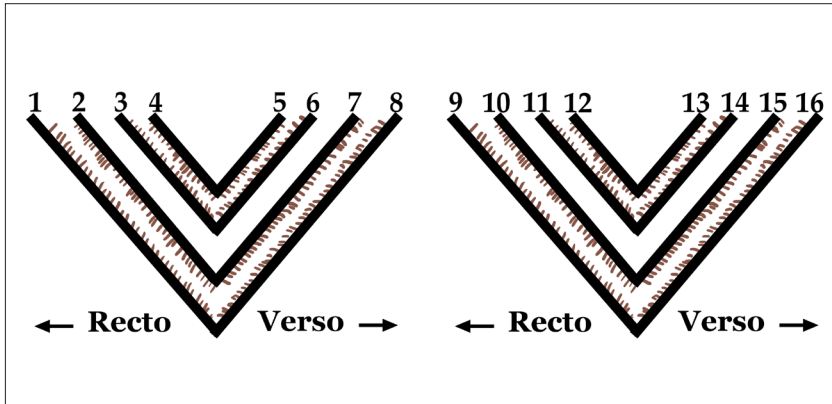


Figure 17: Gregory's Rule as applied to two consecutive gatherings. In this example, the odd-numbered leaves (f. 1, 3, 5, etc.) all have flesh side on the recto and hair side on the verso; the even-numbered leaves have hair on the recto and flesh on the verso.

Relating bifolia from the same codex to each other

The most effective means of grouping bifolia together is via textual elements, discussed below. Paratextual elements, such as foliation, running titles, and signatures, also have obvious importance. There are, however, a few physical indications that can help place, or rather exclude, certain arrangements.

"Gregory's Rule" specifies that parchment bifolia are, as a rule, arranged so that flesh side faces flesh side, and hair side faces hair side. For example, if a bifolium's hair side faces outwards, the next outer and next inner bifolia, if there are any, will have the hair side face inwards. If a codicological unit follows Gregory's Rule (which is usually the case for non-insular manuscripts after the ninth century), then all bifolia in the unit will be oriented in the same way: numbering the bifolia from the exterior to the interior, all odd-numbered bifolia will follow one arrangement of hair/flesh to inwards/outwards, and all even-numbered bifolia will have the opposite arrangement [Figure 17].⁴

⁴ Muzerelle, *Vocabulaire Codicologique*, illustration no. 37.

Locating the watermark (and countermark) on paper bifolia could also help arrange the pieces, provided the binding is consistent, that is, made of gatherings that use sheets of paper folded in the same way. For in-folio books, each bifolium will have the watermark on the same leaf and a countermark on the other, and therefore the orientation of each bifolium should be clear. For in-quarto, a bifolium with a watermark in the fold will alternate with one holding the countermark.⁵

Sewing stations and holes for endbands can also be used to situate bifolia. A given codex has one set of sewing supports, and thus all bifolia will have the same number of holes (sewing stations) in the same locations along the fold. But bifolia from the same gathering will have the sewing stations in precisely the same place, while those from other folia may exhibit slight variations.⁶ Nevertheless, re-use post-fragmentation may cause uneven changes to the parchment, so care should be used.

Reconstruction

As the preceding discussion shows, manuscript fragments can provide ample information on the original whole whence it came, even without considering the intellectual content. When the written text is taken into account, however, we can produce compelling reconstructions of the original. The principle is not unlike that used by an archaeologist in reconstructing a temple from a single broken column base; that base can be extrapolated into a whole column, and that column into a structure. Such a reconstruction is normative; contextualization can only with difficulty indicate the unique variations of the original.

5 See on this Muzerelle, *Vocabulaire Codicologique*, illustrations no. 40–45.

6 Gumbert, “The Tacketed Quire”, 299–307, observes that gatherings of Western manuscripts, particularly through the twelfth century, were often assembled prior to being bound into codices; they were tied together at the top and the bottom with what he calls “tackets”, pieces of thread or parchment; holes for the tackets can be found in the fold as well, and the spacing between the holes varies considerably from bifolium to bifolium. Such holes should not be mistaken for sewing stations.

In archeology, discussion has centered on the suitability of the term ‘reconstruction’: two centuries of ‘reconstructions’ seem more rooted in the assumptions, biases, and distortions of contemporary scholars than in the historic reality to be reconstituted.⁷ Given that even the best work relies on an imperfect dataset, some have proposed instead that the term ‘model’ replace that of ‘reconstruction’.⁸

Such an extreme seems semantically misplaced, likely only to encourage phraseological bloat such as “simulations of hypothetical spatiotemporal 4D reconstructions”,⁹ safely isolating any scholarly work from the past, through reconstruction couched in a hypothesis, itself merely a simulation of the real. To the contrary, the term ‘reconstruction’ seems perfected suited to its task. Since even the most ‘faithful’ reconstruction only captures some aspect of the original, the term ‘reconstruction’ contains within it both the idea of the original and a negation of originality. A reconstruction evokes a lost whole in producing a new reality, and the same vestiges can give rise to multiple, incompatible reconstructions. Conceptually, those who would replace ‘reconstruction’ with ‘model’ have a point: for a reconstruction to have scholarly rigor, it must document the

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- 7 Z. Bahrani, “History in reverse: Archaeological illustration and the invention of Assyria”, in *Historiography in the Cuneiform World: Proceedings of the XLV Rencontre assyriologique internationale*, ed. T. Abusch, P.-A. Beaulieu, J. Huehnergard, P. Machinist, P. Steinkeller, and C. Noyes, Bethesda, MD, 2001, 15–28, at 17: “Such reconstructions are fantasies that tell us more about the period.”
 - 8 J.T. Clark, “The Fallacy of Reconstruction”, in *Cyber-Archaeology* (British Archaeological Reports International Series 2177), ed. M. Forte, Oxford 2010, 63–73; at 63: “[A]rcheologists may say they have created a ‘reconstruction’ of some facet of the past, but in fact they have not, and with few exceptions cannot, ‘reconstruct’ the past; one can only construct models or simulations of the past” (his emphasis). Clark builds on Walter Taylor’s 1948 criticism of the term ‘reconstruction’ and reiterates the need to use ‘model’ instead, since (p. 68): “By definition, models are not the real thing; they are simplifications. As simplifications, something is left out, and the models are thereby always false.”
 - 9 This hyperextended cautionary deflationary overqualification comes from the boldly-named Time Machine Organization (“About Us”, <https://www.timemachine.eu/about-us/>). It undoubtedly reflects the strain of maintaining a semblance of scholarly rigor while providing hyperbole in service to the requirements of Brussels-based granting agencies, resulting in this rhetorical phenomenon, which one might call a “Belgian Waffle”.

relationship between the reconstructed whole and the surviving parts, physical or conceptual, regardless of whether we call the result a ‘reconstruction’ or a ‘model’. Guidelines and principles for visual reconstructions of the past exist.¹⁰ Although they focus on archaeological reconstructions, they are generally applicable to digital synecdochics, including the reconstructions discussed here.

When a fragment contains a text that exists in other witnesses, we can combine the information about the text with the physical and paratextual information from the fragment to rebuild a page, leaf, bifolium, and even the entire expression of that text on the original manuscript. The method followed consists in measuring the surviving part against the prior whole, understood as consisting in the text as witnessed in other sources, and using that proportion to calculate the layout and arrangement of the whole. Although such a method is hardly new – papyrologists, for example, have been using it for centuries – I attempted to validate its results and document its accuracy by means of a simple experiment.

Reconstructing the Leaf: Methodology

For reconstructing elements from a leaf, I wrote a methodology and assembled a test using pseudo-fragments, that is, two-sided virtual cuttings from scientific photographs of surviving whole manuscripts published on the website e-codices (<https://e-codices.ch>). Veronika Drescher and I then subjected a handful of volunteers to the test, and tabulated the results, without personally identifying information; the test documents and the results are available as research data associated with this article; the presentation of method here summarizes the content of those documents.

10 *The London Charter for the Computer-based Visualisation of Cultural Heritage*, v. 2.1, 7 February 2009, at https://londoncharter.org/fileadmin/templates/main/docs/london_charter_2_1_en.pdf; International Council on Monuments and Sites, *Principles of Seville: International Principles of Virtual Archaeology*, ratified 2017, <https://icomos.es/wp-content/uploads/2020/06/Seville-Principles-IN-ES-FR.pdf>.

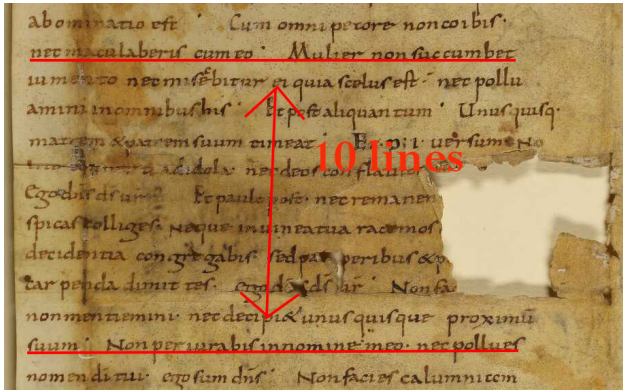


Figure 18:
[F-od7u] Leipzig,
Universitätsbibliothek Leipzig,
Fragm. lat. 169a,
with overlaid
instructions
showing how
to measure ten
lines.

For each of the five fragments, the subjects were provided with an edition (of varying quality) of the source, and asked to provide:

1. The height of each line (in mm)
2. The width of each column in the original manuscript
3. The number of lines per page in the original
4. The height of the text block in the original
5. The number of columns in the original
6. The width of the text block in the original

In this discussion, “text block” refers to the body of the text, the written area in the center of each page, composed of one or more columns.

Measuring the line height

The technique for measuring line height recommended on the test is that advocated by J.P. Gumbert.¹¹ On a fragment, locate ten whole lines, or as many as possible, measure from baseline to baseline [Figure 18]. Avoid using the first line on the page for measurement, since in some hands (especially documentary hands) it can have an exaggerated height. Divide the results by ten (or by however many lines there are). Report the results to the tenth of a millimeter.

A practical example will illustrate this step, and the following ones. [F-nxmr] Wien, Österreichische Nationalbibliothek, Fragm. 210a [Figure 19], is a small ninth-century fragment from

¹¹ J.P. Gumbert, *IIMM: Illustrated Inventory of Medieval Manuscripts in Latin Script in the Netherlands*, Hilversum 2009.

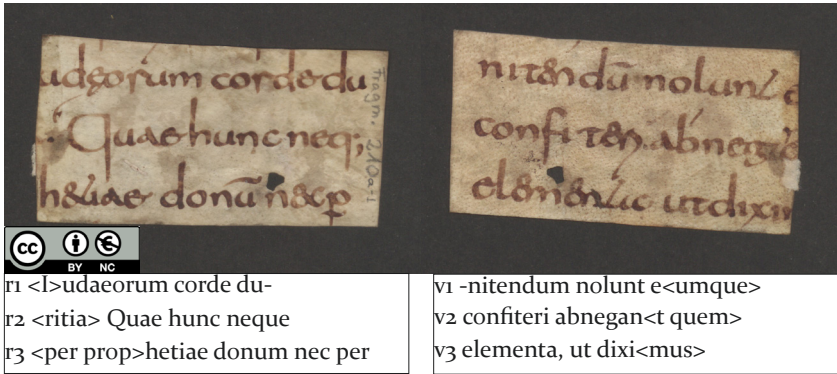


Figure 19: [E-nxmr] Wien, Österreichische Nationalbibliothek, Fraggm. 210a, 1r, 1v, with transcription. Angle brackets (<>) indicate text interpolated from the *Patrologia Latina* edition.

Gregory the Great, *Homiliae in Evangelia*, Homilia x. The fragment was digitized and published as part of the project “The Medieval Fragments of the Abbey of Mondsee” funded by the Austrian Academy of Sciences Go!Digital 2.0 program.¹² It was published on *Fragmentarium* with a reference image containing a ruler. Using photogrammetry from this reference image (see the Appendix below), we can determine a resolution of 23.68 pixels per millimeter (=601.5 DPI). We can measure two lines from baseline to baseline; the measurement is 520 pixels, which divided by 23.68 produces 22.0 mm, or a line height of 11.0 mm.

Determining the width of a partial column

If a column is complete, a measurement can be given. If it is only partial, the edition must be used; Word processing software (such as Microsoft Word or LibreOffice Writer) provide word and character counts for selections of text (ideally, after removing all punctuation and paratext). For each line, determine the number of characters (with or without spaces, according to the manuscript) visible (from the fragment) and (from the edition) the total number of characters

12 Project description at <https://fragmentarium.ms/case-studies/case-study-8>; I. Dobcheva, “Reading Monastic History in Bookbinding Waste. Collecting, digitizing, and interpreting fragments from Mondsee Abbey”, *Fragmentology* 2 (2019), 35–63.

on the line. If the width of each visible line is the same, multiply the width of visible lines by the total number of characters and divide by the number of visible characters. The result will be an average width. With larger lines, words may be used.

$$\text{original line width} = \text{visible line width} \times \left(\frac{\text{total characters}}{\text{visible characters}} \right)$$

Returning to the example, on the fragment of Gregory the Great, the text matches that in the Patrologia Latina Edition, scanned and available online (punctuation removed for measurement, corresponding text in the fragments indicated in bold):

Judaeorum corde duritia quae hunc nec per prophetiae donum **nec per** miracula agnovit Omnia quippe elementa auctorem suum venisse testata sunt Ut enim de eis quiddam usu humano loquar Deum hunc celi esse cognoverunt quia protinus stellam miserunt Mare cognovit quia sub plantis ejus se calcabile praebuit Terra cognovit quia eo moriente contremuit Sol cognovit quia lucis suae radios abscondit Saxa et parietes cognoverunt quia tempore mortis ejus scissa sunt Infernus agnovit quia hos quos tenebat mortuos reddidit Et tamen hunc quem Dominum omnia insensibilia elementa senserunt adhuc infidelium Judaeorum corda Deum esse minime cognoscunt et duriora saxis scindi ad poenitendum nolunt eumque confiteri abnegant quem elementa ut diximus¹³

Each line has between one and a half and three and a half words per line, and as such, using words per line is too coarse a measure to be useful. Characters per line, however, are more promising. On the recto, there are two full lines (from the same horizontal point in the column to the same point on the line before) that can be used, either from *udaeroum* to *proph*, or from *ritia* to *nec per*. Since we can see the right edge of the column, we know that (r2–r3) *ritia* to *nec per* corresponds to manuscript lines, and pick that. The two lines cover 40 characters (without spaces) in the edition. Of these, 31 are visible. Note that the *neque* on the second line is presented as a *nec* in the edition; since we are measuring the characters in the edition that correspond to those visible, we count the *que* as the single charat

¹³ Gregorius Magnus, *Homilia x in Evangelia*, *Patrologia Latina*, ed. Migne, v. 76, col. 111A–B.

On the verso, we repeat the measurement with the two lines (v1–v2), *nitendum nolunt eumque confiteri abnegant quem*, 41 characters, of which 31 are visible. In total, we have 81 characters in the passage in the edition, and 59 visible characters and spaces correspond to those on the fragment. We then measure the visible width of the line; here, the portion of each line on the fragment is 59 mm wide.

Using the formula above,

$$\text{original line width} = 59 \text{ mm} \times \left(\frac{81 \text{ total characters}}{59 \text{ visible characters}} \right) = 81 \text{ mm}$$

Therefore, we estimate original column width at 81 mm. The average number of characters per line is 20.25.

Determining the number of lines per page

A similar method of extrapolation can be used to arrive at an estimate how many lines per page there were. In effect, calculate how many characters in the edition corresponds to a column of text in the fragment, and divide by the average number of characters per line. In particularly compact manuscripts, words may be used instead of characters.

The number of lines per page usually equals the number of lines per column. If a fragment has visible parts of two columns, the number of lines per column can be estimated by using the proportion of visible words (or characters) to the total words (or characters) per column. More precisely, the words or characters being measured are not those on the fragment, but those corresponding to the fragment in the edition.¹⁴ If a fragment has only one column visible and there is text on both sides, the number of lines per page can be measured from a line of text on one side through the line just above it on the other side.

On the fragment, choose a side and column where the beginning and end of the text can be found in the corresponding source. Using

¹⁴ The assumption underlying this method is that the text relates consistently to the edition, and therefore, the comparanda are parts of the edition that match the parts of the text attested by the fragment, and those that match the parts not preserved.

the edition, count the total missing words or characters between the two columns, or between one side of the fragment and the other. In the example here, we select our column from r2 (-ritia) through the end of v1, counting the *eumque*, but not *confiteri*. In the edition, the text covered by this manuscript column has 575 characters.

Divide the number of words per column by the number of words per line to get the estimated number of lines per page:

$$\text{lines per column} = \frac{\text{words or characters per column}}{\text{words or characters per line}}$$

In the example we are using, 575 characters in a column divided by 20.25 characters per line is 28.4 lines per column, so we estimate between 28 and 29 lines per column.

If the fragment is from a two-column manuscript, and only one line is visible, then the measurement will either be from outer column to outer column (rb–va), or from inner column to inner column (ra–vb); in the latter case, the result will be lines per three columns, or three times the number of lines per page. This difference can be detected, as the height of the text block will be disproportionately high compared to the width.

Estimating the height of text block

Multiply the estimated lines per column by the line height to get the estimated height of the column (or three) or text block.

$$\text{height of text block} = \text{lines per column} \times \text{line height}$$

In the case of the fragment being used as an example, we calculated 28–29 lines per column. At 11.0 mm line height, that puts a column at 308–319 mm, slightly more than the height of an A4 page (297 mm).

Calculating the number of columns

Many fragments have one, two, or three columns visible on a page. When the number of columns is not obvious, however, the calculations made above can provide some evidence. Generally, a written area is taller than it is wide (some exceptions can be made

for heavily glossed texts). If it is more than twice as tall as it is wide, however, it is likely a two-column leaf, and the text comes from the outside column (rb–va). If the calculation of the height is more than six times taller than the width, then the leaf likely had two columns, and the columns measured are the inside columns (ra–va).

In the example given here, with dimensions estimated at 308–319 × 81 mm, the written area proportions correspond to that of a single, outside column. We are looking at a two-column leaf, and the fragment comes from the right column of the recto and the left column of the verso. To calculate the written area, double the width and add some intercolumnar space: the written area of the original leaf measured around 308–319 × 175–180 mm.

Caveats

The test instructions given to the volunteers also included some observations on the shortcomings of the method:

A copy with textual omissions (e.g., *homoioteleuta*) will be smaller than estimated. Titles, initials, illuminations, and so on can also skew the results. Two manuscript columns do not necessarily have the same width. A scribe can vary the density of the script. For example, a scribe can radically abbreviate or expand the script to align textual divisions with column breaks. Many scribes, especially note-takers, have a decidedly more compact script at the beginning of a session than at the end. Finally, what appear to be two columns on the same page may be the inside of a bifolium.

As the discussion and the criticism below show, many of these phenomena occurred, and their effect on the test results can be assessed, at least in part.

Pseudo-Fragments

The method above was illustrated on the instructions (and here) using a genuine fragment. For the experiment, virtual fragments were created from images of individual leaves of five manuscripts published on e-codices, selected to represent different types of texts produced in different periods, with varying layouts. This way, the test results could be compared against the actual manuscript leaves.

The images of these leaves were produced in accordance with e-codices' Reproduction Guidelines. While these guidelines have not been published, versions in German, French, and Italian have been used by the e-codices photographers since the project's inception, and include the requirement that all photographs of a given MS be taken under the same conditions, including lighting and distance from lens to surface, and the requirement that an image be taken with a ruler on a page. The suitability of the images was confirmed by selecting different images from the same manuscript and comparing the distance in pixels of comparable elements, such as, in the case of the third fragment discussed below, the distance between the chain lines on the paper.

The pages were then measured using simple photogrammetry (below, Appendix), noting the width and height of the columns. The lines per page were counted and recorded as well. This information was combined with that from the description; when reading the results below, should be noted that the description information does not always match precisely the measurements taken on the photographs. In image editing software, the recto and verso of each leaf were copied as layers on the same canvas, one side was mirrored horizontally, and the two sides were aligned. Then, a rectangular section was cut out, representing the front and back (mirrored) of the original leaf. The two sides of the pseudo-fragment were scaled to match the others, and all five pseudo-fragments were arranged and aligned on two canvases, one for the front side and one for the back side. The back side was then un-mirrored, and the two images were placed into a PDF document, designed to be printed front and back on A4 paper, at 1:1 scale [Figure 20].

Finally, an online edition of the text was identified (and the quality intentionally varied from early print to modern critical edition), the appropriate passage was located, and assembled into a PDF that was included with the test materials. The full test packet has been made available on the *Fragmentology* article page as additional material.

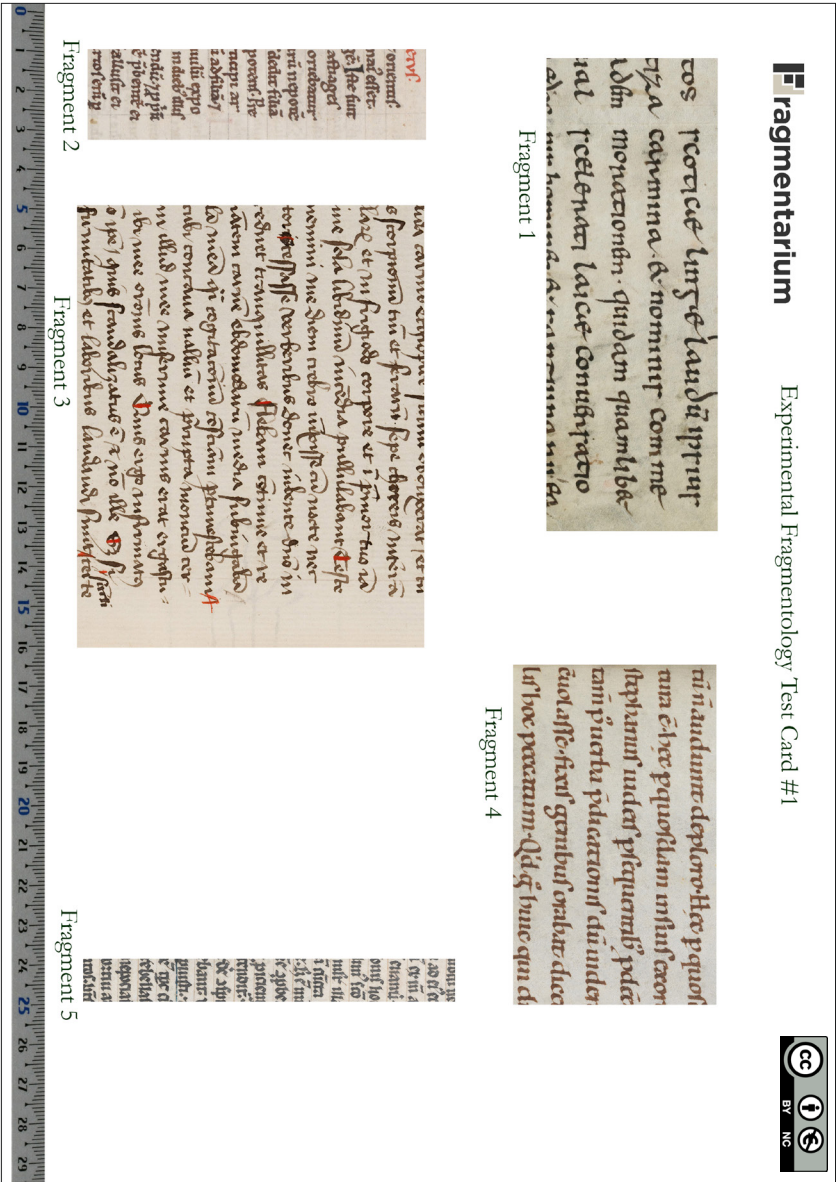


Figure 20: Front of test card, with the five fragments. Images from e-codices (Donor Volumes 1–5)

Donor Volumes of the Pseudo-Fragments

1. Schaffhausen, Stadtbibliothek, Gen. 1, pp. 9–10: Adamnanus de Iona, *Vita Columbae* (VII–VIII s.)

<https://www.e-codices.ch/en/list/one/sbs/0001>

Dimension information from the description: Written Area:

25 × 20 cm, Two columns, 28 lines¹⁵

Columns: 2

Column height (as measured): 246 mm

Column width (as measured): 88 mm outer, 94 mm inner

Lines per page: 28

Edition: *Life of St. Columba, founder of Hy, written by Adamnan*, ed. W. Reeves, Dublin 1857 (<https://ia801402.us.archive.org/28/items/lifeofsaintcolumooadamuoft/lifeofsaintcolumooadamuoft.pdf>), 113–114.

2. St. Gallen, Stiftsbibliothek, Cod. Sang. 620, pp. 229–230: Petrus Comestor, *Historia Scholastica* (XIII s.)

<https://www.e-codices.ch/en/list/one/csg/o620>

Dimension information from the description: Two unequal columns 30/31 × 7/8 and 9/10 cm, 60–63 lines, with the second column empty¹⁶

Columns: 1 written column (1 laid out)

Column height (as measured): 314 mm

Column (=text block) width (as measured): 121 mm¹⁷

Lines per page: 63

¹⁵ R. Gamper and S. Marti, *Katalog der mittelalterlichen Handschriften der Stadtbibliothek Schaffhausen*, Dietikon-Zürich 1998, 67–68. Additions by Rudolf Gamper 2008.

¹⁶ B.M. von Scarpatetti, *Die Handschriften der Stiftsbibliothek St. Gallen, Bd. 1: Abt. IV: Codices 547–669: Hagiographica, Historica, Geographica, 8.–18. Jahrhundert*, Wiesbaden 2003, 215–218: “Zweispaltig; für die Lagen Nr. I–XVIII speziell für den Text konzipierte Einrichtung mit zwei Kolonnen ungleichen Ausmasses 30/31 x 7/8 resp. 9/10, 60–63 Zeilen, Linierung gemischt Falzbein und Bleistift. Die rechte Spalte ist durchgehend leer; am linken schmalen Rand figurieren passim Glossen von der Haupthand; für Zusätze und Glossen ist auch im Haupttext vielfach Platz ausgespart.”

¹⁷ The difference in width measured here compared to that in the description is due to the fact that the description gives the column width for the first thirteen gatherings; in most of the gatherings, the margins are ample, to accommodate annotations contemporary with the copying of the manuscript. In this section,

Edition: Petrus Comestor, *Historia Scholastica*, Lyon 1543, section on Daniel (https://la.wikisource.org/wiki/Historia_Scholastica/Daniel).

3. Basel, Universitätsbibliothek, A VIII 6, f. 4r-v: Ps.-Eusebius Cremonensis, *Epistula de morte Hieronymi ad Damasum episcopum Portuensem* (XV s.)

<https://www.e-codices.ch/en/list/one/ubb/A-VIII-0006>

Dimension information from the description: Written area 16 × 9 cm, 24–28 lines¹⁸

Columns: 1

Column height (as measured): 165 mm

Column (=text block) width (as measured): 98mm

Lines per page: 27

Edition: *Patrologia Latina* 22, cols. 239–282, at cols. 241–242 (<https://archive.org/details/patrologiaecursi65unkngoog>).

4. Schaffhausen, Stadtbibliothek, Ministerialbibliothek, Min. 53, f. 127r-v: Gregorius I. papa, *Moralia in Job*, libri 17–22 (XI s.)

<https://e-codices.ch/en/list/one/sbs/min0053>

Dimension information from the description: Written area 20.5–21 × 14.4–15.5 cm, 25 lines¹⁹

Columns: 1

Column height (as measured): 210 mm

Column (=text block) width (as measured): 144 mm

Lines per page: 25

Edition: Gregorius Magnus, *Moralia in Iob*, ed. Adriaen (via Brepolis), l. 21.

5. Fribourg/Freiburg, Bibliothèque cantonale et universitaire/Kantons- und Universitätsbibliothek, Ms. L 34, f. 13r-v: Jacobus de Voragine: *Legenda Aurea* (XIV s.)

<https://www.e-codices.ch/en/list/one/bcuf/L0034>

there are no such annotations, and the single written column extends several cm towards the gutter.

¹⁸ University of Basel, *HAN Verbundkatalog Handschriften – Archive – Nachlässe*, 2013 (<https://swisscollections.ch/Record/99170513619805501>).

¹⁹ R. Gamper, G. Knoch-Mund, and M. Stähli, *Katalog der mittelalterlichen Handschriften der Ministerialbibliothek Schaffhausen*, Dietikon-Zürich 1994, 147.

Dimension information from the description: 16.5 × 11 cm, 34 lines on 2 columns, of 5–5.5 cm width, first ruled line not written
Columns: 2
Column height (as measured): 166 mm
Column width (as measured): 52 mm outer, 51 mm inner column.
Lines per page: 34
Edition: *Jacobi a Voragine Legenda aurea*, ed. Graesse, Leipzig 1846, 24–25 (<https://archive.org/details/jacobiavoragineooja-cogooog/>).

Results

Between 2018 and 2019, the test was taken completely or in part five times, by A) a team of BA students, B–C) two MA students, D) a doctoral candidate, and E) a postdoctoral researcher. The anonymized results, in no particular order, are presented in Table 1. For each field, the measurement obtained on the image of the whole leaf presented, followed by the estimates produced by the test-takers working with pseudo-fragments; evident errors are in bold.

Table 1: Test Results

Test 1: Schaffhausen, Stadtbibliothek, Gen. 1, pp. 9–10: Adamnanus de Iona, *Vita Columbae* (VII–VIII s.)

	as measured	estimates
Columns	2	2, 2, 2, 2, 2
Width of written area (mm)	2 × 88,94 (=182 mm)	190, 170, 190, 200, 196
Height of written area (mm)	246	246, 252, 240, 252, 312–333
Lines per page	28	28, 28, 28–30, 37

Test 2: St. Gallen, Stiftsbibliothek, Cod. Sang. 620, pp. 229–230: Petrus Comestor, *Historia Scholastica* (XIII s.)

	as measured	estimates
Columns	1	1, 2, 1, 1, 1
Width of written area (mm)	121	120, 160 , 112, 107, 117
Height of written area (mm)	314	180 , 200 , 290–300, 220 , 210–215
Lines per page	63	36–37 , 40 , 58–60, 60, 43

Test 3: Basel, Universitätsbibliothek, A VIII 6, f. 4r-v: Ps.-Eusebius Cremonensis, *Epistula de morte Hieronymi ad Damasum episcopum Portuensem* (XV s.)

	as measured	estimates
Columns	1	1, 1, 1, 1, 1
Width of written area (mm)	106	105, 108, 100, 110, 105
Height of written area (mm)	171	170, 221, 240, 186, 158-168
Lines per page	27	27, 28, 40, 29, 25

Test 4: Schaffhausen, Stadtbibliothek, Ministerialbibliothek, Min. 53, f. 127r-v: Gregorius I. papa, *Moralia in Job*, libri 17-22 (XI s.)

	as measured	estimates
Columns	1	1,1,1,1
Width of written area (mm)	144	145, 146, 165, 142
Height of written area (mm)	210	176, 190-200, 208, 202-206
Lines per page	25	22, 21-22, 24, 24

Test 5: Fribourg/Freiburg, Bibliothèque cantonale et universitaire/Kantons- und Universitätsbibliothek, Ms. L 34, f. 13r-v: Jacobus de Voragine: *Legenda Aurea* (XIV s.)

	as measured	estimates
Columns	2	2, 1, 2, 2
Width of written area (mm)	52, 51	105, 56, 130, 110
Height of written area (mm)	166	163, 176, 175, 162-163
Lines per page	34	34, 35, 35, 34

Discussion

The participants had not practiced the technique previously, and the number of gross errors indicated shows the need to document methods and double-check results.

One problem that arose with the results is due to a shortcoming in the test instructions: the instructions asked the test takers to estimate both the width of the columns and the width of the text block, but no information was provided to establish the latter for manuscripts with more than one column. Yet, on the two pseudo-fragments with two columns (#1 and #5), the results returned

were for the entire written area; it is not clear whether they include estimates of the gap between columns.

Resolving the column-width problem by dividing the results for #1 and #5 (of the three who specified two columns) in half, the results for the width are very good: 20 of 23 estimates fall within 10 mm of the measured width; indeed, when the seventh/eighth-century manuscript (#1) is excluded, 15 of 19 fall within 5 mm, which is the accuracy used in the descriptions of those manuscripts.

Except for #2, the method proved quite effective for calculating lines per page. In the case of fragment #2, the edition used was a 1543 print, and the text, the *Historia Scholastica*, is notorious for having been continually modified by its users after its appearance.²⁰ The manuscript contains a significant passage that does not appear in the print edition, and using the edition for the extrapolative method underestimates the content by about one third. This result underscores the need for a reliable edition that reflects the text. For the other four cases, the estimations of lines per column were either exact (5 cases), within 2 lines (8 cases), within 3–4 lines (2 cases), or significantly off to suggest error (2 cases). The estimates for Fragment #4 were consistently low, and this is because the text not covered by the fragment included the explicit/incipit for books 20/21 [Figure 21].

According to this method, the height of the written page depends on the calculation of lines per page and the measurement of the individual line height, and the results reflect that. Excluding #2, 12 of 17 measurements are within 10 mm of the actual height of the written area; of the remaining measurements, 2 are within 20 mm, 2 made an error in calculating lines per page, and a third appears to have erred in calculating line height.

This small test shows that the extrapolative method can, based on a fragment of a leaf, produce remarkably accurate estimates of the dimensions of the written area and lines per page of the original manuscript. Variation in the manuscript source text with respect to

20 M. Clark, *The Making of the Historia Scholastica, 1150–1200*, Turnhout 2016, 254: “This was [...] a living, prototypically scholastic text, which changed constantly at the hands of the *magistri* who were at the same time teaching with it and adding to it.”

narrauerat nisi iam sue cathare et organi cantus flebat.
 Atq. ad luctu uersa fuerant quia eos quos predicando nate-
 rat amando flebat. Qd nimiru cotidie sca ecclesia agere n
 desistit que predicationis uerbu pene ubiq. conticuisse u
 conspiciat. Alii nanq. loqui dissimulant alii recta audire
 continent. Sed etor mens du tacere cantu predicationis
 conspiciat. gemitus acta ad fletus redit. Dicit q uersa e
 in luctu cathara mea et organu mai in uoce fletu. q de
 etis quisq. quo se predicationis uox siluit. damna eccle gra-
 uis plangit. Huc usq. beat iob describit mala que pri-
 us hoc u ex loco incipit narrare subtilius bona que fecit.
 Sed doloris uertu hy storica atq. allegorica expositione
 transcurram. uirtutu uero opu ex magna parte uicta soli
 hy storie textu tenem. ne sibi ad indaganda mysteria tra-
 hini ueritate fortasse opus uacuare uideamur.

EXPLICIT LIBER .XX. INCIPIT .XX.
INTELLECTUS SACRI ELOGII PRIMVS
In textu et mysteriu tanta e libratione pensandus ut um-
 usq. partis lanceo moderata bene neq. nimie discussionis
 pondus deprimat neq. rursus corpor uicinis uacui relinq.
 Multo quippe essententia tanta allegorari ceptione sum-
 grauide ut quisquis eas ad sola tenere hy storica nitit. can-
 noticia psua incant. prauet. Nonnulli uero ita extenonib
 pceptis inferunt ut si quis eas subtilius penetrare deside-
 rat intant qdem nil inueniat. s. hoc sibi etia qd fori locum

Figure 21: Schaffhausen, Stadtbibliothek, Ministerialbibliothek, Min. 53, f. 127v (e-codices), with pseudo-fragment section highlighted



the edited text and elements such as initials, incipits and explicits, can influence the results; if the fragment allows for multiple extrapolations (e.g., a strip cut from a bifolium), this effect can even be used to determine the content of the un-reported text. The exact margin of error depends on the type of text, method of production, and time and place of production, but in the cases here, a skilled measurement can produce results with an accuracy of 10 mm in height, 5 mm in width, and 2 lines per page.

Criticism

This experiment arose informally, and its formulation and execution have a few shortcomings that need to be noted. The test specified two different methods of measuring text, one based on characters, the other based on words. It also provided for measurements in two media: digital and physical. This ambiguity produced an unknown variation in the results. In the future, a simpler test should specify a single method and be given to a larger number of participants.

The ambiguity of the difference between measuring the width of a column and that of a written page provided for less than desirable results on the width of a page. The complete lack of guidance on how to estimate intercolumnar space needs to be addressed. To estimate intercolumnar space, place the fragment in the context of contemporary manuscripts of the same genre and ideally from the same region.

Let us return to the example used for the instructions, [F-nxmr] the fragment from a ninth-century Mondsee manuscript of Gregory the Great. The Austrian National Library has published online Cod. 732, a Mondsee manuscript also containing a ninth-century copy of texts of Gregory the Great in two columns [Figure 22].²¹

21 On ÖNB Cod. 732, see: <http://data.onb.ac.at/rec/AC13956701>; Description in H.J. Hermann, *Die deutschen romanischen Handschriften (Beschreibendes Verzeichnis der illuminierten Handschriften in Österreich. 11. Band: Die illuminierten Handschriften und Inkunabeln der Nationalbibliothek in Wien, 11. Teil: Die deutschen romanischen Handschriften*, Leipzig 1926, 323–324; Lowe, *Codices Latini Antiquiores*, no. 1487. The manuscript was located using [manuscripta.at](#) and searching for manuscripts from a dating from 700 to 1000 and with Mondsee listed as the *Lokalisierung*.

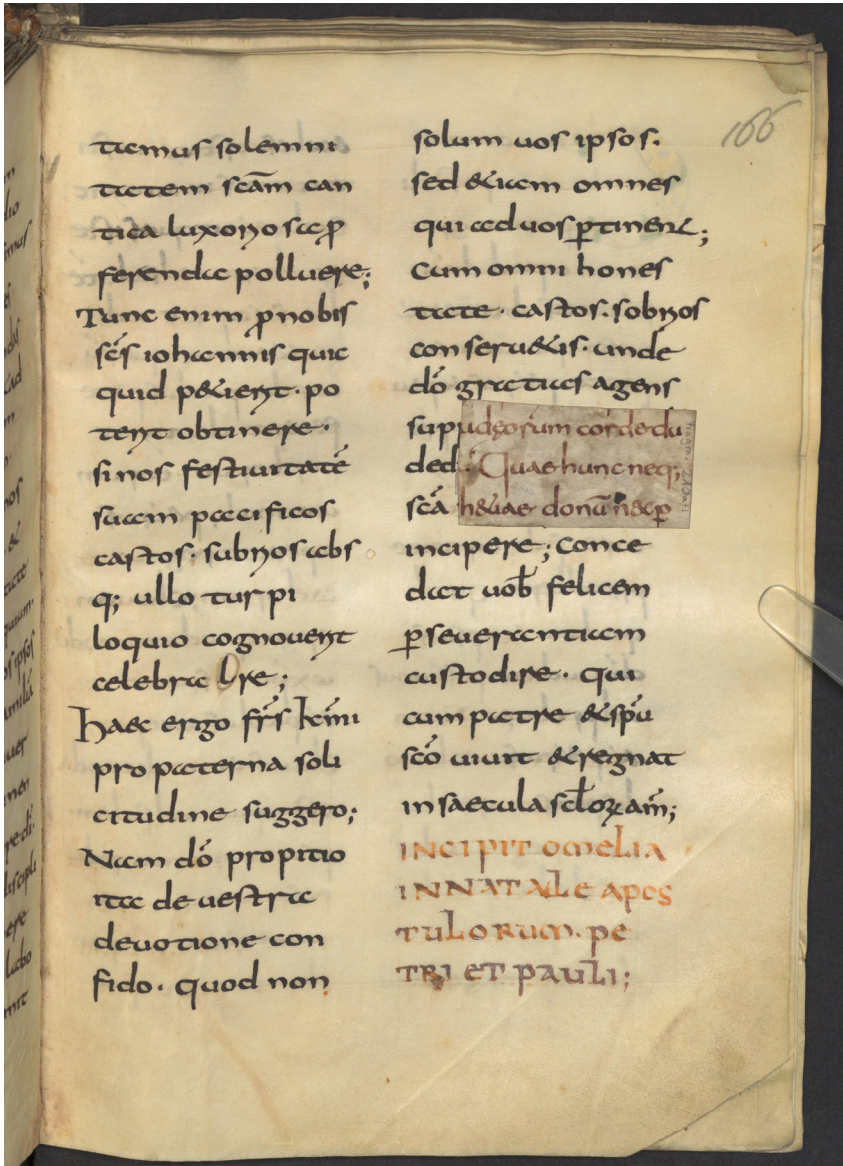


Figure 22: Wien, ÖNB Cod. 732, f. 166r, with
 Fragg. 210a [F-nxmr] digitally superimposed



The description provides the dimensions 300 × 210 mm for the page. The digitization provides no reference image for the codex, and the image is taken slightly out of vertical (note the head-edge is visible), rendering photogrammetry approximate. Nevertheless, a quick measurement of the page compared against the given dimensions (300 × 210 mm) provides 23.66 px/mm in the vertical and 23.48 px/mm in the horizontal. Since 600 DPI is 23.62 px/mm, these images were almost certainly taken with a 600 DPI scanner, and this value (23.62 px/mm) can be used, recognizing some loss in precision. The fragment, as we saw above, was also scanned at practically 600 DPI; it is likely that the same equipment was used. In any case, the fragment and the leaf are imaged to scale, and the fragment can be digitally superimposed.

Measured via simple photogrammetry (see Appendix), the written area is roughly 236 × 165 mm, with two columns that at one point measure 73 (inside) and 81 mm (outside) wide, with an intercolumnal space of 11 mm.

Table 2: Comparison of layout between Wien, ÖNB Cod. 732 and Fragm. 210 A

Dimension	Cod. 732, f. 166r	Fragm. 210 A
Column Width	73–81 mm	81 mm
Line height	11.4 mm	11.0 mm
Lines per page	21	28–29

A comparison of the primary measurements shows that the reconstruction is not out of scale, although, comparatively, the lines per page (and thus column height) seems a little elevated. An intercolumnar space of 10–15 mm would be expected. The nature of ninth-century manuscript production at Mondsee, as elsewhere in Europe, features considerable variation in the trailing (right) edge of each line: on the outside (b) column, the shortest non-rubric line is 67 mm wide and longest is 81 mm; the inner column (a) is also, on the average, narrower than the outer one. If the fragment were to come from one of the shorter lines, the calculation of characters per line would be relatively low, and the number of lines required per column would be higher. In other words, a +/- 5% variation

in column width, as seen in ÖNB 732, would, when extrapolating, translate into a $\pm 5\%$ inverse variation in column height.

The extrapolative method to calculate the height of the written area can induce a slight overestimation, as line height is measured from baseline to baseline, but the top line of a page, at least before the thirteenth century, is not bounded by a line. In effect, the whitespace above the first line is included in the extrapolation.

Taking into account the variation from line to line, the errors in extrapolating documented above, and a comparison to a contemporary manuscript, we can arrive at an estimate of the original dimensions of the example fragment:

Lines per page: $28-29 = \pm 5\% = 27-31$

Column Height: $27-31 \text{ lines} \times 11.0 \text{ mm/line}$, subtract 3 mm for the top line, and rounded to 5 mm = $295-340 \text{ mm}$

Outer column width: $81 \text{ mm} \pm 5\%$, rounded to 5 mm = $75-85 \text{ mm}$

Intercolumnar gap: $10-15 \text{ mm}$

Inner column width: $75-90 \text{ mm}$

Total width: $165-195 \text{ mm}$.

The original written area was approximately $295-340 \times 165-195 \text{ mm}$. A small piece of parchment allows us to obtain an idea of what the original leaf looked like.

In fact, we can validate this estimate. The fragment being measured here (210 R) is one of several from the same original codex that have survived in the Austrian National Library.²² Some of the larger parts appear under the shelfmark Cod. ser. n. 2066 [F-jyai] [Figure 23]. Similar measurements and extrapolations on f. 3r-v, a more complete leaf that preserves the entire width of the written area and 22 lines of text, produces an estimate of 29 lines per page and of a written area ca. $307 \times 167 \text{ mm}$. Therefore, the estimate from a small piece produces results that are coherent with larger fragments of the same codex.

²² The reconstruction has yet to be published, but Ivana Dobcheva has made information available on her Github page: https://ivanadob.github.io/mondsee/desc_vr_f-jyai.html. I thank the anonymous referee for this indication.

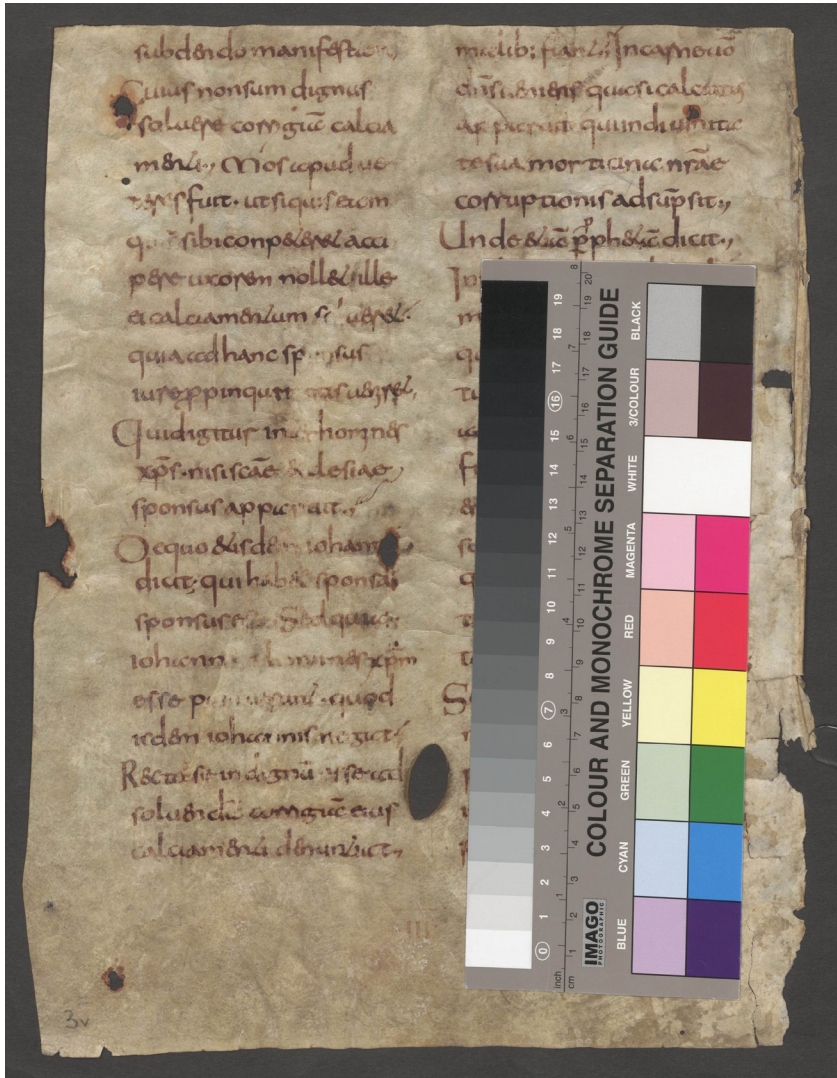


Figure 23: [E-jyai] Wien, ÖNB Cod. Ser. n. 2066, f. 3v with color control card



Summary of the Extrapolative Method

The test, its results, and contextual considerations lead to recommending a methodology for estimating the original written area from a now-fragmented codex:

1. Measure the width of the visible lines, to one-mm accuracy (visible line width).
2. Measure the line height to one-tenth mm accuracy (line height).
3. Locate a source for the fragment text; ideally, use the text from a critical edition.
4. Establish that the edition matches sufficiently the fragment text.
5. Determine the width of a line: count edition-characters per manuscript line (characters per line), and edition-characters corresponding to the visible part (visible characters).

$$\text{original line width} = \text{visible line width} \times \left(\frac{\text{characters per line}}{\text{visible characters}} \right)$$

6. Calculate the edition-characters per column (characters per column), or from the front to back of the fragment.
7. Calculate the number of lines per page.

$$\text{lines per page} = \frac{\text{characters per column}}{\text{characters per line}}$$

8. Determine the column height.

$$\text{column height} = \text{lines per page} \times \text{line height}$$

9. In the case of manuscripts with writing above the top line (generally before 1230),²³ measure the distance between the top of one line and the baseline above it, and subtract that value from column height.
10. Determine the number of columns according to visible information, and the ratio of Column Height to Column Width. In the case of a front-to-back measurement of inside columns of a two-column leaf (or middle columns of a three-column leaf), Lines per Page and Column Height will be three times too large; for the inside column of a three-column leaf, lines per page and column height should be divided by five.
11. Locate a comparison leaf similar to the one being measured in content, place and date of origin. Use that to estimate missing layout details, such as intercolumnar space.

²³ See, e.g., N.R. Ker, "From 'Above Top Line' to 'Below Top Line': A Change in Scribal Practice", *Celtica* 5 (1960), 13–16.

12. Estimate, on the basis of the comparison leaf, the precision. As a ball-park figure, use 5% for fragments produced in the tenth century and later, and 10% for earlier fragments with uneven line width.
13. When indicating the estimate, state the procedure used, the edition, and the comparison leaf.

The results of the test show the general reliability of its method, but that the suitability of any given edition cannot be taken for granted. Calculation errors occur with some frequency as well, and therefore, if the fragment and the time available allow, multiple estimates should be used.

Calculating Missing Leaves

A similar method can be used to calculate the distance between any two fragmentary leaves. Larger measurements reduce the need to strip out punctuation from digital texts, and permit words instead of characters, and even just the calculation of a correspondence of columns of texts between manuscript witnesses can produce good results. For example, [F-70dh] Brugge, Stads- en O.C.M.W. archief, reeks 538: Fragmenten van handschriften, nr. 34 [Figure 24, 25] (Henceforth, the “Bruges Fragment”), consists of two leaves of the Commentary on Book I of the *Sentences* by Peter of Tarantaise, OP (later Innocent V).²⁴ From the running titles, “D” (*distinctio*), on one side, and “v” (first leaf) or “vii” (second leaf) on the other, we can determine recto and verso: the verso has “D”, and the recto has the number. On both leaves, the recto is the hair side, and the verso is the flesh side. Therefore, these two leaves cannot have made a bifolium, since the recto of a bifolium’s prior leaf shares the same side (flesh or hair) as the verso of its posterior leaf. Moreover, as mentioned above, Gregory’s Rule specifies that bifolia are bound together so that hair side faces hair side and flesh side faces flesh side; thus there will be an odd number of leaves between the two fragments [Figure 17].

24 The Bruges Fragment was digitized as part of the *Comites Latentes: Hidden Manuscripts Revealed* project led by Godfried Croenen and focusing on fragments in Flemish collections: https://fragmentarium.ms/partner-projects/comites_latentes.

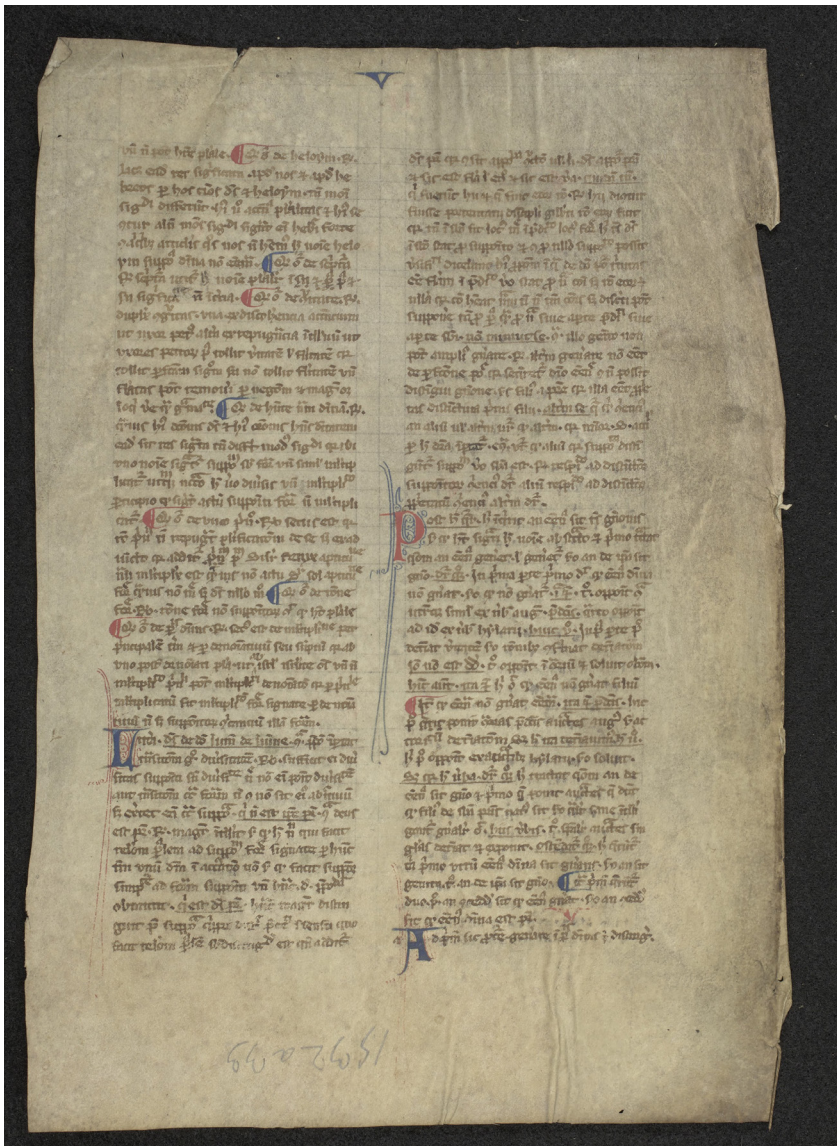


Figure 24: [F-70dh] Brugge, Stads- en O.C.M.W. archief, reeks 538: Fragmenten van handschriften, nr. 34, first leaf, recto

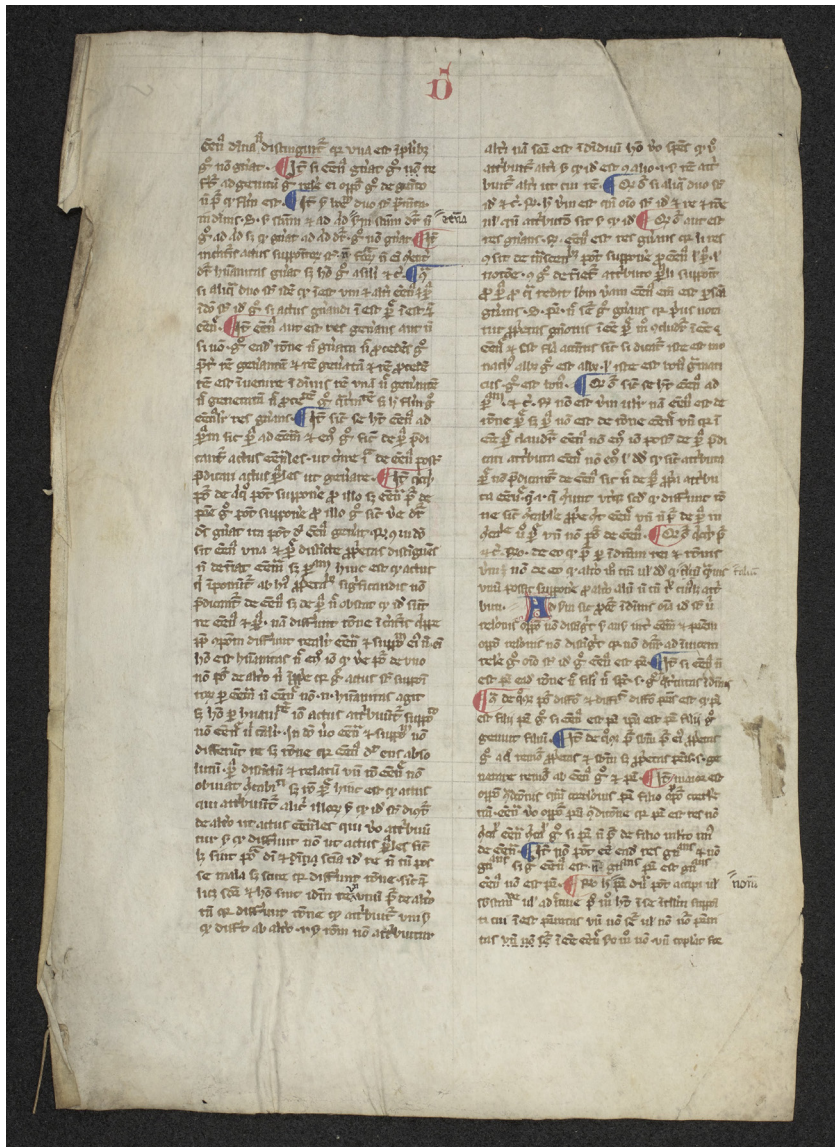


Figure 25: [F-70dh]Brugge, Stads- en O.C.M.W. archief, reeks 538: Fragmenten van handschriften, nr. 34, first leaf, verso

The Toulouse 1652 edition of Peter of Tarantaise's commentary on book I was reprinted by the Gregg Press in 1964; it was later scanned by Google, and Jeffrey Witt has encoded the machine transcription at LombardPress.org.²⁵ Assuming that the machine transcription errors and paratext will have a negligible effect on the overall word, it is therefore trivial to copy-paste the text into a document, and measure the words, which will be referred to as 'Witt Words' in what follows. The text on the first leaf runs from the end of d. 4, q. 4 to the middle of d. 5, q. 5; the second leaf starts near the beginning of d. 7, q. 1, and includes the first part of q. 2. To validate our data, we will use the witness in Paris, Bibliothèque nationale de France, latin 14556,²⁶ which has book I on ff. 11r–85r, and book II on ff. 86r–163v.

The Paris manuscript has 56 lines per page on two columns on the leaves corresponding to the Bruges fragment. The passage witnessed by the first leaf begins on f. 111ra, l. 35/56 (*unde non potest habere plurale*) and ends on f. 111vb, l. 9/56 (*unde copulat for[mam]*); the passage parallel to the second leaf begins on f. 13va, l. 53/56 (*prius est in potentia*) and ends on f. 141rb, l. 41/56 (*hoc vero in Deo non contingit*).

Table 3: Passages in and between the Bruges Fragment, expressed in terms of Witt Words and Paris Lines

Bruges Fragment	Witt Words	Paris Passage	Paris Lines
Leaf 1	1809	f. 111ra, l. 35 – f. 111vb, l. 9	142
Leaf 2	1959	f. 13va, l. 53 – f. 141rb, l. 41	152
Between 1 and 2	5725	f. 111vb, l. 10 – f. 13va, l. 52	434

On these calculations, one leaf of the fragment has, on average, 1884 Witt Words, and 147 Paris lines [Table 3]. We therefore divide the measurements of the missing text between Leaves 1 and 2 by these figures.

25 *Innocentii Quinti [...] In IV Libros Sententiarum Commentaria [...]*, Toulouse 1652, Repr. Gregg Press 1964 (https://www.google.com/books/edition/Innocentii_Quinti_pontificis_maximi_ex_o/qbo-AQAAMAAJ); Petrus de Tarantasia, *Commentarius in libros Sententiarum*, ed. J. Witt, <https://reader.lombardpress.org/text/pdt7y6>.

26 Digitization at: <https://gallica.bnf.fr/view3if/ga/ark:/12148/btv1b9o6664od/f30>.

$$\frac{5725 \text{ Witt Lines}}{1884 \text{ Witt Lines per leaf}} = 3.04 \text{ leaves}$$

$$\frac{434 \text{ Paris Lines}}{147 \text{ Paris Lines per leaf}} = 2.95 \text{ leaves}$$

Both methods of calculation come within 2% of three leaves. Therefore, we can conclude with confidence that there were exactly three leaves between Leaf 1 and Leaf 2. The text in question contains Scholastic theology, a genre known for its highly abbreviated manuscripts. The results show that, at least for this manuscript, the rate of abbreviation is quite consistent.

Reconstructing the Gathering/Codex

A bifolium can be situated within a quire by identifying the number of intermediate leaves. In some cases, the entire codex can be reconstructed in this way.²⁷ An example will demonstrate the viability of this approach.

The fragment [F-44mw] Leeds, University of Leeds Libraries, Special Collections, MS Ripon Cathedral Fragments/20 [Figure 26], is a bifolium from Brunetto Latini's *Trésor*, a thirteenth-century encyclopedia written in French. The fourteenth-century fragment was published on *Fragmentarium* as part of the UK Research and Innovation *Digital Explorations* Project at the University of Leeds.²⁸ In her description, Laura Albiero identifies the bifolium as having non-consecutive leaves, and containing passages found on pp. 33–34 and 52–55, respectively, of Chabaille's 1863 edition, and pp 36–38, pp. 50–51 of Carmody's 1948 critical edition, corresponding to book

²⁷ For an example of such a reconstruction, see W. Duba, "Fragments of Francesco d'Appignano's *Improbatio*", *Picenum Seraphicum* 36 (2022), 101–121, at 105–107 (https://riviste.unimc.it/index.php/pi_ser/article/view/3215), where a single-bifolium fragment is reunited with two sexternions that precede it, and its own gathering, a quinion, is reconstructed.

²⁸ *Digital Explorations: Opening the Medieval Manuscript Fragments from the Ripon Cathedral Library*, Dr N.K. Yavuz, Principal Investigator, Prof. E. Cayley, J. Double, R. Fitzgerald, Co-investigators, February–July 2023.



Figure 26: [F-44mw] Leeds University Library, Special Collections, MS Ripon Cathedral Fragments/20

Image Rights: <https://bit.ly/44BrxgX>

I, part 1.²⁹ In addition, the current edition of reference is that of Beltrami, Squillacioti, Torri, and Vatteroni; unlike Chabaille and Carmody, it is available only in print and not in digital form.³⁰ To determine the situation of the bifolium in the original gathering, and the constitution of the original codex, I counted the lines of text of the first 55 pages of Chabaille's edition, skipping the chapter titles, and marked where the bifolium's passages began and ended. I performed a similar operation using words and characters against

29 L. Albiero for *Fragmentarium*, Description of [F-44mw] Leeds, University of Leeds Libraries, Special Collections, MS Ripon Cathedral Fragments/20 (<https://fragmentarium.ms/description/F-44mw/6009>); *Li livres dou tresor par Brunetto Latini*, ed. P. Chabaille, Paris 1863; *Li Livres dou trésor de Brunetto Latini*, ed. F.J. Carmody, Berkeley 1948, text online at: <http://www.florin.ms/tresori.html>.

30 Brunetto Latini, *Tresor : testo a fronte*, ed. P.G. Beltrami, P. Squillacioti, P. Torri, and S. Vatteroni, Turin 2007.

an electronic copy of Carmody's text. For the sake of completeness, I digitized the beginning of the Beltrami et al. edition, using optical character recognition (in Adobe Acrobat) to produce a digital text, and compared the passages on the fragment to it as well. I then solved for the number of bifolia between the prior and posterior leaf of the Ripon Fragment, by indexing the leaves against lines from the Chabaille edition, and words and characters from both the Carmody edition and from the automated recognition of the Beltrami et al. edition (including the text of chapter titles, which are rendered in rubric in the manuscript) [Table 4].

Table 4: The Ripon *Trésor* Fragment measured against the Chabaille, Carmody, and Beltrami et al. editions

Ripon Fragment	Chabaille Lines	Carmody Words	Carmody Chars.	Beltrami Words	Beltrami Chars
Prior leaf	46	550	2,961	585	3152
Posterior leaf	48	595	3,105	617	3233
Total bifolium	94	1,145	6,066	1,202	6,385
Gap between leaves	371	4,706	24,724	4,846	25,720
Bifolia in gap (est.)	3.95	4.11	4.08	4.03	4.03

All measurement schemes produce results within three percent of exactly 4 bifolia; the hasty uncorrected scan of the latest critical edition produces results within one percent. Almost certainly, when bound in the original volume, the fragment here had four bifolia inside it. The total text covered from the beginning of the prior leaf to the end of the posterior leaf corresponds to ten leaves, and therefore we can estimate per leaf: 46.5 Chabaille Lines, 585 Carmody Words, 3,079 Carmody Characters, 605 Beltrami words and 3211 Beltrami characters.

These figures provide a consistent projection for the number of leaves from the incipit of the *Trésor* to the beginning of the fragment. From the beginning of edition to the beginning of the passage on the prior leaf, there are 679 Chabaille Lines, 8,132 Carmody Words, 43,524 Carmody Characters, 8,379 Beltrami words, and 45,123 Beltrami characters. If we divide these figures by the average amount

of text per leaf contained in the ten leaves between the beginning of the prior leaf and the end of the posterior leaf of the Ripon Fragment, we get: 14.4 leaves (from Chabaille Lines), 13.9 leaves (from Carmody Words), and 14.14 leaves (from Carmody Characters), 13.8 leaves (from Beltrami words), and 14.05 leaves (from Beltrami characters). In other words, if the prior text resembled the previous three major editions of the work, exactly fourteen leaves preceded the prior leaf of the fragment, assuming a complete original.

The information provided by the bifolium can also be used to support a hypothesis about the codex's original collation, assuming that this professionally-copied manuscript was originally bound in gatherings of the same size. Since, on the surviving bifolium, the gap between prior and posterior leaf corresponds to four bifolia, the gatherings were at least quinions. If there were quinions, then the fourteen leaves would account for a preceding quinion and the last four leaves of the first quinion. On the other hand, on a senion hypothesis, one leaf would belong to the outermost bifolium of the current gathering, twelve would find themselves in the preceding senion, and the first leaf of the *Trésor* would be the last leaf of the first senion. One could also calculate for the rare case of a septenion-binding (7 bifolia) [Figures 27–29].

That the text of the *Trésor* would not begin at the start of a gathering seems odd, but a quick survey of available digitizations through Gallica shows that most copies of the *Trésor* were preceded by a table of the rubrics of the individual chapters. In some cases (e.g., Paris, Bibliothèque nationale de France, français 570), the text begins (f. 5r) with a gathering (a senion), and is preceded by a bifolium with the chapter titles; in other cases (français 569, 571 and français 1110, for example), the table of titles appears on the same quire as the beginning of the text, sometimes (français 571 and 1110) with a blank leaf between the tables and the text.

While measuring the tables of rubrics in the original manuscript is difficult, since they could have been done by a different hand or according to a different layout, the appearance of the beginning of the text in the same gathering favors the hypothesis of the same layout, namely, 2 columns, 31 lines per column. While many of the rubrics are long, extending to two or three lines in some manuscripts, most



Figure 27



Figure 28

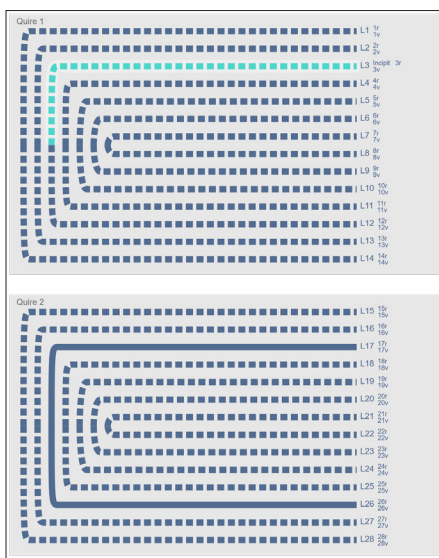


Figure 29

Figures 27–29: hypothetical collations of the original *Trésor* codex, assuming quinions (27), senions (28), or septions (29). These visualizations were created using VCEditor on 4 December 2023. Dotted lines indicate missing bifolia, the solid line situates the surviving bifolium, and the light blue dotted line stands for the *incipit* of the text.

are of the single-line variety. Thus, there will be less variation in total lines used for the tables of rubrics than there will be for the text.

Table 5: *Trésor* manuscripts, number of lines used for tables of rubrics

Manuscript	lines for book I rubrics	lines for book I–III rubrics
BnF, français 569	254	-
BnF, français 570	259	-
BnF, français 571	224	509
BnF, français 1110	271	455
Rouen, B.M., O 23	227	

At 31 lines per column, the Ripon original would require 7–9 columns, or between 2 leaves and 2 leaves and a page for the rubrics for book I. On the other hand, for the rubrics for all the books of the *Trésor*, between 4 leaves and 4 leaves and a page would be required. Neither solution fits the senion hypothesis, which would have 11 leaves preceding the incipit. If the codex had gatherings of seven bifolia, then the two leaves at the beginning would be close fit for a table of contents of just book I. On the quinion model, however, it is likely that the first gathering resembled that of français 1110, formerly of the Visconti family: f. 1r–b: Blank/*ex libris*, f. 2ra–5rb: table of rubrics, f. 6: blank, f. 7ra: beginning of the text. Since the Ripon original had fewer lines per column than 1110 (31 instead of 38), the rubrics likely continued on to f. 5v.³¹

³¹ The Visconti *Trésor* can also be used to validate the measurements and projections of the Ripon original. The Visconti manuscript (Paris, BnF, français 1110) is ruled at 38 and 39 lines per page. As noted, the text begins on f. 7r. The passage corresponding to the Ripon prior leaf is on 14ra, l. 34/39 – 14va, l. 25/39 (=69 lines); the one matching the posterior leaf (including a 10-line illumination) runs from f. 18ra, l. 33/39 to 18vb, l. 39/39 (85 lines), giving a measure of 154 Visconti lines for the Ripon Bifolium. Between the prior and posterior leaf-passages, there are 593 Visconti lines, and thus the estimate of 3.85 bifolia holds. Adding the lines together, we get an average of 74.7 Visconti lines per Ripon leaf. Now we reverse the calculation. We have estimated that the Ripon Original had 14 leaves preceding the Prior Leaf. That corresponds to $14 \times 74.7 = 1046$ lines in the Visconti manuscript. The first quire has 39 lines per column, so 156 lines per leaf. Divide the total estimated Visconti lines by lines per leaf: $1046 \div 156 = 6.7$ leaves estimated in the Visconti manuscript. The actual distance from f. 14ra 33/39 to the first line of f. 7ra is 6.22 leaves (969

The original manuscript from which came the Ripon bifolium was likely composed of quinions and contained, or was planned to contain, the entirety of the *Trésor*. In the original codex, assuming that it began with the *Trésor*, the Ripon fragment’s prior leaf would have been f. 21, and the posterior one, f. 30.

This example also provides an opportunity to examine the relative accuracy of counting lines, words, and characters: on the final measurement (with a sample of 10 leaves), the Chabaille Line method overestimated the text needed by about 3%, counting Carmody Characters overestimated by 1%, and Carmody Words underestimated by 0.7%. Given a sample of 10 leaves, all three methods are relatively accurate, and should the text afterwards be homogeneous, free of major disruptions, changes in layout, scribe or major changes in illumination density, these methods will provide a reliable estimate for the original text.

Using the corrected average of 583 Carmody Words per leaf, we can project the size of the rest of the manuscript [Table 6].

Table 6: Ripon *Trésor*, projection of the size of the original manuscript

Section	Carmody Words	Leaves
Book I-Posterior Leaf	13,983	24
Rest of Book I	49,899	85.6
Book II	61,157	104.9
Book III	47,000	80.6
Total	172,039	295.1

Assuming 2% error, the total work would have covered 289–301 leaves bound in 29–30 quinions. Someone inspired by a drawing of a temple derived from a piece of pediment, or an amphora from a handle sherd, might make a diagram of the collation: 30 groups of

Visconti lines, an error of one page). To estimate the extension of the *Trésor* in the other direction, we first estimate total lines in the remainder of the Visconti manuscript, from f. 19ra, l. 1 to f. 155vb, l. 15 (assuming an even split between 38- and 39-line columns): 20,919 Visconti-lines, which correspond to 280 leaves in the Ripon Original; adding the three prior quinions produces a 310-leaf codex.

five bifolia, all missing, except for one, the outer bifolium of the third gathering.³²

Obviously, such an extrapolation needs qualification. The *Trésor*, like the *Historia Scholastica* in Latin, accumulated interpolations and significant accidents from manuscript to manuscript.³³ Moreover, several manuscripts have illuminations, and there are diagrams, particularly astronomical ones in book 1, part 3, and the *mappamundi* in book 1, part 4; we have no idea how much space these would take, or how it would influence the relationship between the Carmody edition and the gatherings. The same scribe would have had to copy the entire codex with the same density of script. Very rarely does such a “perfect” manuscript exist in nature. By compounding hypotheses, we are moving from the solid basis of the script on the bifolium to an increasingly conjectural original. Finally, a bifolium-normative approach to medieval quire structures has been rightly challenged by descriptive codicologists; at the very least, we cannot distinguish between two non-existent singletons and a single missing bifolium.³⁴

On the other hand, the power and accuracy of this method rewards detailed investigation. For example, one could use this method to estimate the number and type of illuminations in the written area in the non-present leaves. If a critical edition has an extensive apparatus, one might be able to not only align the text with a family tradition, but also to determine whether any major textual perturbations (large additions and omissions) were present in the missing sections, which would further situate the fragment as a witness to the text. With fragments of large books, we might expect to find another leaf or bifolium in the future, and this form of conjecture can specify some of the criteria that will make the

32 On such visualization techniques, see A. Dorofeeva, “Visualizing Codicologically and Textually Complex Manuscripts”, *Manuscript Studies* 4 (2019), 334–360.

33 See the discussion in Beltrami’s “Nota al testo e alla tradizione”, in Brunetto Latini, *Tresor*, ed. Beltrami et al., xxvii–xxxiii.

34 Dorofeeva, “Visualizing Codicologically and Textually Complex Manuscripts”, 350–351, summarizes the discussion, with major contributions from Gumbert, in the context of the prejudice introduced by presuming the bifolium.

search easier. The identification of such future fragments will, in turn, allow us to confirm and refine the reconstruction.

This example also shows the importance of a suitable edition. The term “critical edition” has many meanings, depending on the discipline within which the edition is produced, national traditions, and the goals of the editors. At times, as in the example, a more modern edition is available, but not in digital form, as was the case here.³⁵ A pre-digital approach would specify without hesitation using the more reliable edition. When working with digital sources, however, the availability of older texts plays strongly in their favor. While the Beltrami edition features an apparatus with variants, and could be used to form a more detailed assessment, the facing-page translation requires significant variation in text density, so that pages and even lines on a page are not reliable measures. Scanning the text, applying optical character recognition, and then using Adobe Acrobat’s text editing feature to copy-and-paste the French text on the first part of the work took forty minutes (thanks to the need to scan less than ten percent of the work); including borrowing and returning the book, this calculation took approximately two hours to perform. That time in itself may seem short, but it is unacceptably long for many projects with thousands of fragments and only a fraction of the time available. Moreover, Latini’s *Trésor* is an ideal situation: we have multiple modern editions to choose from, and they all are relatively good.

As a corollary, these textual methods underscore the need for critical editions that are available in digital form and in Open Access. Print editions and digital ones copyrighted or in limited-access databases lack the utility of the previous editions, hasty transcriptions, and manuscript sources that they propose to replace.

Conclusion

The extrapolative method is not particularly complicated and has been practiced, explicitly or implicitly, by scholars for centuries. Similarly, cataloguers have made an art of identifying the

35 Brunetto Latini, *Tresor*, ed. Beltrami et al.

orientation of manuscript leaves and bifolia from textual, paratextual, and material cues. By documenting these techniques, my hope is to engender discussion on how to approach fragments, to provoke criticism and hopefully refinement of these techniques. How far can we take these methods, and to what degree are they useful for understanding this facet of fragments?

In working with fragments, we seem to cite them in two ways: as they currently are and as they were. In referring to them as they currently are, it seems that we should avoid applying a schema that makes sense only for intact, bound books. We cite an in situ fragment according to its location in a host volume, and a loose fragment according to its shelfmark, *Fragmentarium* ID, or other identifying feature. To refer to the intellectual content, however, requires some level of reconstruction, if only the determination of the orientation. For a leaf has two sides, recto and verso, and a bifolium has two sides, inwards and outwards. Unless the leaves of a bifolium still have their original foliation, the act of giving them numbers, such as f. 1 and f. 2, A and B, makes less sense than to refer to them as prior and posterior. A bifolium has conjoined leaves that are relative to each other.

Reconstructions never rebuild the original, but they can provide a way to place the fragment in its original context, and establish a framework for future investigation. Even a quick perusal of the *Fragmentarium* database shows that different projects vary considerably in the level of precision used for identifying and orienting. Such variability lies in the heterogeneous vicissitudes of fragment work, with variable goals and times to achieve them. Thus, some scholars work on reconstructions over decades, curating them as new fragments appear, and adjusting them to fit their hypotheses.³⁶ Some researchers focus their attention on working with pieces of the same manuscript in the same collection, and recreate the leaves with attention and care.³⁷ In other cases, reconstructive work becomes

36 See, notably, [E-75ud] the Gottschalk Antiphonal that Lisa Fagin Davis maintains on *Fragmentarium*; L. Fagin Davis, *The Gottschalk Antiphonary: Music and Liturgy in Twelfth-Century Lambach*, Cambridge 2000.

37 E.g., A. Manfredi, “*Fragmenta disiecta et recollecta* da un codice giuridico ora Vat. lat. 15518”, *The Vatican Library Review* 2 (2023), 75–86.

part of project workflow aimed at the publication of a large number of fragments in a short period.³⁸

The documentation of these methods aims to help build experience and competence with fragments, reducing the time needed for the initial work of identifying, orienting, and situating the fragments, while producing more accurate results in envisioning the prior whole. The reliability of the extrapolative method can be confirmed by reference to multiple texts of reference, such as editions or other manuscripts, and by using such a method on more complete witnesses.

The investigation of a fragment begins with the material object, and asking the question “what is it?” If it is part of a book, and is a single piece, one must determine whether it is part of a leaf or a bifolium. Then reconstruction begins with the orientation, assigning recto and verso to a leaf, inwards and outwards to a bifolium. Then we can relate fragments from the same manuscript together. A part of a leaf can be used to rebuild the rest; a bifolium can lead to a quire, and even to a model of the original codex. The expression “finding the prior leaf” has therefore a dual meaning: it can refer to determining the orientation of the bifolium and, by synecdoche, it signifies discovering the previous codex, the one that has left meager remnants, but remnants that can speak a volume about the whole.

Obviously, this discussion has its limitations. Fragments of written material are not limited to manuscript books. Documents, notably charters and letters, often are reused in bindings.³⁹ We also encounter ephemera, printed fragments, and illuminations. These will require their own methods. Moreover, reconstruction of the text only provides one of the contexts for the fragment. For, it should be underscored that, assertions to the contrary notwithstanding, manuscript fragments almost never arise from natural causes.

38 I. Dobcheva and C. Mackert, “Manuscript Fragments in the University Library, Leipzig: Types and Cataloguing Patterns”, *Fragmentology* 1 (2018), 83–110, at 90–91, for example, describes a methodology for a summary description of fragments that averaged about four hours per fragment.

39 See most recently, G. De Gregorio, M.L. Mangini, and M. Modesti (eds.), *Documenti scartati, documenti reimpiegati. Forme, linguaggi, metodi per nuove prospettive di ricerca*, Genova 2023, for a statement of mission and recent studies on documentary fragments.

The circumstances of fragmentation, if known, provide invaluable insight, most obviously on the death of the original object. The knowledge of when and where a binding was made identifies when the recycling of written or printed material occurred, when the work became, in the eyes of its owner, more valuable for its material properties than for the text it transmitted.⁴⁰ The traffic in cuttings,⁴¹ the sales of individual leaves,⁴² or even the last sale of an intact codex prior to its breaking provide likewise an indication when and where the book's value became less than that of the illuminations subsequently cut from their context,⁴³ or of its leaves, sold off as individual examples of calligraphy,⁴⁴ or even as totemic representations of medievalism.⁴⁵ Similarly, the sack of a church,⁴⁶

40 Most famously, N.R. Ker, *Fragments of medieval manuscripts used as paste-downs in Oxford bindings, with a survey of Oxford binding c. 1515–1620*, Oxford 1954, repr. 2000 [2004]; now online as part of the *Lost Manuscripts* project: <https://www.lostmss.org.uk/pastedowns-oxford-bindings-online-poxbo>.

41 R. Wieck, “*Folia Fugitiva*: The Pursuit of the Illuminated Manuscript Leaf”, *The Journal of the Walters Art Gallery* 54 (1996), 233–254; A.-M. Eze, “Abbé Luigi Celotti and the Sistine Chapel Manuscripts”, *Rivista di storia della miniatura* 20 (2016), 139–54.

42 E.g., S. Gwara, “Collections, Compilations, and Convolutes of Medieval and Renaissance Manuscripts in North America before ca. 1900”, *Fragmentology* 3 (2020), 73–139.

43 S. Hindman, M. Camille, N. Rowe, and R. Watson, *Manuscript Illumination in the Modern Age: Recovery and Reconstruction*, Evanston, IL, 2001, 3–45; M. Connolly, “The album and the scrapbook”, *Florilegium* 35 (2018), 31–51.

44 See, e.g., the literature on the biblioclastic work of Otto Ege, especially L. Fagin Davis, “The Beauvais Missal: Otto Ege’s Scattered Leaves and Digital Surrogacy”, *Florilegium* 33 (2016), 143–166; and S. Gwara, *Otto Ege’s Manuscripts: A Study of Ege’s Manuscript Collections, Portfolios, and Retail Trade, with a Comprehensive Handlist of Manuscripts Collected or Sold*, Cacy, SC, 2013.

45 C. De Hamel, *Cutting Up Manuscripts for Pleasure and Profit*, Charlottesville 1996.

46 P. Chambert-Protat, “A Seventeenth-Century Treasure Hunter in the Rubble of a Ninth-Century Library. Gathering Fragments and the History of Libraries”, *Fragmentology* 1 (2018), 65–81.

the bombing of a library,⁴⁷ or the visit of a humanist⁴⁸ dates precisely when the surviving written work's context altered permanently. This crucial information provides the point of departure for much of the exciting work in fragmentology, allowing us to use a concrete point of transition to document the changing contexts of human written artifacts over the centuries.

These circumstances also provide important leads for the recovery of other parts of the fragmented objects, their books, their bindings, and even the other works in the libraries and archives they came from. When the binder is known, other leaves from the same book can be recovered.⁴⁹ By tracing down sales records, broken books can be reassembled. Post-fragmentation inscriptions, such as information related to a host volume or the sale of a leaf or cutting, can similarly be used to put the pieces back together.

In short, fragments witness more than books, and provide vast opportunities for exploration. Reconstruction is nothing more than the first step.

47 V. Drescher, *Chartres – eine fragmentierte Bibliothek. Rekonstruktion des mittelalterlichen Buchbestandes des Klosters Saint-Père-en-Vallée*, unpublished Ph.D. thesis, Université de Fribourg, 2022. See also the studies on “Restorations and Investigations on the Burned Manuscripts of the Bibliothèque Municipale de Chartres and of the Biblioteca Nazionale Universitaria di Torino” in the special issue: *Scrineum Rivista* 17:1 (2020) (<https://oajournals.fupress.net/index.php/scrineum/issue/view/513>);

48 J. Frońska, “Les Dupuy à Chartres et le plus ancien inventaire des manuscrits à la bibliothèque du chapitre cathédral”, *Scriptorium* 74 (2021), 223–250, at 249; E. Pellegrin, “Membra disiecta floriacensia”, *Bibliothèque de l'École des chartes* 117 (1959), 5–56, reprinted in *Bibliothèques Retrouvées. Manuscrits, Bibliothèques et Bibliophiles du Moyen Age et de la Renaissance*, Paris 1988, 159–210 (and the literature cited there), documenting fragments from Pierre Daniel's sixteenth-century depredations.

49 Or even the lutemaker; see J.-P. Échard and L. Albiero, “Identifying Medieval Fragments in Three Musical Instruments Made by Antonio Stradivari”, *Fragmentology* 4 (2021), 3–28.

Appendix: Working with Fragments Digitally: Photogrammetry, Scaling, and Reconstructing leaves

While digitization has revolutionized manuscript studies, digital surrogates only partially communicate the materiality of the objects themselves. In a viewer that automatically displays static images to fit a screen, the relative size of objects disappears along with their feel, the context of their storage, and their dynamic relation to the world. Therefore, it is critical that manuscript material be digitized under controlled conditions that can be repeated, and that every digitization series include reference images, if not reference objects in each image.

These references to the physical world enable the identification of geographically dispersed fragments as coming from the same manuscript and their reunion in virtual reconstructions. In order to put the pieces back together, we need to establish the relation between the physical object and the surrogate, which will allow us to use images to obtain details about the dimensions of the object.

Simple Photogrammetry

Photogrammetry is a sophisticated discipline that has developed over a century and a half and focuses on using photography in the measurement of three-dimensional objects.⁵⁰ While medieval written artefacts are three-dimensional, our representations and discussions often treat them as two-dimensional, and thus makes using photographs to measure these objects much easier than is the case for the more classic uses of photogrammetry, hence the qualification ‘simple’ photogrammetry.

Using digital images to measure fragments (or manuscripts) involves image viewing or editing software and suitable images. After establishing the suitability of the images, the researcher determines the scale of the image, validates the scale, and then uses the proceeds

50 For a commonly-available history of the discipline, see the lecture notes, “Center for Photogrammetric Training”, *History of Photogrammetry*, 2008 (<https://assets.documentcloud.org/documents/3235835/History-of-Photogrammetry.pdf>).

to make measurements using the scale. If the measurements are published, the researcher should specify the method by which they were obtained, and document the precise choices made in obtaining them.

Software

Image viewing or editing software must be capable of measuring the distance in pixels between two points in an image. This basic functionality exists in numerous image suites, including Adobe Photoshop (ruler tool) and the Open-Source GNU Image Manipulation Program (G.I.M.P.) (measurement tool).⁵¹

Suitable images

Not all fragment images are equally suitable for photogrammetry. Either the image should have a reference object in it, such as a ruler, or there should be a reference object in the same series of images. The reference object and the object to be photographed should be flat in the plane of focus, at the same distance from the imaging equipment (camera or scanner). Often, the angle from the surface to be photographed to the camera is not quite 90 degrees, and the result is a distortion in the measurement. With images in a series, attention should be paid to the focal distance. A pastedown in the front of the book, for example, could be significantly closer to the camera than a pastedown in the back. If the ruler used is then photographed at the front of the book, the back pastedown will return a smaller measurement than the front. Finally, camera lenses can distort the image.

Many sub-ideal images can still produce decent measurements. If no proper reference image is at hand, something with known dimensions (such as a standard hole punch for being placed in a binder, or a library stamp) can be used; even the fragment itself, if it was previously measured, can be used as a reference object (as with the example using [Figure 22], above). Any such adaptations, however, should be noted, as well as any mitigating measures.

⁵¹ The distance between a pair of x,y coordinates on a grid can be obtained by applying the Pythagorean theorem: $\sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$.

Determining Scale

The scale is the number of pixels per physical millimeter (px/mm). To arrive at an accurate measurement, take a large measurement and divide. Magnify the image to at least 100% (1 pixel on the screen = 1 pixel on the image) and measure a large part of the reference object. If using a ruler, measure, for example, 10 cm.⁵² Record the number of pixels, then divide that number by the length of the measurement, in our case, by 100 (mm). Record this result as the scale, expressed as:

$$\text{scale} = S \text{ pixels per mm}$$

Validate the scale and the image

To the degree possible, measure in pixels reference objects in different parts of the image, divide the results by the scale (S) and compare to the physical measurements. Note any variation.

Measure

Use the ruler or measurement tool to make measurements in pixels on the image, and divide the result by the scale (S) to get the size in millimeters. Record the measurement, along with the method taken, and the likely degree of precision.

Scaling Images

The simple photogrammetry method above derives a scale for each image. Comparison of manuscripts requires images at the same scale. For virtual reconstructions of pages and bifolia, being to scale constitutes a necessary condition.

For any set of images, in suitable image editing software (e.g., G.I.M.P. or Photoshop):

1. Establish the scale, as above, for all images (as S_1 , S_2 , S_3 , etc.).
2. Note the image with the lowest px/mm value, and record that as S_{\min} . This is the lowest-resolution image, and we will be scaling down all other images to that resolution.
3. For each other image

52 Not all rulers are equally accurate; Famously, the ruler indications on one of the versions of the popular Digital Colorchecker SG feature a first “centimeter” that is only 9 mm long (see, e.g., the colorchecker on [[F-r237](#)])!

- a. Go to Change Image Size, and select image size by pixels, being sure that “scaled” is selected, so that height and width are changed together.
- b. To determine the target width, multiply the current width in pixels by the ratio of the lowest-resolution image (S_{min}) to the current scale (S_n):

$$\text{scaled width} = \text{width in pixels} \times (S_n/S_{min})$$

- c. Enter the scaled width in the width box.
- d. Resize, ensuring that both height and width change. The image is now to scale.

Reconstructing leaves

Occasionally, pieces from the same leaf or bifolium surface. A digital reconstruction of the image becomes desirable. Digital images of the fragments, when taken against a neutral background, allow for them to be removed from the background and placed on the same canvas. These fragments can fall under the same shelfmark, such as [F-f72y] Wien, Österreichische Nationalbibliothek, Cod. 3820 [Figure 30], or they can come from different parts of the world (see, for example, Elizabeth Mullins’ contribution to this issue).

1. Create a master canvas, either by extending the canvas of a scaled image that already exists, or by creating a new blank canvas. Make it at least twice as big as you think it needs to be. Save it with a unique name.
2. Select, cut and paste the fragments onto the master canvas.
 - a. Using the Magnetic Lasso Tool or Magic Wand (Photoshop) or the Fuzzy Select Tool (Gimp), carefully select the fragment, and copy the selection.
 - b. Go to the master canvas, paste in the fragment, move it into place, using rotation and transform (and free transform/distort if necessary) until it fits well.
3. When everything is in place, flatten the image/merge the layers. For IIIF viewers such as Fragmentarium, save the reconstruction as a .jp2 JPEG-2000 (Photoshop), or as an uncompressed PNG (G.I.M.P.), which will then require conversion.



Carolingian Bible Fragments in Dublin

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Abstract: Fragments from an early-ninth century Carolingian Old Testament are used as sewing guards in two incunabula currently held in the Special Collections Department of the James Joyce Library, University College Dublin. The host volumes are part of the four-volume 1481–1482 Nuremberg printing of Alexander of Hales’ *Summa*. The provenance of the UCD incunabula establishes that the two volumes bearing the Carolingian fragments were in the Bavarian abbey of Benediktbeuern in the fifteenth century. The fragments in these books can be associated with similar material in the Bayerische Staatsbibliothek in Munich and in the Sir George Grey Collection in Auckland Central Library.

Keywords: Fragments, Carolingian Bibles, Benediktbeuern, quire guards

Fragments from a ninth-century Carolingian Bible remain in situ as sewing guards in two incunabula held in the Special Collections Department of the James Joyce Library, University College Dublin. The two host volumes are part of a four-volume set that contains the *Summa universae theologiae* of Alexander of Hales.¹ Colophons

* I am grateful to the anonymous readers of this article for their feedback. I would also like to thank Associate Professor Niamh Pattwell and Professor Alexandra Barratt for their generous assistance and advice. Special thanks are due to Jane Wilde and Renée Orr, Research and Heritage Services, Ngā Pātaka Kōrero o Tāmaki Makaurau - Auckland Libraries, Vincent Hoban, Photographer UCD, and Evelyn Flanagan and Eugene Roche, Special Collections, James Joyce Library.

1 Alexander de Ales, *Summa universae theologiae*, partes I–IV, Nuremberg 1481–1482, Dublin, University College Dublin Special Collections, OFM XL 4 (I–IV). See the UCD catalogue entry at http://library.ucd.ie/iii/encore/record/C__Rb2125875.

in each of the four books attest to their printing by Anton Koberger in Nuremberg between December 1481 and August 1482.² This makes these volumes some of the oldest members of UCD Library's collection of circa 5000 rare books that were formerly held in the libraries of Franciscan friaries in Ireland.³ The books comprising the *Summa universae theologiae*, now referred to by the shelfmark OFM XL 4 (I–IV), were transferred in 2006 to UCD from Dun Mhuire, the Franciscan House of Studies in Killiney, County Dublin. Previously, the set was part of the library of a Franciscan house in Killarney, County Kerry. This is indicated by the blind stamping “Holy Trinity Franciscan convent, Killarney” and a marginal inscription towards the end of OFM XL 4 (IV) that notes its presence in Killarney in 1899. There is no record of when the volumes arrived in County Kerry, but this can be dated to after 1860 when the friary in Killarney was founded.⁴

While the four volumes that make up OFM XL 4 (I–IV) were printed at the same time, their provenance split thereafter. This is evident most obviously in their binding. The first and fourth volumes of the set, having the shelfmarks OFM XL 4 (II) and (IV), are in fifteenth-century pigskin bindings that are decorated with blind tooling and have marks that indicate the original presence of metal clasps and ornament. Volumes two and three, OFM XL 4 (I) and (III) respectively, are in a sixteenth-century binding of wood and vellum and feature thumb indexes to allow for easier navigation of their volumes' contents.

The early history of the two pigskin-bound volumes is opaque. OFM XL 4 (IV) bears the inscription “*Mon(aste)rrii S. Zenonis*” in

2 GW 00871 (<https://www.gesamtkatalogderwiegendrucke.de/docs/GW00871.htm>).

3 See I. Fennessey, “Alphabetical indexes for Irish Franciscan incunabula in Rome and Dublin”, *Collectanea Hibernica* 43 (2001), 34–49. Background information on the UCD Franciscan collection is available at <https://www.ucd.ie/specialcollections/print/franciscan/> and also E. Bhreathnach, “The Franciscan Library Killiney: the journey of a valuable historical repository from 1607 to 2007”, *Irish Archives* 14 (2007), 5–14.

4 For the history of the friary in Kerry see P. Conlan, “The Franciscan Friary, Killarney, 1860–1902”, *Journal of the Kerry Archaeological and Historical Society* 10 (1977), 77–110.

an early modern hand. While this could refer, for example, to the monastery of the Augustinian Canons of Saint Zeno at Reichenhall in south-eastern Germany, there are many possible candidates, such as the foundations dedicated to Saint Zeno in Verona or Pistoia, that could have provided homes for these books. Information about the provenance of OFM XL 4 (II) and (IV) may be uncovered by further research on surviving internal evidence, such as the pastedown of a printed page from Chapters 18 and 19 of the *Vita Christi* of Ludolph of Saxony on the back cover of OFM XL 4 (IV) and on the vellum sewing guard in a later gothic script that directly precedes this.

The two volumes bound in the sixteenth century provide more information about their past. Both volumes include inscriptions and bookplates that identify them as former members of the library of the Abbey of Benediktbeuern, also in south-eastern Germany.⁵ The inscriptions are in the form of the commonly used attribution of “*Iste liber attinet monasterio n(ost)ro Benediktenpeyren*”.⁶ There are two types of *ex libris* in both volumes. The first type, which appears on the reverse of each volume’s opening flyleaf, comprises a black initial L on a yellow background, that is framed by a red circle set inside a green square. The other bookplate represents a shield with crossed croziers surmounted by bishop’s mitre, palm leaf, and crozier. This plate in OFM XL 4 (I) is inscribed: “*Hic liber spectat ad monasterium Benedictoburanum*”; in OFM XL 4 (III) it reads: “*Ludovicus . Perczl . Abbas in . Benedictn . Peyrn*”. The latter inscription associates the volume with Abbot Ludovico Perczl (1548–1570), who renovated the library at Benediktbeuern in the mid-sixteenth century.⁷

5 See the digitized *Ex libris* for Benediktbeuern in *Kloster-Exlibris der Bayerischen Staatsbibliothek*, v. 1, 86–89 available at <https://www.digitale-sammlungen.de/en/details/bsb00056591>.

6 Included for example on the flyleaves of both OFM XL 4 (I) and (III) and on the page with the colophon in OFM XL 4 (I).

7 For a discussion of Perczl and of the history of the library at Benediktbeuern see J. Hemmerle, *Das Bistum Augsburg 1: Die Benediktinerabtei Benediktbeuern* (Germania Sacra N.F. 28), Berlin 1991, 64–73; “Benediktbeuern”, in *Owners of Incunabula* database (<https://data.cerl.org/owners/3828>); and S. Kellner, *Historische Kataloge der Bayerischen Staatsbibliothek München*, Wiesbaden 1996, 161–168 (https://daten.digitale-sammlungen.de/bsb00008931/image_195).

The secularization of the abbey in 1803 led to the dispersal of the library's holdings. Many of the monastery's books, especially manuscripts and incunabula, were transferred to the Bayerische Staatsbibliothek in Munich; other volumes, however, particularly duplicates, made their way into the nineteenth-century European book trade and hence to shelves in libraries such as those in the friary in Killarney.

The current catalogue entry for OFM XL 4 contains some information about the presence of fragmentary material in the volumes. While it does not mention the Carolingian sewing guards, the catalogue entry notes the presence of liturgical material under the backboard pastedown in OFM XL 4 (1) and of a fragmentary manuscript leaf (f. 331) containing 'text from Corinthians (first column) and a Prayer for souls (second column)'.

In fact, f. 331 is a fragment from a missal; the texts on f. 331r have lines from 2 Maccabees 12.43–44 and the opening words of the secret in a *Missa pro defunctis parentibus*, '*Suscipe sacrificium d(omi)ne quod tibi p(ro) animabus patris et matris*'.⁸ The leaf's verso contains text from 1 Corinthians 15.51 and the opening lines of the collect from a *Missa pro defuncto sacerdote*, '*DA NOBIS D(OMI)NE UT ANIMA FAMU-/li tui sacerdotis qua(m) de huius s(ae)c(u)li [eduxisti]*'.⁹ The pre-gothic script dates this fragment to the twelfth century. While the leaf cannot definitively be attributed to the scriptorium at Benediktbeuern, the place where its host volume was held, it is not implausible. The period between the middle of the eleventh and the middle of the thirteenth century was a productive one for the scriptorium, with a book list from around 1250 including some 267 entries. Indeed, catalogues of surviving manuscripts and fragments from the monastery record numerous liturgical books produced in this period.¹⁰

8 See *Usuarium. A Digital Library and Database for the Study of Latin Liturgical History in the Middle Ages and Early Modern Period* (<https://usuarium.elte.hu/>)

9 Ibid.

10 See for example G. Glauche, *Katalog der lateinischen Handschriften der Bayerischen Staatsbibliothek München, Die Pergamenthandschriften aus Benediktbeuern, Clm 4501–4663*, Wiesbaden 1994; and H. Hauke, *Katalog der lateinischen Fragmente der Bayerischen Staatsbibliothek München, Bd. 1*,

The Carolingian material in OFM XL 4 (I) and (III) consists in a series of sewing guards that, following a practice common in the fifteenth century, were used to reinforce the binding of the text block throughout both books.¹¹ Although used for each quire, only some of the guards are visible, mainly those supporting the quires towards the start and end of both volumes where the binding is looser. These guards are from bifolia cut into strips on the horizontal and then folded. While there is writing on the recto and verso of each side of the guard, it is often only the sides that face outward towards the book that can be read, at times partially. These sides contain at least one and sometimes parts of two lines of text from an Old Testament manuscript spread across four columns. Table 1 reconstructs what survives of the original books from these fragmentary witnesses, namely seven bifolia and an additional fragment.

Table 1: Carolingian Sewing Guard Fragments in OFM XL 4 (I) and (III)

Bifolium 1

Text from Exodus 37–38, on one leaf, and from Leviticus 9–10, on the other, preserved on one sewing guard in OFM XL 4 (III), f. 9/10.

Page	OFM XL 4 (III) loc.	col. a	col. b
Prior recto	f. 9/10	Ex 37.15	Ex 37.25
Prior verso	f. 9/10	Ex 38.10	Ex 38.20
Post. recto	f. 9/10	Lv 9.7	Lv 9.21
Post. verso	f. 9/10	Lv 10.6	Lv 10.15

Fragmenta Latina Clm 29202–29311, Wiesbaden 1994, available at https://daten.digital-e-sammlungen.de/bsbooio6368/image_7.

- 11 For sewing guards, see N. Pickwoad “The Techniques and Materials Used to Make bookbindings on Incunables” in *Materielle Aspekte in der Inkunabelforschung* (Wolfenbütteler Schriften zur Geschichte des Buchwesens 49), eds. C. Reske and W. Schmidt, Wiesbaden 2017, 189–212 and ‘sewing guards’ in the *Ligatus Language of Bindings* database (<http://w3id.org/lob/concept/3282>).

Bifolium 2

Text from Exodus 40 and Leviticus 1–2 on one leaf and from Leviticus 6–7 on the other, preserved on two sewing guards in OFM XL 4 (III), f. 233/234, f. 240/241.

Page	OFM XL 4 (III) loc.	col. a	col. b
Prior recto	f. 233/234	Ex 40.17	Ex 40.33
	f. 240/241	Ex 40.20	Ex 40.36
Prior verso	f. 233/234	Lv 1.9	Lv 2.2
	f. 240/241	Lv 1.10	Lv 2.3
Post. recto	f. 233/234	Lv 6.15	Lv 6.28
	f. 240/241	Lv 6.17	Lv 6.30
Post. verso	f. 233/234	Lv 7.11–12	Lv 7.23
	f. 240/241	Lv 7.14	Lv 7.26

Bifolium 3

Texts from Leviticus 13–14 on one leaf and from Leviticus 17–18 on the other, preserved on four sewing guards in OFM 4 (III), f. 16/17, f. 32/33, f. 27/28, f. 67/68.

Page	OFM XL 4 (III) loc.	col. a	col. b
Prior recto	f. 16/17	Lv 13.48	Lv 14.2
	f. 32/33	Lv 13.49	Lv 14.4
	f. 67/68	Lv 13.51	Lv 14.5–6
	f. 27/28	Lv 13.55	Lv 14.8
Prior verso	f. 16/17	Lv 14.13	Lv 14.23–24
	f. 32/33	-	-
	f. 67/68	-	-
	f. 27/28	Lv 14.17	Lv 14.29
Post. recto	f. 16/17	Lv 17.3	Lv 17.12
	f. 32/33	-	-
	f. 67/68	-	-
	f. 27/28	Lv 17.7	Lv 17.15
Post. verso	f. 16/17	Lv 18.6	Lv 18.20
	f. 32/33	Lv 18.7	Lv 18.21
	f. 67/68	Lv 18.10	Lv 18.23
	f. 27/28	Lv 18.12–14	Lv 18.26

Bifolium 4

Text from Deuteronomy 12 on one leaf and Deuteronomy 15 on the other, preserved on one sewing guard in OFM XL 4 (1), f. 162/163.

Page	OFM XL 4 (1) loc.	col. a	col. b
Prior recto	f. 162/163	Dt 12.17	Dt 12.27
Prior verso	f. 162/163	-	-
Post. recto	f. 162.163	-	
Post. verso	f. 162/163	Dt 15.5	-

Bifolium 5

Texts from Micah and Nahum 1 on one leaf and from Zachariah 7–8 on the other. The bifolium is preserved on one sewing guard in OFM XL 4 (1), f. 4/5. Additional partial evidence with text from Za. 7.9–10 on a guard on f. 20/21.

Page	OFM XL 4 (1) loc.	col. a	col. b
Prior recto	f. 4/5	-	-
Prior verso	f. 4/5	Explicit Micah, incipit Nahum	Na 1.12
Post. recto	f. 4/5	Za 7.7	Za 8.2–3
Post. verso	f. 4/5	-	-

Bifolium 6

Texts from Nahum 1–2 on one leaf and from Zachariah 5–6 on the other. The bifolium is preserved on one sewing guard in OFM XL 4 (1), f. 13/14.

Page	OFM XL 4 (1) loc.	col. a	col. b
Prior recto	f. 13/14	Na 1.14	Na. 2.9–10
Prior verso	f. 13/14	-	-
Post. recto	f. 13/14	-	-
Post. verso	f. 13/14	Za 5.5	Za 6.6

Bifolium 7

Text from Nahum 3 and Habakkuk 1 on one leaf and from Zachariah 2–5 on the other, preserved on two sewing guards in OFM XL 4 (I), f. 325/326, f. 333/334.

Page	OFM XL 4 (I) loc.	col. a	col. b
Prior recto	f. 325/326	-	-
	f. 333/334	Na 3.12–13	Hb 1.3
Prior verso	f. 325/326	Hb 1.5	Hb 1.15
	f. 333/334	-	-
Post. recto	f. 325/326	Za 2.3	Za 3.1
	f. 333/334	Za 2.10	Za 3.7
Post. verso	f. 325/326	-	-
	f. 333/334	Za 4.7	Za 5.4

Additional fragment

OFM XL 4 (III) f. 5/6: Running title in orange uncial for the prophet Joel.

The fragments listed feature texts from the Pentateuch: Exodus, Leviticus, Deuteronomy; and from the Minor Prophets: Joel, Micah, Nahum, Zachariah, and Habakkuk. As noted earlier, the amount of legible text from each bifolium varies depending on the tightness of the binding.

For example, OFM XL 4 (III) has legible text, mainly from Leviticus, on both the outside and inside of four of the sewing guards towards the opening of the volume. In contrast, the first sewing guard in OFM XL 4 (I) only has visible text on the sides of the guards that face outwards towards the book [Figures 1–3]. In this example the part of the sewing guard that faces the recto constitutes the upper part of the Carolingian bifolium. So reading from the bottom of the host volume, column a facing f. 5r [Figure 1a, 2] contains the Carolingian minuscule text ‘...usalem habitaret(ur)’ and column a facing f. 4v [Figure 1b, 3] reads ‘...enta ipsa . (et) ipsae urbes’ which come from Zacharias 7.7 ‘cum adhuc Hierusalem habitaretur, et esset opulenta ipsa et urbes in circuitu eius’. Column b is from Zacharias 8.2–3 ‘...et indignatione magna zelatus sum eam. Haec dicit Dominus exercituum: reversus sum ad Sion et habitabo in medio Hierusalem’.¹²

¹² Column b of the strip facing f. 5r reads ‘magna zelatus sum eam Haec’ and that on the recto ‘dic(it) d(omi)n(u)s exercituum Reuersus su(m)’ with the upper

DOI: [10.24446/oedi](https://doi.org/10.24446/oedi)



Figure 2: University College Dublin Special Collections, OFM XL 4 (i) 4/5, detail, digitally segmented. A: Za 7.7, B: Za 8.2, C: Explicit Micah, D: Na 1.12

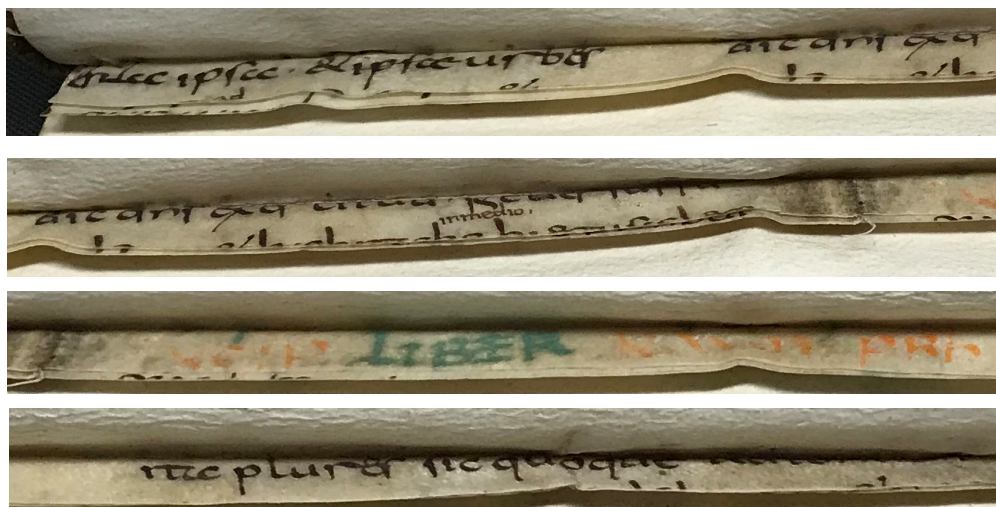


Figure 3: University College Dublin Special Collections, OFM XL 4 (i) 4/5, detail, digitally segmented. A: Za 7.7, B: Za 8.2-3, C: Incipit Naum, D: Na 1.12

In this case the ‘*in medio*’ appears as an interlinear correction contemporary with the main hand of the manuscript. Column c of this guard preserves the only visible example of the original manuscript’s use of display lettering with the inclusion of the title: ‘*EXPL(ICIT) MICHAS . PROPHE(TA)*’ on the part of the guard facing f.5r and ‘*INCIP(IT) LIBER NAUM PR(OP)H(ETA)*’ on the part facing f. 4v. These titles are written in uncial, with care taken to alternate the colours between green and orange ink. This fragment preserves the final column of the bifolium at the top of the host volume, where can be read Nahum 1.12 ‘*Haec dicit Dominus si perfecti fuerint et ita plures sic quoque adtontentur*’.¹³

Although the visible part of each sewing guard measures just ca. 8 mm × 41 mm, these small strips give a sense of the original layout of each folium in this manuscript, namely in two columns each measuring 80 mm. Including an intercolumnar space of 20 mm and margins of 30 mm at each side, the total width of the folium can be estimated at ca. 240 mm. While the height of the original volume is harder to calculate, there is a gap of around 169 words between the end of the line of one column and the start of the line in the next. With an average of 5 words per line, the manuscript is likely to have had roughly 34–35 lines per page.

Several sets of fragments survive that may derive from the same manuscript or manuscripts as are used in OFM XL 4 (I) and (III). Bischoff identified a total of five sets of Old Testament fragments from Benediktbeuern in his discussion of the scriptorium in *Die Südostdeutschen Schreibschulen und Bibliotheken in der Karolingerzeit*.¹⁴ One of these sets, comprising mainly of Clm 29260(6, was retrieved from the bindings of books from the nearby monastery

part of letters of the following line ‘*ad Sion et habitabo in medio Hierusalem*’ also visible.

13 ‘*Haec dicit d(omi)n(u)s si perfecti...*’ is evident on the part facing f. 5r; ‘*ita plures sic quoque a...*’ on the part facing f. 4v.

14 See B. Bischoff, *Die Südostdeutschen Schreibschulen und Bibliotheken in der Karolingerzeit*, Teil 1, Wiesbaden 1974, 22–47. These are updated as entries 3345, 3357, 3358, 3361, 3369 in B. Bischoff, *Katalog der festländischen Handschriften des neunten Jahrhunderts* 11, Wiesbaden 2004.

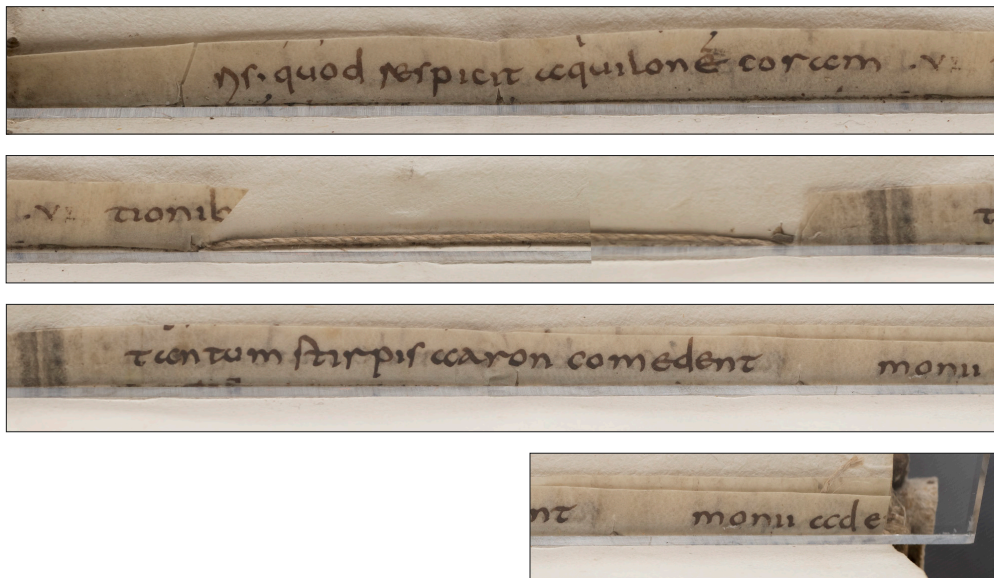


Figure 4: University College Dublin Special Collections, OFM XL 4 (III) 240/241, detail, digitally segmented. A: Lv 1.10, B: Lv 2.3, C: Lv 6.17, D: Lv 6.30

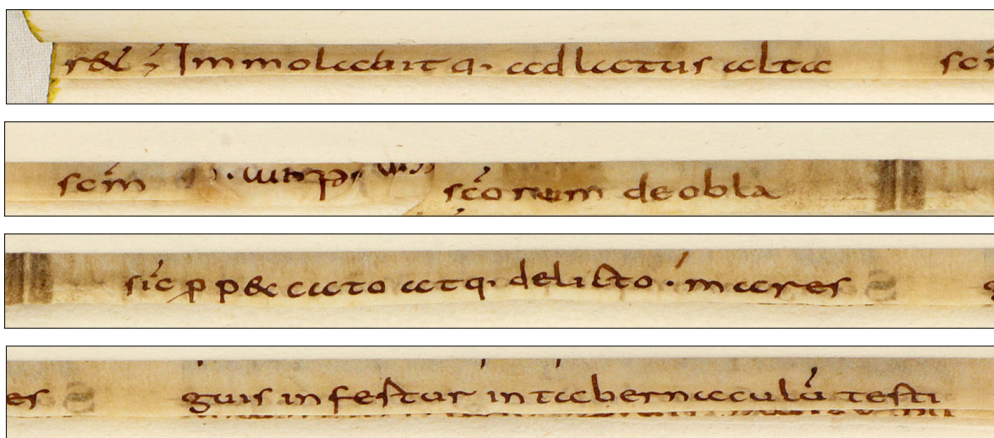


Figure 5: Auckland Libraries Heritage Collections, 1480 BIBL (IV), detail, digitally segmented. A: Lv 1.10–11, B: Lv 2.3, C: Lv 6.17–18, D: Lv 6.29–30

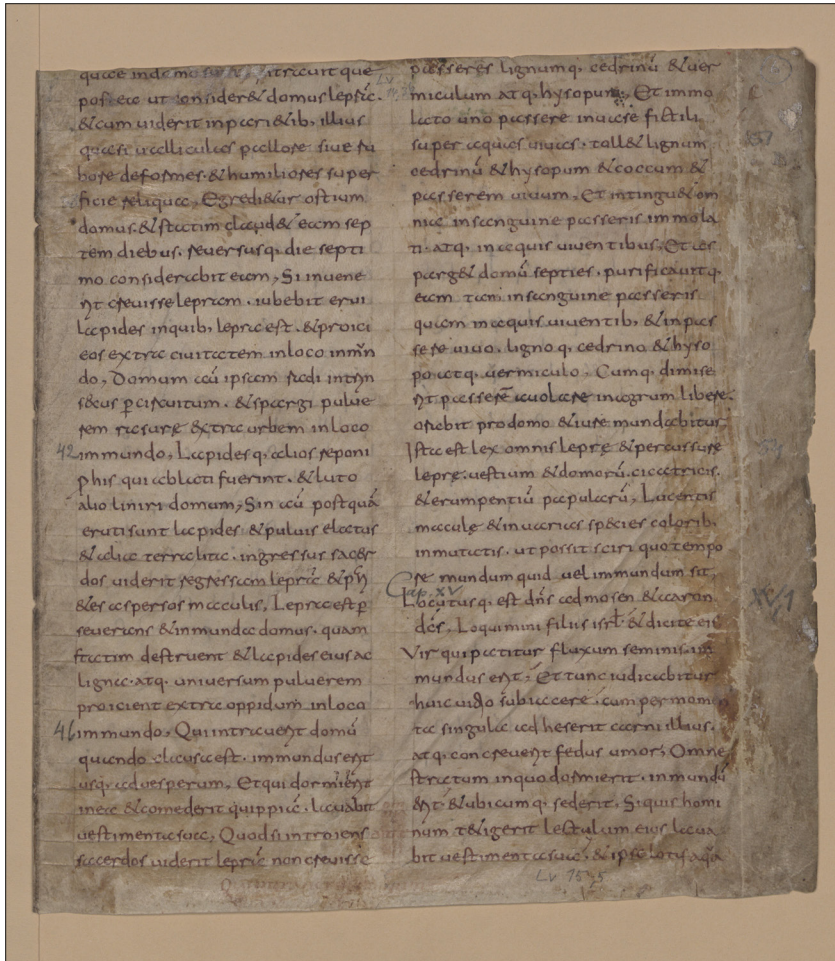


Figure 6: München, Bayerische Staatsbibliothek, Clm 29260(1: Lv 14.36–15.5 at Polling.¹⁵ These fragments, which feature texts from Samuel, III Kings, and Ezechiel, come from a full bible of a large size comparable

¹⁵ This set comprises München, Bayerische Staatsbibliothek, 29260(6 (olim Clm 29158) + Clm 11754 (Back pastedown) + Clm 11796 (Front and back pastedown, front and back flyleaves) + Clm 11811 (Front and back pastedown) + 4° Inc. c.a. 1109 a (Front and back pastedown). Bischoff, *Katalog*, 3361; Hauke, *Katalog*, 67. Digital edition of 29260(6 available at [urn:nbn:de:hbz:12-bsb00071132-6](http://nbn-resolving.org/urn:nbn:de:hbz:12-bsb00071132-6).

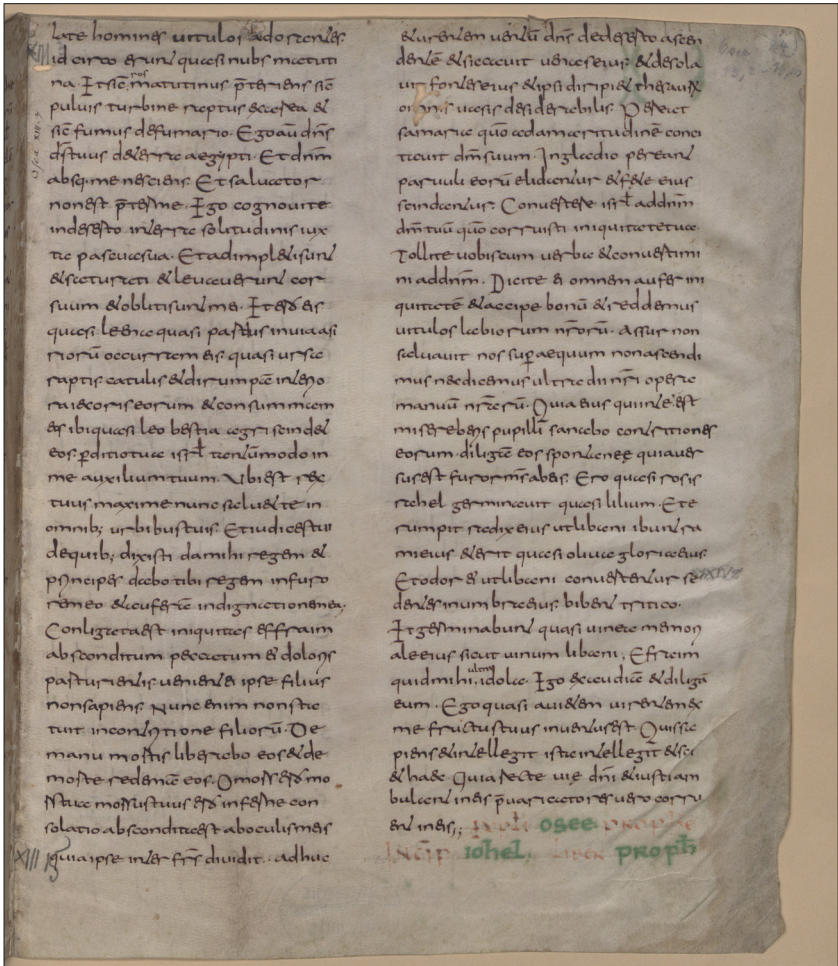


Figure 7: München, Bayerische Staatsbibliothek, Clm 29265(7: Os 13.3-14.9, explicit Osee, incipit Iohel

to those produced at this time at Tours. Yet its script and dimensions are very different from the Dublin fragments.

The four remaining sets of Old Testament fragments from Benediktbeuern in the Bayerische Staatsbibliothek are thought to come from multi-volume bibles and are closer in layout and appearance to the Dublin material. Two sets of fragments, Clm 29260(1 + membra disiecta Clm 4525 and Clm 29260(2, belong to Bischoff's second

group from the scriptorium, which he dates on palaeographical grounds to the first quarter of the ninth century. Clm 29260(1 consists of 6 bifolia and 8 single leaves containing texts from Genesis, Leviticus, Numbers, Deuteronomy, and Judges; the additional fragmentary leaf, Clm 4525, features text from Joshua 2.2/3.13.¹⁶ Clm 29260(2 comprises a single folium, two horizontal strips and four fragmentary pieces, and features texts from III Kings and II Paralipomenon.¹⁷

The second set of surviving Old Testament fragments linked to Benediktbeuern comprises Clm 27286 + membra disiecta and Clm 29265(7. This set belongs to Bischoff's fourth group of surviving material from the scriptorium. Also dated to the first quarter of the ninth century, the differences between the script of this group from that of contemporary manuscripts such as Clm 29260(1 led Bischoff to suggest that this material was produced in a foundation separate from, but closely associated with Benediktbeuern and he identified the nearby convent at Kochel as a possible candidate.¹⁸ Clm 27286 contains 46 leaves with texts from the books of Genesis, Exodus, Leviticus, Numbers, Deuteronomy, Joshua, and Judges.¹⁹ Related membra disiecta include sewing guards featuring text from Genesis 27/28 in Clm 4560, a single sewing guard in Clm 4524 and front and back cover pastedowns featuring text from Judges 14.13 in Clm 4620. Clm 29265(7, which comprises 7 fragmentary bifolia, one single page and one horizontal strip, preserves texts from the

16 München, Bayerische Staatsbibliothek, Clm 29260(1 (olim Clm 29156) + membra disiecta Clm 4525; Bischoff, *Katalog*, 3357; Hauke, *Katalog*, 65. Digital edition at [urn:nbn:de:bvb:12-bsb00071121-5](http://nbn:de:bvb:12-bsb00071121-5).

17 München, Bayerische Staatsbibliothek, Clm 69260(2, (olim Clm 29158); Bischoff, *Katalog*, 3358; Hauke, *Katalog*, 65. Digital images are available at [urn:nbn:de:bvb:12-bsb00071129-2](http://nbn:de:bvb:12-bsb00071129-2).

18 See Bischoff, *Schreibschulen*, 26–27; and G. Declerq, “The scriptorium of Benediktbeuern and the palimpsest codex Clm 6333”, in *Early Medieval Palimpsests* (Bibliologia 26), ed. G. Declerq, Turnhout 2007, 55–71, at 58–59.

19 München, Bayerische Staatsbibliothek, Clm 27286 + Clm 4524 (Fold p. 9/10) + Clm 4560 (Folds) + Clm 4620 (Front and back pastedowns now free standing) + 2° Inc. s.a. 229 (Front and back pastedowns, folds) + 2° Inc. c.a. 273 (folds); Bischoff, *Katalog*, 3345.

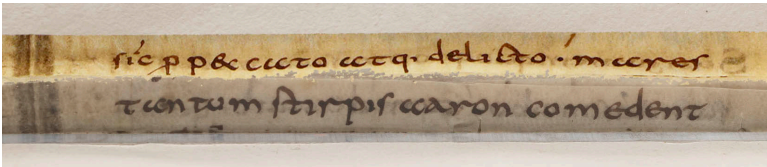
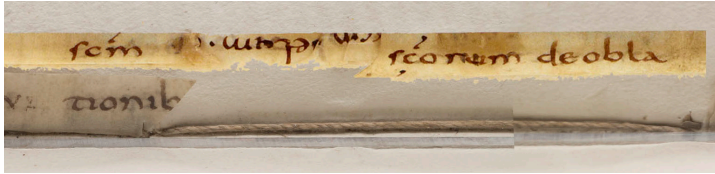
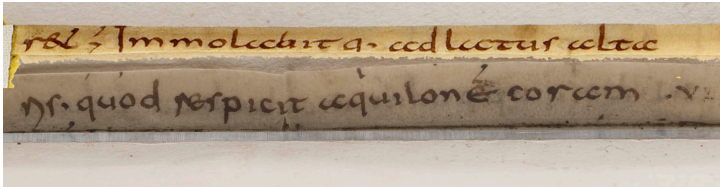
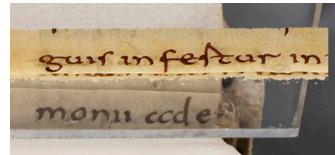


Figure 8: Auckland and Dublin fragments [Figures 4 and 5, above], segmented into four parts and overlaid



Prophets: Isaiah, Jeremiah, Lamentations, Ezechiel, Daniel, Hosea, Joel, and Zacharias.²⁰

Since Bischoff's work, additional fragments from an Old Testament produced in Benediktbeuern have been identified by Alexandra Barratt as in situ sewing guards in a set of incunabula with the shelfmark 1480 BIBL that are held as part of Sir George Grey Special Collections in Auckland Central Library.²¹ These volumes were purchased by mail order from London by Henry Shaw, a wealthy accountant and keen bibliophile based in New Zealand, who donated them

20 München, Bayerische Staatsbibliothek, Clm 29265(7 fragment (olim Clm 29157 a.b); Bischoff, *Katalog*, 3369; Haucke, *Katalog*, 72. Digital edition at [urn:nbn:de:bvb:12-bsb00061139-3](https://nbn-resolving.org/urn:nbn:de:bvb:12-bsb00061139-3).

21 See A. Barratt, "Waste not, Want not: Manuscript Fragments in the Sir George Grey Special Collections, Auckland", *Parergon*, 32:2 (2015), 19–37, at 27–30.

to Auckland library in 1911.²² Despite a nineteenth-century English rebinding, the volumes in Auckland retain their fifteenth-century structure, including sewing guards which feature texts from Exodus, Leviticus, Numbers, Ezechiel, and Hosea. Barratt's research on this material concluded that these sewing guards were part of the same multi-volume Old Testament as is preserved in Clm 29260(1 and (2.

While the visible fragments in UCD preserve material from many of the books listed above, there is no overlap between them, except in one place, namely a text of Exodus that is preserved in both OFM XL 4 (III) and Clm 27286, one of the Kochel manuscripts. Even without this textual evidence, this manuscript is unlikely to have been the source of the guards in Dublin due to its different layout with two shorter columns (ca.30 lines) on each page.

The second Kochel manuscript, Clm 29265(7, and the fragments in Auckland and in Clm 29260(1 and (2 are laid out in a way that is more like that reconstructed for the Dublin material with two columns of 34–35 lines. While some observations are made below concerning which of these manuscripts the Dublin guards may be part of, the limited nature of the evidence makes any determination difficult. It is also worth bearing in mind the suggestion made by Rosamund McKitterick, based on a surviving list of books from the eleventh century, that Benediktbeuern and Kochel collaborated closely in the production of manuscripts, with both writing centres working together on a shared corpus of books.²³

The closest connection that can be established here, which indicates that some of the surviving fragments come not just from the same manuscript, but even from the same bifolium, is between two of the sewing guards in Dublin and two in Auckland. These come from two bifolia containing text from the end of Exodus and the beginning of Leviticus. These guards are written in the same script and share a close codicological relationship. The first bifolium (Bifolium 1) contained texts from Exodus 37–38 on the recto and verso

22 For the life of Henry Shaw, see D. Kerr, "Shaw, Henry", *Dictionary of New Zealand Biography*, 1996. *Te Ara - the Encyclopedia of New Zealand*, <https://teara.govt.nz/en/biographies/3s13/shaw-henry>.

23 R. McKitterick, "Nuns' scriptoria in England and Francia in the Eighth Century", *Francia* 19:1 (1992), 1–35.

of one of the leaves and Leviticus 8–10 on the adjoining one. So, for example, in OFM XL 4 (III), as noted above, the outside part of the guard between ff. 9v–10r contains columns with text from Ex 37.15; Ex 37.25; Lv 10.6; Lv 10.15, while in Auckland there is a guard with texts Ex 37.17; Ex 37.27–28; Lv 10.7–9; Lv 10.16–17. The second bifolium (Bifolium 2) featured text on one leaf from Exodus Chapter 40 on its recto and Leviticus Chapters 1–2 on its verso and from Leviticus Chapters 6–7 on the recto and verso of the other [Figure 4]. In this case, the sewing guards now in Auckland and Dublin were not only from the same bifolium but were originally directly adjacent to each other [Figure 8]. So, the first column in the first fragment in volume 4 in Auckland [Figure 5] is from Leviticus 1.10 *‘ret Immolabitque ad latus alta’* which is directly continued *‘ris quod respicit ad aquilonem coram Domino sanguinem vero illius fundent’* in column a of the two visible sides of the sewing guard in UCD OFM XL 4 (III) ff. 240v–241r [Figure 4]. Although column b is only partially preserved, the same pattern is evident for the other three columns of these guards; these contain text from Leviticus 2.3–4, Leviticus 6.17–18 and Leviticus 6.30, with an exact correspondence of line breaks.

The script of the Dublin and Auckland guards from the Pentateuch is like that preserved in Clm 29260(1 and (2 [Figure 6]. As Barratt noted in relation to Auckland, they are all thus members of Bischoff’s second group from the Benediktbeuern scriptorium, whose hand is characterized as a leftward leaning minuscule with some cursive and half cursive elements such as the cursive *ti* ligature.²⁴ The likelihood that these fragments all came from the same copy of the Old Testament is supported by codicological evidence.

The earliest material from the book of Leviticus in Munich is preserved on two partial bifolia in Clm 29260(1. These contain a range of texts from Leviticus 12–20. The first bifolium has text from Lv 12.8–13.9; 13.23–46 on one leaf and Lv 19.4–25 and Lv 19.28–20.13 on the other. The second bifolium features texts from Lv 14.36–15.5 and Lv 15.6–17.1 [Figure 6]. Between these is a missing bifolium containing text for the final verses Leviticus 13, most of Leviticus 14 and Leviticus 17–18. It is this bifolium that may have been used

²⁴ This δ-shaped *t* occurs in the word *viginti* from Ex 38.10 in column a of the inside part of strip 2 in the guard in OFM XL 4 (III) ff. 9–10.

to make sewing guards in Dublin (Bifolium 3), such as for example that between ff. 27–28 where there is visible text from Lv 13.55; Lv 14.8; Lv 14.17; Lv 14.29; Lv 17.7; Lv 17.15; Lv 18.12–14; Lv 18.26. The visible strips in Auckland demonstrate a similar relationship to the Munich material for later chapters in Leviticus. Auckland contains strips from a bifolium containing texts from Leviticus chapter 22 and Numbers chapter 3. This bifolium may have been the outermost of the original quire, containing inside it the bifolium in Munich that features text from Leviticus 23 and 24 and Numbers 1.49–3.8; the innermost bifolium was the other Leviticus bifolium that survives in Munich, containing text only from Leviticus: Lv 25.46–27.32.

The final two sewing guards in Dublin as well as the fragmentary guard with a running title only preserve text from the Minor Prophets: Joel, Micah, Nahum, Zachariah and Habakkuk. There are no fragments from these books preserved in Clm 29260(1 and (2. Texts from the prophets are preserved however in Clm 29265(7, the manuscript from Kochel which has a similar layout to the Dublin material. The possibility that this manuscript is the source for these two sewing guards in Dublin is strengthened by the preservation in the first of the Dublin guards of the uncial titles marking the transition between the books of Micah and Nahum. Similar transitions in alternating uncials of orange and green are present in Clm 29265(7 [Figure 7]. This manuscript also preserves running titles in the same script as that for the book of Joel visible in OFM XL 4 (III).

The main script of the sewing guards featuring the prophets in Dublin has a slightly different appearance to that used for the guards featuring the Pentateuch. The difference between the script is most evident for example in the form of the *g*: the top lobe is consistently left open in the Prophets fragments and is closed almost entirely in the sections from the Pentateuch. There is also a different habit in relation to abbreviation: the fragments from the Prophets use straight horizontal lines rather than short vertical strokes. In these features and in its general appearance, including the nature of the interlinear glossing, the main hand of the Dublin guards from the Minor Prophets resembles that in Clm 29265(7, the hand suggested by Bischoff as coming from Kochel, which he describes as related

but more conservative than the hand evident in some of the other manuscripts from Benediktbeuern at this time.²⁵

Although not addressed specifically by Professor Barratt in her work, the images that are available from Auckland containing text from the prophets seem to share features with the Dublin prophets-guards, pointing towards a provenance in the Kochel volume. It is likely that both the Dublin and Auckland volumes draw on material from the same two manuscripts — the first volume featuring texts from the Pentateuch which belong to Bischoff's second group, now preserved most fully in Clm 29260(1; the second volume featuring texts from the prophets which belongs to the fourth group from the scriptorium that is preserved most fully in Clm 29265(7).

The fragments point to two different quire structures. The Pentateuch fragments appear to have come from quaternions. Bifolia 1 and 2 were in the same gathering as the outermost and second-innermost bifolia; Bifolium 3 was second-innermost in the next quaternion (and the third-innermost and innermost bifolia are preserved in Clm 29260(1)); Bifolium 4 appears later on, as the innermost of its gathering. The fragments from the minor prophets are related as fifth- (Bifolium 5), fourth- (Bifolium 6), and third-innermost (Bifolium 7); the posterior leaf of Bifolium 5 (with Za 8) is about one leaf distant from the [leaf in Clm 29265\(7](#) that transmits Za 9.16–12.5; if the catchword on the verso is to be believed to signify the end of a gathering, this gathering of the minor prophets, at least, was composed of senions.²⁶

Although slight, the sewing guards in Dublin supplement existing evidence for the kind of books that were being both written and used in the first part of the ninth century in the monastery of Benediktbeuern and its related foundations.²⁷ These fragments' layout

25 See Bischoff, *Schreibschulen*, for the discussion of this script. On the decoration in Clm 29565(7 see K. Bierbrauer, *Die Ornamentik frühkarolingische Handschriften aus Bayern*, Munich 1979, 28–37.

26 I thank William Duba for this reconstructive work.

27 For general background see D. Ganz, "Carolingian Bibles", in *The New Cambridge History of the Bible*, ed. R. Marsden and E. A. Matter, Cambridge 2012, 325–337.

indicates that they come from multi-volume bibles.²⁸ They contain a relatively standard Vulgate text.²⁹ When decoration occurred, as is evident in Clm 27265(7 and the Dublin fragment, it was limited to initial letters with uncials both used for running titles and marking the transition between books. In terms of further research, there are undoubtedly many other parts of these bibles preserved as loose fragmentary material in the spines and covers of other incunabula from Benediktbeuern scattered in various repositories in Europe and abroad. The similar histories of both the Dublin and Auckland volumes in the period after the monastery's secularization points to the potential of surviving nineteenth-century auction catalogues as a source for identifying more such fragments, which shed light on the earliest days of the monastery's existence.

28 See J. Hemmerle, *Die Benediktinerabtei Benediktbeuern*, 61–67; B. Bischoff, *Die Südostdeutschen Schreibschulen*, 31; H. Hauke, *Katalog der lateinischen Fragmente*, 65.

29 For general background, see B. Fischer, *Lateinische Biblelhandschriften im frühen Mittelalter*, Freiburg im Breisgau 1985. He deals briefly with the fragments from Benediktbeuern on 189.

Binding Waste as Evidence for the Reconstruction of a Lost Aristotelian Manuscript

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Abstract: This note discusses the hypothetically reconstructed content of a fourteenth-century Latin manuscript of Aristotle's *Parva naturalia*, from which two bifolia survive as flyleaves in an incunable binding. The note argues that the lost manuscript contained a collection of Aristotelian treatises in combination with short texts by Avicenna and Thomas Aquinas, which had a limited circulation in German-speaking regions.

Keywords: Aristoteles Latinus, *Parva naturalia*, Avicenna, Thomas Aquinas

In the late medieval period, Aristotelian works undeniably were among the most widely disseminated Latin texts in manuscript form, especially since they were used in the educational system. Yet fragments from discarded Aristotelian manuscripts that are recycled in bindings of other books do not appear nearly as often as those of liturgical books, Bibles, and (canon) law. Therefore, the instances where Aristotelian waste is encountered deserve special attention. Mostly, the texts that were preserved on these fragments are well attested, although occasionally the discovery of a new witness for a rare text necessitates the revision of commonly accepted theories.¹

Two bifolia preserved in the binding of a folio-size incunable from the Universitäts- und Landesbibliothek in Darmstadt (shelfmark: INC IV 452) provide a unique witness to a collection of Aristotelian texts. The host volume was printed in 1483 by Ulrich Zell in Cologne and contains Nicolaus de Ausmo's *Supplementum*

¹ P. Beullens, "Robert Grosseteste's Translation of Simplicius's Commentary on Aristotle's *De caelo*: Tracking down a Second Manuscript and the Greek Model", *Mediterranea. International Journal on the Transfer of Knowledge* 8 (2023), 565–594.

summae Pisanellae and the *Canones poenitentiales* by Astesanus de Ast ([GW M26221](#); [ISTC in00065000](#)). The incunable's provenance can be traced back to the Benedictine abbey of Saint-Vitus in Gladbach, as the ex libris in an early-modern hand on the blank recto of the first leaf of the incunable proves: "Liber monasterij D. Viti martyris in Gladbach" (the last two words are crudely struck out but they can be easily deduced from the strokes of letters that remain visible above and below the ink blotch). The incunable was among the books that were confiscated in the early days of 1795 when the abbey was visited by a commission of French revolutionaries. The books that they seized were duly listed in an inventory and subsequently transferred to Paris or to a local storage, whence some arrived along murky paths into the hands of a few collectors.²

According to the catalogue of the incunables with a Gladbach provenance published in 1998, the interiors of the covers were lined with fragments of manuscripts ("Innendeckel mit Handschriftenfragmenten beklebt").³ To judge from the images available on the website of the Universitäts- und Landesbibliothek in Darmstadt, the leaves originally were pastedowns that have been detached from the boards, since the discoloured sections at the edges clearly reveal that they were glued under the folds of the leather board covers for a considerable period of time.⁴ On the recto of the front flyleaf, a modern hand in pencil wrote down references for the edition to five incunable catalogues.⁵

2 H. Knaus, "Sieben Gladbacher Handschriften in Darmstadt", in *Studien zur Handschriftenkunde. Ausgewählte Aufsätze*, ed. G. Achten, T. Knaus, and K.H. Staub, Munich 1992, 73–83. The incunable is item 11 in the list reproduced on pages 82–83.

3 B. Veit, B. Schürmann, E. Haas, and E. M. Wermter, *Die Drucke von St. Vitus*, Cologne 1998, 160, no. 383.

4 Reproduction available at: <https://tudigit.ulb.tu-darmstadt.de/show/inc-iv-452>.

5 The references are: Cop. 11.785 = W. A. Copinger, *Supplement to Hain's Repertorium Bibliographicum*, Part 11, Volume 1, London 1898, 88, no. 785; Pell. 1637 = M. Pellechet, *Catalogue général des incunables des bibliothèques publiques de France*, v. 1, Paris 1897, 382, no. 1637; Pr. 904 = Robert Proctor, *An Index to the Early Printed Books in the British Museum: From the Invention of Printing to the Year MD. With Notes of Those in the Bodleian Library*, Part 1, Volume 1, London 1898, 78, no. 904; BiblC. 1,197 = *Catalogue of Books Printed in the*

The flyleaves are bifolia taken from an early-fourteenth-century manuscript in a smallish Gothic hand tending towards the cursive. The ink ruling of the pages is careful and clearly visible. The text is written in single columns with lines varying between 25 and 27 per page. It cannot be excluded that the variation was caused by the irregular trimming of the bifolia to conform to the size of the boards, although the text blocks look overall completely preserved. Several spaces for three-line-high initials were left open but have not been filled in. Various nearly contemporary hands made annotations in the margins and between the lines of the text.

For reasons that will become apparent further below, I assume that the bifolium that currently forms the incunable's rear flyleaf (henceforth: DAII) was taken from a different quire in the original manuscript than the quire from which the front flyleaf (DAI) originates, probably from the preceding one. The two bifolia are so positioned that the hair side faces the cover boards and the flesh side faces the first and last paper leaves of the incunable.

The hair side formed the outside of bifolium DAII, which contains Aristotle's *De longitudine et breuitate vitae* in the *translatio nova* from Greek by William of Moerbeke (end of chapter 3 to the beginning of chapter 6, 465b29–467a7) on its first half, while the other half preserves the final sections from Costa ben Luca's *De differentia spiritus et animae* translated from Arabic by John of Seville (137.10 to 139.16, ed. Barach).⁶ The end of the latter treatise is not indicated with a concluding formula or colophon. It is followed by 32 verses presented in two columns and written by a different contemporary scribe. The manuscript's ruling was adjusted to facilitate the layout of the verses, which were probably intended to fill out the unused writing surface. The verses can be identified as a selection from the *Carmen de pulsum* by Giles of Corbeil (selected in particular from the passage on pages 33–35, ed. Choulant).⁷

xvth Century Now in the British Museum. Part 1, London 1908, 197; VK. 223 = E. Voulliéme, *Der Buchdruck Kölns bis zum Ende des fünfzehnten Jahrhunderts. Ein Beitrag zur Inkunabelbibliographie*, Bonn 1903, 96–97, no. 223.

6 C.S. Barach, ed., *Excerpta e libro Alfredi Anglici De motu cordis, item Costaben-Lucae De differentia animae et spiritus liber translatus a Johanne Hispanensi*, Innsbruck 1878.

7 J.L. Choulant, *Aegidii Corboliensis Carmina Medica*, Leipzig 1826.

If only the single bifolium DAII had been preserved, it would have been likely identified as coming from a standard *corpus recentius* of Aristotelian works, the form in which the two treatises were most commonly transmitted.⁸ The content of the bifolium that currently serves as the front flyleaf to the incunable (DAI), however, requires a reassessment of the initial impression gained on the basis of its rear counterpart.

Bifolium DAI originally had its flesh side facing outwards. Its first leaf is covered with the opening section of Thomas Aquinas's *De mixtione elementorum*.⁹ On the inside recto, we find the end of Avicenna's *De diluviis*, which is the concluding chapter of his *Meteorology* that circulated separately in a Latin translation (307,11–308,18, ed. Alonso).¹⁰ Finally, the verso of the last leaf is completely filled by a short question with the incipit "Forma multiplex habet", which is known under the title *De distinctione formarum* and is sometimes attributed to Thomas Aquinas.

Although it is not totally unexpected to find these texts in an Aristotelian context, the probability of discovering them in binding waste is significantly lower. According to the critical edition of *De mixtione elementorum*, more than one hundred manuscripts that contain this short treatise are extant,¹¹ but the two other texts are significantly less widely attested. Only twelve manuscripts of the Latin

8 P. Beullens and P. De Leemans, "Aristote à Paris: le système de la *pecia* et les traductions de Guillaume de Moerbeke", *Recherches de théologie et philosophie médiévales* 75 (2008), 87–135.

9 *Sancti Thomae de Aquino Opera omnia iussu Leonis XIII P.M. edita*, tomus XLIII: *De principiis naturae*, *De aeternitate mundi*, *De motu cordis*, *De mixtione elementorum*, *De operationibus occultis naturae*, *De iudiciis astrorum*, *De sortibus*, *De unitate intellectus*, *De ente et essentia*, *De fallaciis*, *De propositionibus modalibus*, cura et studio Fratrum Praedicatorum, Rome 1976, 133–157.

10 M. Alonso Alonso, "Homenaje a Avicenna en su milenario. Las traducciones de Juan González de Burgos y Salomon", *Al-Andalus* 14 (1949), 291–319. After the completion of this note, a new edition of the translation was published: D.N. Hasse, "Avicenna's *On Floods* (*De diluviis*) in Latin Translation: Critical Edition with an English Translation of the Arabic", in *Mastering Nature in the Medieval Arabic and Latin Worlds. Studies in Heritage and Transfer of Arabic Science in Honour of Charles Burnett*, ed. A. Giletti, and D.N. Hasse, Turnhout 2023.

11 *Sancti Thomae de Aquino Opera*, tomus XLIII, 137–143.

version of Avicenna's *De diluviis* are documented.¹² The question *De distinctione formarum* is known to be preserved in no more than four manuscripts, although more copies of the text may have been overlooked by cataloguers due to its shortness:

- Paris, Bibliothèque nationale de France, latin 6569, f. 125r¹³
- Praha, Knihovna Metropolitní kapituly, B. LXXI (381), f. 60v¹⁴
- Erfurt, Bibliotheca Amploniana, 4^o 15, f. 48v¹⁵
- Chicago, Newberry Library, Case MS 23, f. 81r¹⁶

Of these four manuscripts, the last two contain the same three texts that are found on bifolium DA1. The three witnesses share some important characteristics: they all date from the first half of the fourteenth century and come from a German-Austrian environment, since the last manuscript of the list was known before its purchase by the Newberry Library in 1938 as MS Melk, Benediktinerstift, 389.

In particular, the similarity between the Darmstadt flyleaves and the Newberry manuscript is helpful to understand what the original manuscript to which DA1-II belonged might have looked like. Just like the content of DA1, the last three items 25–27 in the Newberry manuscript are *De mixtione elementorum*, *De distinctione*

- 12 S. Di Donato, “Les trois traductions latines de la *Météorologie* d’Avicenne: notes pour l’histoire du texte”, *Documenti e studi sulla tradizione filosofica medievale* 28 (2017), 331–348, list of manuscripts 335, n.11. To the eleven manuscripts of that list has to be added MS Innsbruck, Universitäts- und Landesbibliothek Tirol, 302, see W. Neuhauser and L. Subarič, *Katalog der Handschriften der Universitätsbibliothek Innsbruck*, v. 4, Wien 2005, 34–35. The text is also cited among the (dubious) works of Giles of Rome, see J.R. Eastman, “Die Werke des Aegidius Romanus”, *Augustiniana* 44 (1994), 209–231, title on 226, no. 85.
- 13 O. Weijers, “Les gloses sur le *Liber de causis* dans les manuscrits parisiens”, in *Reading Proclus and the Book of Causes*, Volume 1: *Western Scholarly Networks and Debates*, ed. D. Calma, Leiden 2019, 152–179, description of the manuscript 172. The question was added by a later hand in an open space.
- 14 M. Grabmann, *Die Werke des Hl. Thomas von Aquin. Eine literarhistorische Untersuchung und Einführung*, 3rd ed., Münster 1949, 208.
- 15 W. Schum, *Beschreibendes Verzeichnis der Amplonianischen Handschriften-Sammlung zu Erfurt*, Berlin 1887, 296.
- 16 P. Saenger, *A Catalogue of the Pre-1500 Western Manuscript Books at the Newberry Library*, Chicago 1989, 39–42.

formarum, and *De diluviis*. Although the order in DA_I is slightly different, since the Avicenna text precedes the question on forms, it is quite conceivable that *De distinctione formarum* was the final text in the original manuscript. The observation that the last line of the posterior verso of DA_I is left blank and that there is no reference whatsoever to a following text may support that hypothesis. However, as Bill Duba kindly pointed out to me, the missing sections at the end of *De mixtione elementorum* and the beginning of *De diluviis* count about 500 words, while one leaf of DA_I contains more than 800 words. If we accept that flyleaf DA_I was produced from the outer bifolium of the lost manuscript's last quire, that quire must have held another text that filled at least three pages if the last quire was a binio, and possibly more leaves if it was larger.

Is it possible to hypothesize on the position of the bifolium that is now DA_{II} in relation to the last quire? For this purpose, the comparison with the Newberry manuscript might turn out to be equally useful. The 24th item of that codex is the Latin translation of *De differentia spiritus et animae*, the same text that is preserved on DA_{II}. The other partially preserved text on the bifolium, the *translatio nova* of Aristotle's *De longitudine et brevitae vitae*, is also present in the Newberry manuscript, but its position there as item 14 is at a considerable distance towards the front of the volume.

That arrangement of the Newberry codex leaves room for some reasoning by analogy to reconstruct plausibly the composition of the original quire to which DA_{II} belonged. The open space on DA_{IV}, which was later filled with the medical verses from the work of Giles of Corbeil, likely was the last page of a quire. For that reason, the scribe decided to leave some writing surface unused and start the copying of the following treatise at the top of the next page — all the more so because an open space for a rubricated initial was foreseen, which eventually was not executed. In that scenario, there is no objection to accept that the three treatises on the final bifolium of the original manuscript were, just like in the Newberry manuscript, immediately preceded by *De differentia spiritus et animae*.

Can we draw the analogy further and conjecture that, just like in the Newberry manuscript, eleven treatises in all were contained between *De longitudine et brevitae vitae* and *De differentia spiritus*

et animae in the quire of which DAII was the outer bifolium? A quire with that content must have had a size that made it technically unmanageable. However, it is well known that the *Parva naturalia*, among which both *De differentia spiritus et animae* and *De longitudine et breuitate vitae* were transmitted, were connected in a very loose and unspecified order.¹⁷ As a result, this quire as well as the preceding one(s) may have contained any number of treatises from the *Parva naturalia*, in a formation more or less comparable to the composition of the Newberry manuscript. Incidentally, although the manuscript from the Amploniana is less markedly similar in its content to DAi-II, it also contains a considerable number of Aristotelian *Parva naturalia*.

From the analysis of the Darmstadt fragments and the comparison with extant codices that have a comparable content, we may arrive at the following tentative conclusions. In the first half of the fourteenth century, a limited branch of the tradition combined three short Latin texts, Aquinas's *De mixtione elementorum*, Avicenna's *De diluviis*, and the question *De distinctione formarum*, and transmitted them in connection with a selection of Aristotelian *Parva naturalia*. The manuscripts circulated in German-speaking regions, although the collection in that form possibly originated elsewhere. Evidence for the confirmation or refutation of the hypothesis may lie in the textual variants or in the annotations of the Darmstadt fragments, which I did not examine for this note.¹⁸

¹⁷ P. Beullens and P. De Leemans, "Aristote à Paris", 125–128.

¹⁸ The research for this article was carried out as part of my postdoctoral fellowship project Mind Your Words! The Role of Medieval Translations in the History of Concepts, funded by the Research Foundation – Flanders (12W5722N).

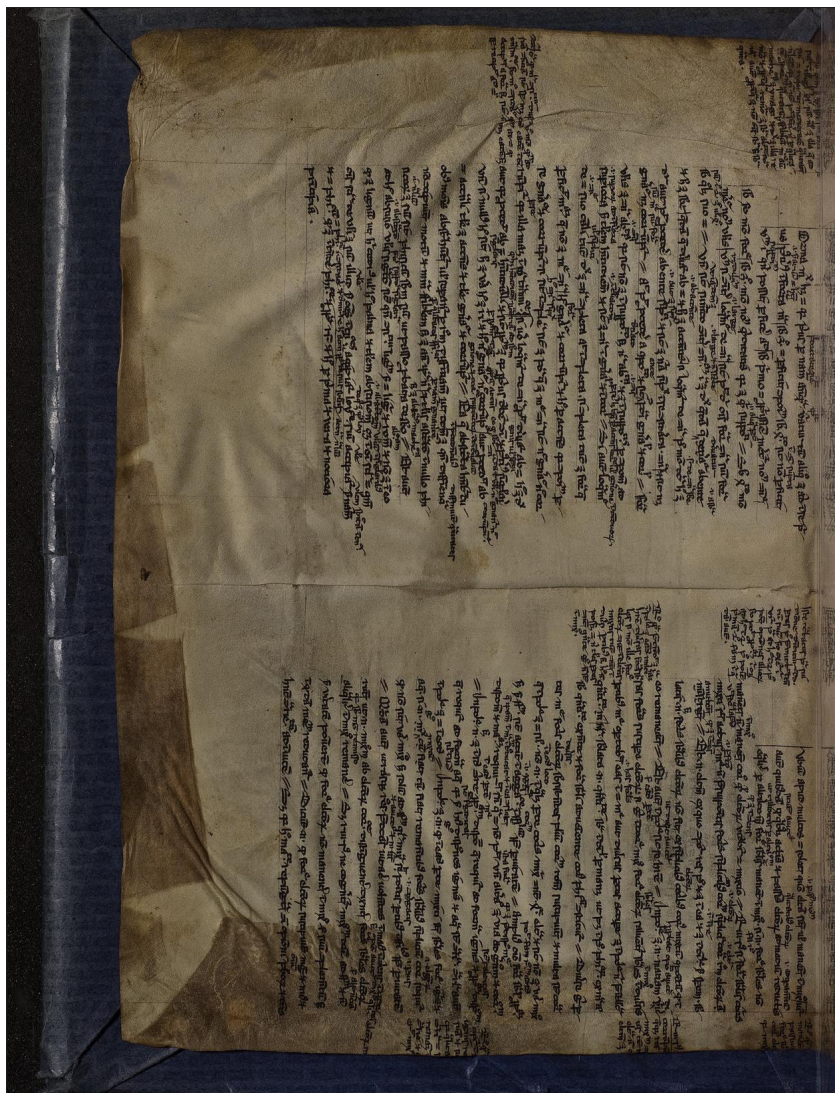


Figure 1: Darmstadt, Universitäts- und Landesbibliothek, INC IV 452, front flyleaf: DA1, outwards-facing side (e0004)



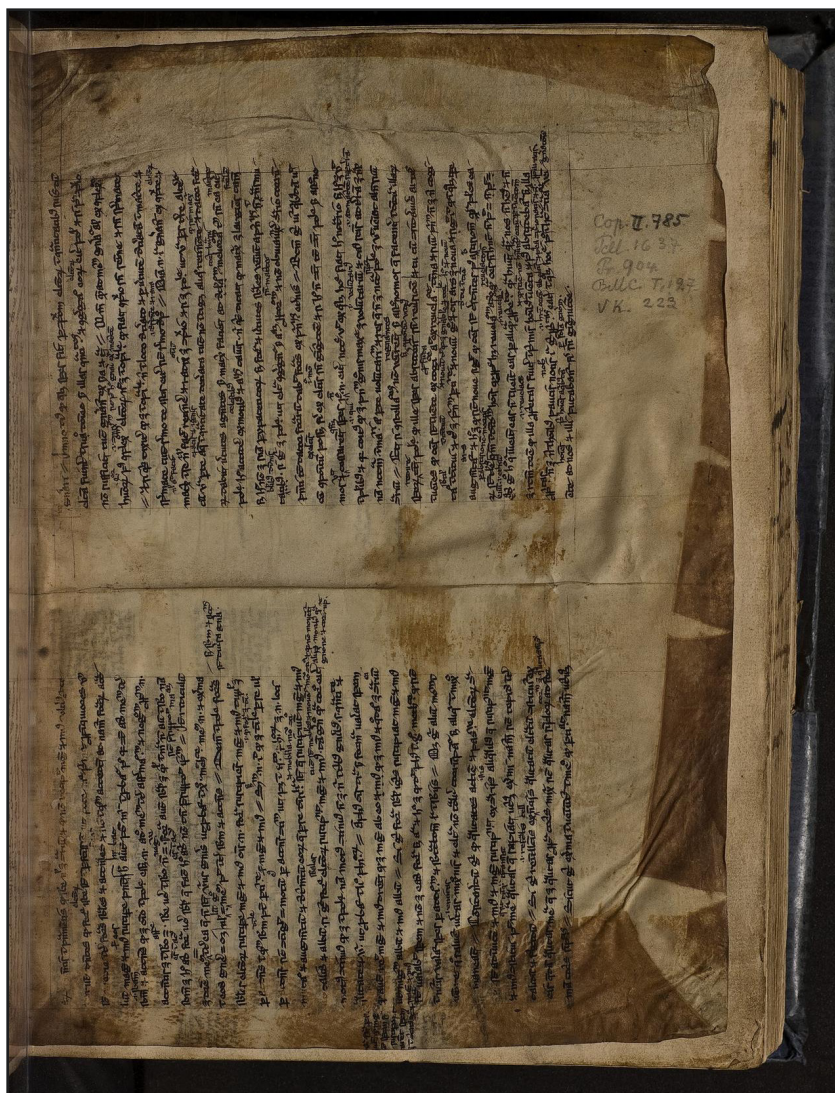


Figure 2: Darmstadt, Universitäts- und Landesbibliothek, INC iv 452, front flyleaf: DA1, inwards-facing side (e0003)



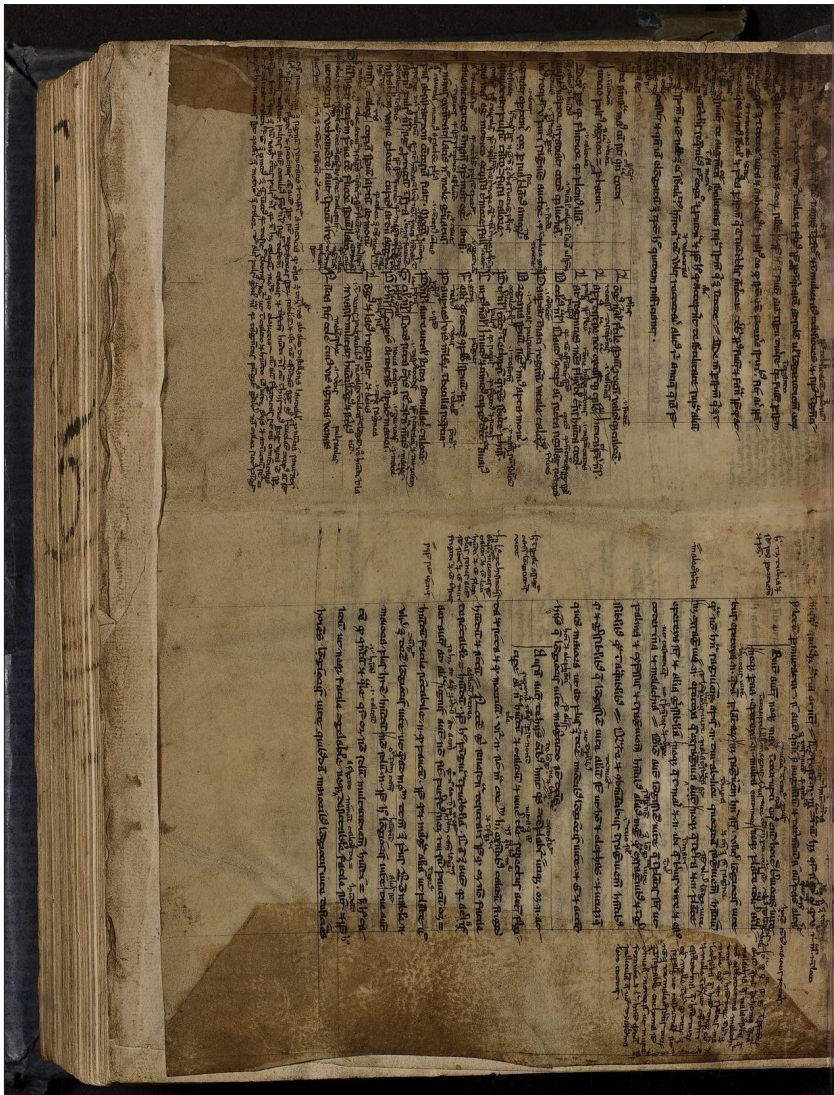


Figure 3: Darmstadt, Universitäts- und Landesbibliothek, INC IV 452, back flyleaf: DAII, outwards-facing side (e0006)



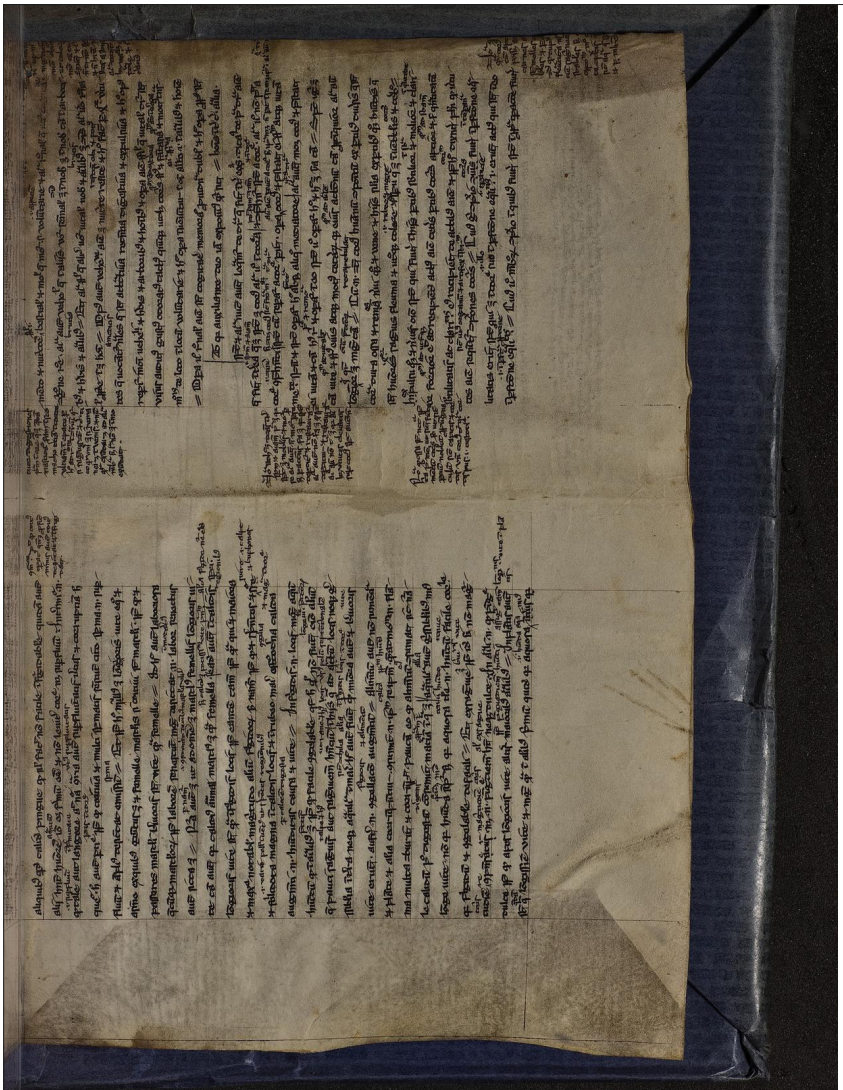


Figure 4: Darmstadt, Universitäts- und Landesbibliothek, INC iv 452, back flyleaf: DA11, inwards-facing side (e0005)



A Folio from the *Somnium Viridarii*

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Abstract: The auction of a folio from an otherwise unidentified manuscript of the *Somnium Viridarii* coincides with a recent re-examination of the textual tradition, thus providing an opportunity to position the fragment within that tradition and to determine its philological value. The *Somnium Viridarii*, a dialogue on papal vs. royal power surviving in eight other manuscripts, was completed in 1376 by Évrart de Trémaugon and quickly translated into French for King Charles V as *Le songe du Vergier*, extant in at least 25 medieval witnesses. The critical edition of the section contained in the fragment from the oldest known manuscript reveals that the folio is independent from the complete codices and contains a text that is at least as clean as the best of those other copies.

Keywords: *Somnium Viridarii*, *Le songe du Vergier*, political thought, King Charles V, Évrart de Trémaugon

On 12 December 2022 Christie's sold at auction a leaf from a manuscript that their expert, Eugenio Donadoni, had dated to the last third of the fourteenth century.¹ Roberto Lambertini and I had recently published an analysis of the manuscript tradition with possible stemma for the text contained in the codex whence came the folio, the *Somnium Viridarii*, later translated into French as the *Le songe du Vergier*.² Following her two-volume critical edition of

* I thank the two anonymous referees for their helpful comments, Ziang Chen and Roberto Lambertini for trying to locate the source of the section of the *Somnium Viridarii* edited below, and William Duba.

1 "The Collection of Marvin L. Colker", Christie's, online auction 21173, <https://onlineonly.christies.com/s/collection-marvin-l-colker/evrart-de-tremaugon-103/171575>.

2 R. Lambertini and C. Schabel, "A New Source for the *Somnium Viridarii*: Pierre Ceffons's *Parvum Decretum*", *Mediaeval Studies* 83 (2021), 87–118, at 105–116.

the French version, which appeared in 1982, Marion Schnerb-Lièvre brought out a critical edition of the Latin text in two volumes in 1993–1995.³ According to Donadoni's notice, the Christie's folio is from the "earliest surviving witness to the Latin version of the *Songe du Vergier* – the monumental treatise of political doctrine drawn up at the request of King Charles V of France," which French version itself survives in at minimum 25 medieval manuscripts.

One can add to Donadoni's excellent online description of the leaf. There no longer seems to be any hesitation among scholars about the authorship of Évrart de Trémaugon.⁴ Nor is there any doubt that the Latin text was the basis for the French translation,⁵ because the Latin text is a compilation, often verbatim, from previous Latin works. The folio is described as decorated, on vellum, from France, the last third of the fourteenth century, but since the text itself was not completed until 26 May 1376, we can safely say that the leaf is from the last quarter of the century. Donadoni rightly reports that Schnerb-Lièvre knew of just seven manuscripts (and three early prints) in 1993–1995, but one can add that in 1998 Jürgen Miethke identified an eighth manuscript in Lisbon.⁶ According to Schnerb-Lièvre and Miethke, none of the eight manuscripts known to contain more or less the complete text date to before 1400. While Schnerb-Lièvre dated her earliest manuscript, Paris, Bibliothèque Mazarine, 3522, to the fifteenth century, Donadoni declares that the Mazarine codex is "datable to the final years of the 14th century," which, given his dating of the folio to the "final third [of the] 14th century," is vague enough to call into question inadvertently

3 *Somnium Viridarii*, ed. M. Schnerb-Lièvre, 2 vols. (*Sources d'histoire médiévale*), Paris 1993–1995; *Le Songe du Vergier*, édité d'après le manuscrit Royal 19 C IV de la British Library, ed. M. Schnerb-Lièvre, 2 vols. (*Sources d'histoire médiévale*), Paris 1982.

4 The description elaborates: "Authorship is uncertain (it has been variously attributed to Philippe de Mézières and Charles de Louviers), but academic consensus has coalesced around Évrart de Trémaugon."

5 According to Donadoni, "The Latin version likely predated and served as a model for the 1378 French edition (Charles V's own manuscript, now London, British Library, Royal 19 C IV)."

6 J. Miethke, "Die *Octo Quaestiones* Wilhelms von Ockham in zwei unbeachteten Handschriften in Lissabon und Tübingen", *Franciscan Studies* 56 (1998), 291–305, at 297–298.

the assertion that “The present fragment is earlier than the Mazarine copy.” Images of both sides of the folio are supplied online, numbered “1” and “2,” but Christie’s has them reversed, verso–recto instead of recto–verso. Donadoni’s description itself has it right:

247 x 151mm. 44 lines in two columns, ruled space: 203 x 59mm., the text from Book I, CXXXVII–CXL, beginning ‘[...] Ade debeamus dampnari [...]’ and ending ‘ex antiqua c[on]suetudi[n]e’, initials and headers alternately in red or blue with blue or red penwork, rubrics in red, line-fillers in red and blue (one margin tightly cropped but not affecting text, some staining from use as a binding fragment).

According to Donadoni’s notice, the folio is “Colker MS 482; acquired in 1998 from Maggs.” One would like to know whether the manuscript whence the folio came was deliberately mutilated and, if so, under what circumstances. (The folio seems to have been folded widthwise, maybe twice.) Some of the other manuscripts of the *Somnium Viridarii* contain beautiful illuminations, and judging from the Christie’s folio, this manuscript may have been the most lavishly illustrated (see Figures 1 and 2). It is hard to believe that these illustrations were ever discarded. The philological value of the manuscript depends on its position in the tradition of the important work, for, in Donadoni’s words, “The *Somnium viridarii*, or *Songe du vergier*, is a monumental work of political doctrine structured as a dialogue between advocates of temporal and ecclesiastical power, represented by a knight, ‘miles’, and a cleric, ‘clericus.’”

For the time being, I will try to fit the text of the folio into the manuscript tradition and possible stemma. As part of the project to edit the *Opera Omnia* of the Cistercian Pierre Ceffons, a Parisian theologian whose known works date to ca. 1348–1354, I discovered that about 10,000 words of his political treatise entitled the *Parvum Decretum de potestate sancti Petri* were incorporated mostly verbatim into the *Somnium Viridarii*, making the *Parvum Decretum* one of the most important sources for the compilation. In preparing the critical edition of the *Parvum Decretum* with Roberto Lambertini,

while he focused on the sources that Pierre Ceffons employed and how those sources and Ceffons' own words passed into the *Somnium Viridarii*,⁷ I decided to critically edit the pertinent passages in the *Somnium Viridarii* in order to determine the position of Évrart de Trémaugon's Ceffons manuscript in the *Parvum Decretum* tradition, if he did not have access to one of the four extant codices.

Marion Schnerb-Lièvre was primarily interested in the French *Le songe du Vergier*, which she edited first, and only secondarily in the Latin original, the *Somnium Viridarii*. Her aim in editing the *Somnium Viridarii* was to print the text that was closest to the French translation, which would not necessarily result in a reconstruction of the earliest Latin version, especially since she dated none of the surviving manuscripts to the fourteenth century. Without much discussion of her methodology in investigating the manuscript tradition, she chose to collate the three Parisian manuscripts, listed here with her dating:

A = Paris, Bibliothèque nationale de France, latin 3459A (1482)

C = Paris, Bibliothèque nationale de France, latin 3180C (16th century)

M = Paris, Bibliothèque Mazarine, 3522 (early 15th century)

Schnerb-Lièvre also asserted that the other four manuscripts known to her mostly agreed with C. She chose M as her base manuscript, since she deemed it to have the text closest to the French translation. She only rarely reported the variants of A and C, mainly using them to correct M, and de facto she did not note all of M's variants.

Although problems with Schnerb-Lièvre's goals, methodology, and execution had been pointed out,⁸ my full collation of the eight witnesses for the 10,000 words coming from the *Parvum Decretum* revealed that her choice of ACM was a wise one: they come from three separate branches of the stemma; A and the inferior printed

7 The first result was C. Schabel and R. Lambertini, "New Evidence for the Reception of the Michaelist Treatise *Allegationes de potestate imperiali* (1338–39): The *Parvum Decretum* of Pierre Ceffons and the *Somnium Viridarii*", *Picenum Seraphicum* 34 (2020), 173–178.

8 See the review of H. Kaminsky, *Speculum* 71 (1996), 1015–1019.

editions belong to one; *M* belongs to another and the Lisbon manuscript likely derives from it; and *C* belongs to the same family as the remaining four witnesses, it being the best.⁹

My study of the extensive Ceffons section included all the pertinent segments of manuscripts and prints, but it is unlikely that the tradition shifts for the passage contained in the Christie's folio. Thus I have collated that folio, with the siglum *F* for "fragment," against *ACM* (*AC* online on Gallica, *M in situ*). The folio begins near the end of book I, chapter CXXXVII (page 177 of the edition), and ends near the start of chapter CXL (page 180). These chapters correspond to chapters CLIX–CLX and CXXXV–CXXXVI of *Le songe du Vergier*. Thus far no tacit source has yet been found for this section, although perhaps it was a fourteenth-century follower of Thomas Aquinas.

In the text below, I ignore the paragraphing and punctuation in the edition of Marion Schnerb-Lièvre, orthography has been standardized and classicized, scribal corrections except for *F*'s are not reported if they do not coincide with other variants, the difference between *igitur* and *ergo* is not noted, and minor variants (even in *M*, not noted by Schnerb-Lièvre) in abbreviated citations of legal texts and in the textual divisions are passed over. I have accepted the legal references as in Schnerb-Lièvre, but usually put them inside parentheses, in part because elsewhere these are often Évrart de Trémaugon's additions to his sources.

Schnerb-Lièvre recorded just 10 variants in this section for *ACM*, but a full apparatus of different readings in *ACM* would have included around 60, and the collation of *F* brings that total close to 70. *Ceteris paribus*, on the basis of chronology we might guess that *F* would be the best witness, followed by *M*, *A*, and *C*. This may be borne out in variants that are present in this fragment: *C* reads against *AFM* 21 times, *A* reads against *CFM* on 16 occasions, *M* goes against *ACF* 11 times, and *F* opposes *ACM* 8 times, although *F* shares a couple of errors with *A* or *C*. On this limited basis, *F* appears to represent another independent branch of the stemma, as good as *M*, the base manuscript for the existing critical edition. If more leaves

9 Lambertini and Schabel, "A New Source for the *Somnium Viridarii*", 115–118.

of the manuscript whence *F* came can be recovered, they would contribute to an improved edition of the *Somnium Viridarii*.

Somnium Viridarii I, cc. 137–140

<Quid sit minus malum in principe, vel quod habeat in se nimiam clementiam vel nimiam iustitiam quae declinet ad tyrannidem?>

[F ra] Adae debebamus dampnari, nec poteramus reparari nisi per nimiam Christi clementiam. Igitur clementia magis eligenda.

Miles, <capitulum> CXXXVIII: Contrarium videretur verius: quanto 5
aliquid est melius, tanto magis expedit, [A 111v] quamvis excedat a
suis terminis, tendens ad extremum, quam expediat illud quod non
est de se ita bonum, si similiter declinet a suo gradu. Sed iustitia est
huiusmodi, quia sine ea nullus potest secure in civitate remanere, et
ipsa sublata de medio, omnia mala committuntur (in *Aut. Ut iudices* 10
sine quoquo suffragio, [§] *Hoc quoque, et in prooemio Decretalium*);
non sic de clementia. Ergo iustitia in suo debito gradu magis expedit
quam clementia; ergo si excedat, ceteris paribus, magis expedit.

Secundo, dicit Philosophus quod “iustitia docet [C 90r] regulam 15
recte agibilium”; non sic de clementia; ergo. [Ed. 178]

Tertio, sicut bonum publicum praecellit bonum privatum (VII,
q. I, c. Scias), sic legalis iustitia praecellit particulares virtutes, et
hoc est quod dicit Philosophus, VI *Ethicorum*, quod “praeclarissima
virtutum est iustitia.” Et hoc idem voluit canon cum dicit: “Sum-
mum in rebus est iustitia colere” (XII, *q. II, c. Cum devotissimam*). 20
Apparet igitur quod ista virtus quae est iustitia, dum est in debito
gradu suo – non dico punctuali, sed habita consideratione persona-
rum secundum gradum et gradum (ff. *De muneribus et honoribus*,
l. Ut gradatim; VIII, *q. I, c. Licet*) – praecellat alias virtutes morales.

3 debebamus] debemus M (+ Ed.) 4 christi clementiam] tr. A | igitur clementia
magis eligenda] magis ergo eligenda etc. C 5 videretur] videtur C 9 secure in
civitate remanere] in civitate secure manere M (+ Ed.) 10 ut] om. FM 11 decre-
talium] decretalis AF; decret' M 13 paribus] om. A 14 dicit] om. C 15 ergo]
etc. add. AC 16 praecellit] excellit M (+ Ed.) 17 legalis] regalis C 19 cum dicit]
om. A | summum] bonum add. C 20 iustitia] iustitiam C | colere] colore AF
23 et gradum] om. hom. C 24 praecellat] om. A; praecellit C | virtutes] virtute M

25 Sequitur quod si excedat ab illo gradu, considerando tamen culpam in puniendo, ut infra declarabo, quod debeat praecellere alias virtutes etiam a recto gradu deviantes – dico ceteris paribus, quia sic procedit [*F rb*] quaestio.

Quarto, per nimiam clementiam contemnitur commune bonum, ex cuius contemptu omnia mala oriuntur (sumpto generali argumento [*extra.*] *De constitutionibus*, c. *Nam concupiscentiam*), quia contemnitur iustitia. Ergo nimia iustitia est praeferenda [*A 112r*] nimiae clementiae.

Hic attendendum quod clementia denotat quandam animi levitatem circa diminutionem poenarum. Unde ipsa dulcedo affectus inclinans hominem ad mitigationem pertinet ad clementiam et concernit actum interiorem hominis (*l. Respiciendum*, ff. *De poenis*; *XLV di.*, c. *Disciplina*), et tunc convenit cum misericordia, et videntur quasi synonyma. Et talis clementia, quae est mixta cum iustitia, est
40 laudabilis, ut in iuribus allegatis.

Sed est alia clementia sine iustitia, et talis abusive loquendo dicitur clementia, quia omnino deviat a iustitia. Et talis reprobat in iure (*l. Eleganter*, § *Idem. Labeo*, ff. *De dolo*; *l. Si hominem*, [*C 90v*] ff. *Depositi*).

45 Praeterea, est reperire saevitiam, quae vocatur ‘feritas’ seu ‘ferocitas’ “a feris bestiis” que dicuntur saevae (ff. *De postulando*, *l. prima*, § *Bestias*). Hae enim ferae nocent hominibus et eorum cadaveribus pascuntur. Quibus non immerito comparantur saevi principes et iudices qui in poenis infligendis nullam ponderant culpam, sed so-
50 lam delectationem in hominum cruciatu et tormentis, quia qui non facit decentia homini rationali non meretur dici homo, sed bestia (in *Aut. De monachis*, in principio glosae [*sup. v.*] *decentem*). [*Ed. 179*] Et hoc provenit eis ex quadam assuefactione seu corruptione naturae, sicut et aliae affectiones bestiales (*l. Nemo*, C. *De episcopali audien-*
55 *tia*; [*Aut.*] *Ut non luxurietur contra naturam*, [*F va*] *collatione VI*;

30 ex] est *F* 34 hic] huic *A* 35 dulcedo] est *add. C* | affectus] effectus *F*
36 pertinet] pertinens *C* 41 sine] sive *M (+ Ed.)* | talis] est abusiva seu *add. A*
43 idem] quod *C* | labeo] habeo *a.c. s.l. A*; ?abeo *C*; habeo *F* 46 feris] feriis *A* |
postulando] penis *C* | prima] persona *M* 47 hae] hee *codd.*; hec *Ed.* 50 homi-
num] hominis *C* 51 sed] immo *A* 54 affectiones bestiales] effectiones bestias *F*

xii, q. i, c. Omnis aetas). Nam secundum quod dicit Philosophus, *ii Ethicorum*: “Ex assuefactione nobis virtutes insunt.” Quod pulchre deducit Gregorius (*c. Dum sanctam, De paenitentia, di. ii*), nam primo herba crescit, [A 112v] deinde spicam producit, postea stipulam et granum. Sic homo ex assuefactione gradatim efficitur virtuosus 60 et per contrariam assuefactionem mali redditur malus et vitiosus.

Sed opponitur clementiae secundo modo sumptae, quia est quodam modo bestialis in suo genere, sicut et ista, ut est supra deductum.

Est etiam crudelitas, “quae a ‘cruditate’ dicitur,” nam sicut ea 65 quae sunt bene decocta in genere suo consueverunt habere suavem saporem, cruda autem asperum et amarum, sic clementia permixta cum iustitia dulcis est et suavis, crudelitas, quia non est permixta cum clementia, cruda et aspera, ponderat tamen culpam puniendi, sed excessive et ultra modum. Et sic discrepat a saevitia, quae 70 non considerat culpam in puniendo. Et opponitur ista crudelitas clementiae primo modo sumptae tanquam asperum suavi, ut est probatum. Procedit ergo quaestio in clementia primo modo sumpta, dum excedit a suis terminis declinando ad secundam clementiam, quae bestialis est. Talis clementia sic excedens potest vocari ‘nimia 75 clementia’, ut in quaestione proposita.

Procedit ex alia parte in crudelitate, quae considerat culpam puniendi, excessive tamen. Et [C 91r] talis crudelitas etiam potest ‘nimia iustitia’ nuncupari.

Quibus praemissis pro evidentia terminorum, eligo illam par- 80 tem: quod minus damnosum sit rei publicae quod princeps habeat nimiam iustitiam in se, et hoc [F vb] rationibus pro parte ista allegatis.

58 sanctam] scientiam *codd.* (sanctam *Ed.*) 61 mali] *om.* C 65 cruditate] crudelitate A 66 consueverunt] *p.c. A*; constituerunt *F* | suavem] bonum C 67 asperum et amarum] asperam (+ A) amaram (*a.c. A*) C 68 cum] clementia *add. sed del. F* 69 puniendi] puniendo C 71 considerat] *a.c. A*; ponderat *p.c. s.l. A*; ponderat *M* 72 modo] *om.* A 73 primo] secundo *M* 74 secundam] secundum *F* 75 bestialis est] *tr. M* (+ *Ed.*); et *add. Ed.* 77 parte] iustitia *add. C* 78 etiam potest] potest *a.c. s.l. A*; *tr. AC* 80 terminorum] quaestionis C 82 ista] illa A

Non obstat lex *Imperialis* in contrarium allegata, quia ipsamet
 85 videtur respondere et solvere. Verum enim est quod Christi sumus
 imitatores in terris in quantum [A 113r] naturae nostrae fuit possi-
 bile, ut ibi, non in omnibus, nam *iudicia Dei abyssus multa*, ut in
 Psalmo. Nec tanta posset esse similitudo Creatoris ad creaturam
 quin maior sit dissimilitudo notanda (c. *Damnamus, ultra medium,*
 90 *extra. De summa Trinitate; c. Gaudemus, [extra.] De divorciis*).

Et praeterea, illa Christi clementia potest intelligi de clementia
 permixta cum iustitia, et hoc vult dicere Psalmista: *Virga tua et*
baculus tuus, ipsa me consolata sunt,” transumptive (XLV di., c. *Di-*
sciplina). [Ed. 180]

95 Clericus, capitulum CXXXIX: Rursum, reverende Miles, quia su-
 perius visus fuistis regem Franciae modernum ab actibus tyrannicis
 excusare, quaeso quo iure potest rex Franciae gabellas, impositiones,
 et alia onera importabilia et subditis impossibilia, realia et etiam
 personalia, imponere? Numquid iste est actus tyrannicus? Tenet
 100 enim per hoc populum in servitute, cum potius eos deberet a iugo
 servitutis erigere (c. *De officio prefectorio Affrice, l. In nomine*
Domini, ibi: “Fortissimos tyrannos eiecimus” etc. [M 30v])

Miles, capitulum CXL: Quia quaeritis quo iure rex Franciae possit
 gabellas, impositiones, et alia onera extraordinaria subditis indicere,
 105 respondeo per textum in capitulo *Super quibusdam, § Praeterea, ex-*
tra. De verborum significationibus, ubi dicitur quod omnia pedagia,
 guidagia, et salvaria sunt interdicta quae non apparent imperatorum
 aut regum largitione concessa, vel ex antiqua [A 113v] consuetudine
 [cessat F]

84 lex] l. M (+ Ed.) | imperialis] om. C 86 imitatores] imitato'is M (= imitatio-
 ris/imitationis) | naturae nostrae] tr. A | fuit] fiii' C; fiiiit F (fiunt) 87 iudicial]
 iustitia Ed. | ut²] om. C 89 quin] quoniam F; quoniam a.c. M; quin p.c. M
 (?); quam Ed. 96 actibus] artibus C 97 quaeso] quaero A 100 deberet]
 debent C 102 fortissimos] viros add. A | eiecimus] eiectimus AF | etc.] om. A
 103 capitulum] om. AF 105 quibusdam] quibusdem F 107 apparent] apparet F

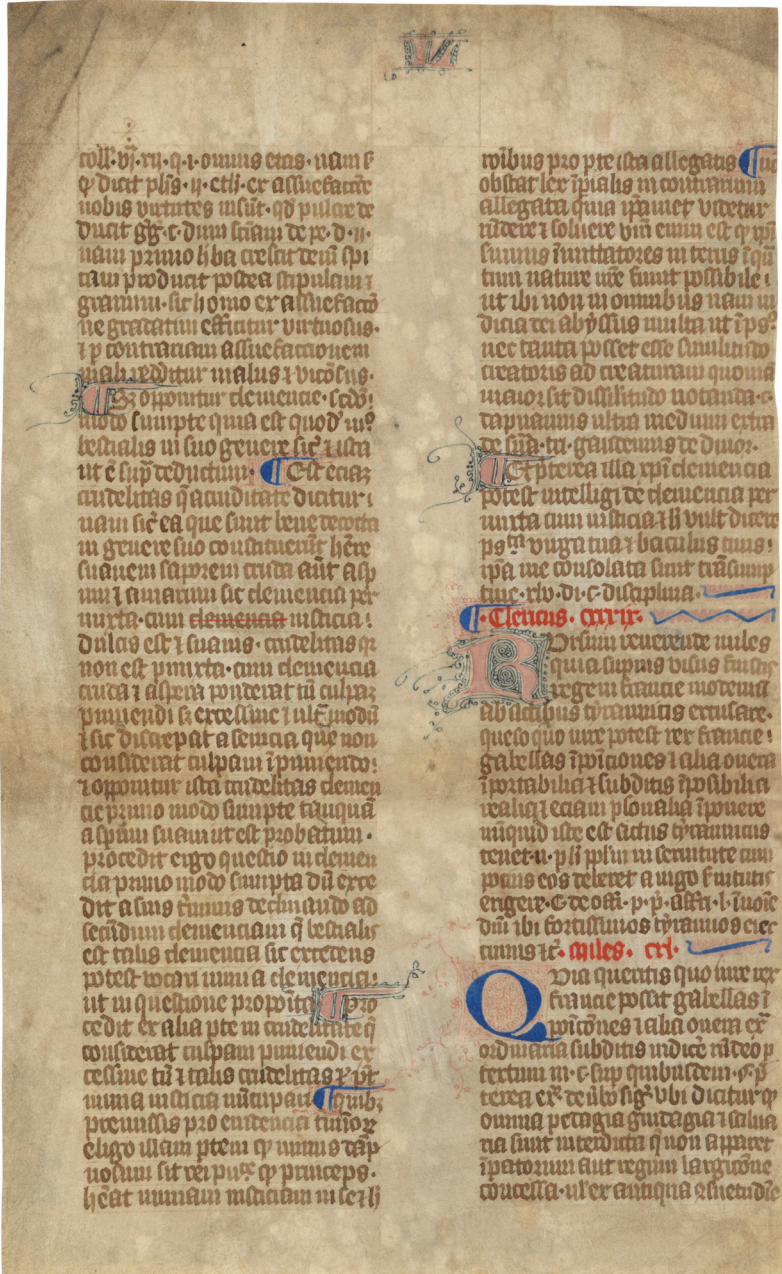


Figure 2: *Somnium Viridarii* Fragment, verso. ©Christie, Manson and Woods 2023

An Offset Fragment in Uncial from Montpellier

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Abstract: This paper examines a hitherto unknown eighth-century offset fragment of the Vulgate (Luke 24:7–10), probably of Insular origin, found on the lower board of MS Montpellier, Bibliothèque Universitaire Historique de Médecine, H 226.

Keywords: Uncial script, Insular manuscripts, Gospel

As often happens with fragments, interesting discoveries are made when one is not looking for them. While I was using digital reproductions of MS Montpellier, Bibliothèque Universitaire Historique de Médecine, H 226, a twelfth-century codex presumably written in France, which preserves Pseudo-Quintilian's *Major Declamations*,¹ an offset caught my attention: I could clearly recognise some letters in uncial script impressed on the lower wooden board. After examination of a more detailed digital reproduction [Figure 1] and some enhancement of the image to improve its legibility

* I owe a debt of gratitude to Bill Duba for his encouragement, and to Lisa Fagin Davis and Paolo Fioretti for their palaeographical advice. Sincerest thanks to Julia Crick, who read an earlier version of this paper, provided extensive feedback, and suggested that I compare the fragment with those now at Avranches and St. Petersburg (*CLA* 6.730 + 11.730).

1 On the transmission of the *Major Declamations*, see L. Costantini, "Pseudo-Quintilian. *Declamationes Maiores*", in *The Oxford Guide to the Latin Classics*, ed. J.A. Stover, Oxford (forthcoming), and more extensively A. Stramaglia, [*Quintilian*] *The Major Declamations*. Translated by M. Winterbottom, with notes by B. Santorelli and M. Winterbottom, Cambridge, MA/London 2021, vol. 1, XLIII–LIV. For information about MS Montpellier, H 226 and its possible origin, see B. Munk-Olsen, *L'étude des auteurs classiques latins aux XIe et XIIe siècles*, v. 2, Paris 1985, 298–299. Digital reproductions of this codex are available online: https://ged.biu-montpellier.fr/florabium/jsp/nodoc.jsp?NO-DOC=2013_DOC_MONI_MBUM_1.



Figure 1: Montpellier, Bibliothèque Universitaire Historique de Médecine, Université de Montpellier, codex H 226, lower board. Credits: SCDI Montpellier - Service photographique

[Figures 2 and 3], it proved possible to identify the text, which turned out to be a passage from the Vulgate, Luke 24:7–10.

Since, to my knowledge, the fragment does not appear in Lowe's *Codices Latini Antiquiores* (hereafter *CLA*), or any catalogue, I offer below a tentative transcription, followed by a physical and palaeographical description. I conclude by speculating about the codex from which the offset fragment came before its dismemberment.

Transcription²

lines

- 1 7[PECCA]TQ[RVM ET]
- 2 [CRVCIFI]GI ET]
- 3 [DI]E [T]E[R]T[IA R]E[SVRGERE]
- 4 8[ET RECORDATAE] SVN[T]
- 5 [V]ER[B]Q[RV]M] E[IVS]
- 6 9E[T] RE[G]RESSAE
- 7 [A MONV]M[ENTO]
- 8 [NVNTIAVERV]N[T] HAE[C]
- 9 [OMNIA ILL]IS VNDECIM
- 10 E[T CETE]RIS OM[N]IB[VS]
- 11 10[ERAT] AVTEM MARIA
- 12 MAGDA[L]E[NE]
- 13 ET [IOANNA]
- 14 ET MARIA [IACOBI]
- 15 ET CETERAE [QVAE]
- 16 [C]VM E[IS] ERANT]
- 17 QV[AE] DI[CEBANT]

Description

The wooden boards are slightly larger than the leaves of MS Montpellier, H 226, which measure approximately 260 × 180 mm.³

2 The superscript numbers in the transcription refer to the verses of Luke 24. I have added a dot under letters that are hardly legible.

3 This information is taken from the online description of the codex; see the link in n. 1 above.





Figure 2, 3: detail of reproduction after postprocessing (mirroring and enhanced contrast)

The offset fragment is in a poor state of conservation and its script is predominantly visible only on the board itself, although the bottom part of the turn-in still retains traces of text (see line 17 of the transcription). The spacing between the lines is ample, the letters are monumental in size and the words are clearly divided, with one line at times transmitting only a couple of words. This *mise en page* makes the text very easily readable and this might suggest that the book was used in the liturgy.

As for the origin of the fragment, since it is not known how the membrane was prepared, we can only rely on palaeography. The considerable number of visible lines and the imposing size of the uncial letters, which look highly elaborate and artificial with triangular serifs and the ornate, leaf-shaped *A*, recall the features of impressive manuscripts of the Old and New Testament produced in England, south of the river Humber, during the eighth century. Examples of these include the so-called Vespasian Psalter (London, British Library, Cotton MS Vespasian A 1, *CLA* 2.193), the Stockholm Codex Aureus (National Library of Sweden, A 135, *CLA* 11.1642), the Codex Bezae Cantabrigiae (Cambridge, University Library, lat. 1.1, *CLA* 5.526), and the set of fragments of the Vulgate, now split between the Bibliothèque patrimoniale of Avranches, MS 48 + 66 + 71,⁴ and the National Library of Russia in St. Petersburg, MS lat. O.v.I.1 (*CLA* 6.730 and 11.730, respectively). These fragments come from a codex in two columns, each of 22 lines, which is believed to have been produced in Southumbria in the second half of the eighth century.⁵ Their script closely resembles that of our offset fragment: although its visible portions do not exhibit the same long ascenders and descenders, or the foot on *M* in final position, one can notice the presence of both the uncial and capital *A*, the latter used in final position, within the same word; see line 14: *MA*RIA. Indeed, an eighth-century insular copy of the Vulgate, presumably in two

4 Digitisations of these fragments are available online: <https://arca.irht.cnrs.fr/ark:/63955/md698623mp90#Description>.

5 E.A. Lowe dates them to s. VIII¹ in the *CLA* and in his *English Uncial*, Oxford 1960, 22, no. XXIX, where he recognises the insular preparation of the leaves. D.H. Wright, "Some Notes on English Uncial", *Traditio* 17 (1961), 441–456, at 449 prefers dating them to s. VIII².

columns like the Avranches + St. Petersburg fragments, could have been the type of book from which our offset comes.⁶

The legible portions of the fragment do not exhibit significant variants from the standard text of the Vulgate. One can only wonder whether the uncial flyleaf was intentionally removed from the codex of the *Major Declamations* or if it simply fell out. No doubt, should this flyleaf be found, it would be possible to offer a more accurate description of its script, its origin and dating.⁷ Harder still is to speculate about the reason why this eighth-century leaf ended up becoming a flyleaf. If one accepts the hypothesis of its insular origin, given the strong connections between England and France during the early Middle Ages,⁸ maybe a copy of the Vulgate would have been brought to France at that time. This old and perhaps damaged book, after falling in disuse, was dismembered and one of its pages was eventually re-employed as a flyleaf of a twelfth-century manuscript, now MS Montpellier, H 226. This codex seems to still retain its original Romanesque binding,⁹ which would point to a twelfth-century reuse of our uncial fragment probably as a hooked endleaf. The fact that the three Avranches fragments were reused as flyleaves in twelfth- and thirteenth-century MSS¹⁰ might perhaps point to a phenomenon typical of France during s. XII/XIII, if we accept that MS Montpellier, H 226 was produced there.

We do not know in which scriptorium MS Montpellier, H 226 was written and bound. A later annotation at the top of f. 1r indicates that the MS was owned by the Troyes-born scholar Pierre Pithou. After his death in 1596, the book came into the possession of his brother, François Pithou, as shown by the catalogue of his manuscripts

6 As far as I could see by overlapping the reproductions of our fragment and Avranches, MS 66 in postprocessing, the slightly different spacing prevents us from proposing the same origin for our fragment.

7 Although the flyleaf itself could not be found, I am very grateful to Pascaline Todeschini and the librarians at the Bibliothèque Universitaire Historique de Médecine of Montpellier for searching for it.

8 Cf. R. McKitterick, *Books, Scribes and Learning in the Frankish Kingdoms, 6th–9th Centuries*, Farnham/Burlington, VT 1994, 395–432.

9 My thanks to Bill Duba and Simona Inserra for sharing with me their codicological expertise on this.

10 See CLA 6.730 for further information.

(Leuven, KU Leuven Bibliotheken Bijzondere Collecties, Ms. 1113, f. 6v), which refers to a book of *Quintiliani Declamationes*. After the death of François Pithou in 1621, the book was bequeathed to the College of the Oratory of Troyes, as shown by the *ex libris* at the bottom of f. 1r (*Quintiliani Declamationes ex libris oratorii collegii Trecensis*),¹¹ after which it eventually migrated to Montpellier. If this MS of the *Major Declamations* was produced in the Troyes area, that would provide us with information about the location of the uncial codex before its dismemberment. Unfortunately, the *CLA* and the *Earlier Latin Manuscripts* database do not offer information about other codices in uncial preserved at Troyes during the Middle Ages. However, it is worth noting that a MS of Gregory the Great's *Regula Pastoralis* written in an Italian uncial between s. VI/VII (now Troyes, Bibliothèque de conservation, Médiathèque Jacques Chirac, MS 504, *CLA* 6.838) was bequeathed to the College of the Oratory of Troyes by François Pithou. More interesting still is the case of two flyleaves in uncial (s. VI/VII, unknown origin) from Eucherius' *De Quaestione Veteris Testamenti*, which are found in a tenth-century codex of Lactantius' *Divine Institutes* and *De Opificio Dei*, now Montpellier, Bibliothèque Universitaire Historique de Médecine, H 241 (*CLA* 6.789). Like the witness of the *Major Declamations*, this book was also owned by Pierre Pithou before passing to his brother François, to the College of the Oratory of Troyes, and then to Montpellier. The MS was at the Abbey of Saint-Arnould of Metz during the twelfth century, as revealed by the partly erased *ex libris* towards the end of f. 186v. It is presumably there that the first eight folios were added

¹¹ These annotations on f. 1r were noticed by H. Dessauer, *Die Handschriftliche Grundlage der neunzehn grösseren Pseudo-Quintilianschen Declamationen*, Leipzig 1898, 15, and G. Lehnert, *Quintiliani quae feruntur Declamationes XIX Maiores*, Leipzig 1905, XII. However, their dating of the *ex libris* of the College of the Oratory of Troyes to s. XV is too early, given that it was founded in 1617; see J. Murard, "Les Pithou et l'école", in *Les Pithou Les Lettres et la paix du royaume*, ed. M.-M. Fragonard and P.-E. Leroy, Paris 2003, 65–88. A dating of s. XVII is, indeed, more accurate also on a palaeographical level. My thanks to Veronika Drescher for her advice on the manuscripts of Pierre and François Pithou.

or restored.¹² Perhaps at this same time the codex was rebound and the uncial fragments were used as flyleaves, which would conform to the phenomenon of the reuse of uncial fragments in the twelfth and thirteenth centuries, tentatively outlined above.

This information is too scanty to allow a full understanding of the reuse of the Montpellier offset fragment or other fragments in uncial. Nonetheless, the publication of this and the seventh-century uncial fragment discovered by Pieter Beullens in 2022¹³ offer hope that similar unrecorded early fragments may resurface now that increasing numbers of collections are being digitised and made available online.

12 On this MS, see L.K. Barker, “MS Bodl. Canon. Pat. Lat. 131 and a Lost Lactantius of John of Salisbury: Evidence in Search of a French Critic of Thomas Becket”, *Albion* 22 (1990), 21–37, at 27. For the reproductions of the MS and the flyleaves (made from the black-and-white microfilm) see: https://ged.scdi-montpellier.fr/florabium/jsp/nodoc.jsp?NODOC=2023_DOC_MONT_MBUM_60.

13 Cf. P. Beullens, “An Unnoticed Uncial Fragment of the *Passio Iuliani*”, *Fragmentology* 5 (2022), 87–94.

Review

Hannah Ryley, *Re-using Manuscripts in Late Medieval England: Repairing, Recycling, Sharing* (York Manuscripts and Early Print Studies, 4), York: Medieval Press 2022, 240 pp., ISBN 9781914049064.

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This study of medieval books focuses on the ways in which manuscripts were reused in fifteenth-century England. The introduction sets out four key questions which frame the discussion. How were manuscripts made and how did they become so durable? In what ways were manuscript book materials recycled? Were books reused for purposes other than reading? And what happened when books changed hands? Four substantial chapters then explore these areas, keeping the two closely linked concepts of durability and recyclability in mind throughout.

Chapter 1 offers a highly detailed account of parchment-making. Starting, literally, in the field, it contemplates the animal pre-history of the book, from farm husbandry to the supply chains of the meat trade, re-evaluating all the stages in parchment production “from farm to writing table” (p. 19). In imitation of a “nose-to-tail” approach (p. 19) where every part of the slaughtered medieval animal was pressed into use, the discussion also covers by-products such as gelatine and glue, ink, quills, and pigments. Paper gets a nodding mention, as does the debate around uterine vellum, but the sustained focus is on craftsmanship and the processes involved in creating a durable product, including methods of repair when the product’s durability was imperilled. Continuing with the theme of waste and reuse, Chapter 2 starts by showing that even unpromising-looking offcuts of parchment could be used to make books. The main emphasis in

this chapter is on the structural ways that parchment manuscripts were reused in medieval book production – as reinforcing strips, quire guards, flyleaves, pastedowns, and limp covers. Attention is also paid to the practice of making palimpsests. Chapter 3 focuses on the reuse of written manuscripts as locations for further writing, considering marginal notes, doodles, and texts (typically lyrics, recipes, charms), that were jotted down by those who handled medieval books. In Chapter 4 this concept of subsequent use is expanded into a wider consideration of second-hand books that incorporates the creation of common profit books and the pledging of books in loan chests. These main chapters are book-ended by an introduction that sets out the book's aims and scope, and a briefer conclusion that reinforces those aspects. There is also a bibliography, a well-prepared index, and twenty figures comprising one table, four diagrams, and fifteen reproductions from manuscripts, most of which are in colour; all the illustrations are of good resolution, and generally this is an attractively and attentively produced volume in which I could spot no typographical errors.

The book concerns itself with manuscripts that were “made in England and are dated or datable to the long fifteenth century” (legitimately understood to encompass the period 1350–1550), and manuscripts that were “made earlier but are considered for the signs of their circulation in the fifteenth century” (p. 8). Such generous scope should have generated an evidence base of thousands of codices, but in fact the study confines itself to the much smaller group of vernacular manuscripts. The exclusion of Latin manuscripts (which vastly outnumber vernacular ones) is problematic. Nor are fifteenth-century vernacular (meaning “English”) manuscripts necessarily as homogenous as this division suggests: many codices are multi-lingual and contain Latin as well as English and French texts. This plurality is ignored, problematising the book's claim to offer “an inclusive narrative of reuse” (p. 187). Its evidence-base is further narrowed by a heavy reliance on Oxford repositories. Oxford's manuscript holdings are certainly rich, and it should be acknowledged that pragmatic considerations will have played a part here in that, during the period of writing, Covid restrictions will undoubtedly have frustrated any intention to free-range more widely. But scant

attention is paid to the potential effects of this restriction. Certain reuses, such as book-pledging, will have been more common in an academic environment. Similarly the restriction of the survey of marginalia in Chapter 3 to just the Douce and Laud collections will have had some impact on the study's findings, since these were collections assembled by individuals whose own personalities and roles will have cast an influence on the types of books they collected, and therefore on the kinds and frequencies of annotations that are likely to be found in them. It would have been helpful if such points had been more clearly foregrounded.

The book makes some welcome links between book history and medieval writing, and it is good to see Middle English recipes, still a comparatively under-researched genre, feature in Chapter 1. There is some unnecessary scepticism about the practical use of such recipes, and the discussion also assumes that prescriptions for parchment-making were wholly oriented towards the production of writing supports. Though it may have been hard to make good parchment on an amateur basis, medieval households, especially those situated remotely, had to be as self-sufficient as possible, and parchment that was needed for other purposes such as food-wrapping or cleaning need not have been perfect (and need not have been second-hand either). This is one instance where the monograph's strong focus on book production proves unhelpful; similarly in Chapter 2, the discussion of the reuse of parchment offcuts could usefully have been expanded to consider documentary needs: notarising small local transactions would have needed only small pieces of parchment, and cancelled documents were themselves sometimes repurposed as book bindings.

Much of the content of this monograph will not surprise specialists of medieval book history, but the book has a real value in drawing together specialised information that is otherwise disparately located. Technical terms and processes are explained clearly and straightforwardly, and the writing is couched at an accessible level throughout. These aspects will make it a very useful source for graduate students and others who are encountering the environment of the medieval book for the first time. Its most novel angle is its concentration on the fifteenth century, and the evidence that

it presents for the reuse and recycling of medieval manuscripts in that period. In English contexts it is much too easy to attribute such reuses to the Reformation and the destruction of monastic libraries, and to the demands of the printed book trade. Ryley's study is a welcome reminder that the recycling of parchment manuscripts was a longstanding practice that pre-dated the seismic changes of the sixteenth century.

Conference report

Fragmente und Fragmentierungen. Neue Zugänge zur mittelalterlichen deutschsprachigen Überlieferung

Freiburg (CH), 13–16 September 2023

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The 28th colloquium of the Wolfram von Eschenbach-Gesellschaft, organised by CORNELIA HERBERICHS (Fribourg, Switzerland) in collaboration with the Departement für Germanistik and the Medieval Institute of the University of Fribourg, was held from 13 to 16 September 2023 in Fribourg. This year, the conference was once again preceded by a workshop for early-career researchers entitled *Fragmentologie – Aktuelle Ansätze der wissenschaftlichen Analyse mittelalterlicher Handschriftenfragmente mit einem anwendungsorientierten Praxisteil zur digitalen Erschließung* (“Fragmentology – Current Approaches to the Scientific Analysis of Medieval Manuscript Fragments with an Application-oriented Practical Section on Digital Indexing”), led by INCI BOZKAYA (Fribourg) and LENA STOCKBURGER (Karlsruhe) in collaboration with WILLIAM DUBA (Fribourg). Early-career scholars worked with selected fragments of Rudolf von Ems’ *Barlaam und Josaphat*, some of which were digitised especially for the workshop (and will be published on *Fragmentarium* in due course), enabling them to try their hand at digital manuscript cataloguing methods and discuss current theoretical approaches in Fragmentology.

The conference itself served as a platform for in-depth discussion; with the exception of the opening and evening lectures, papers were distributed in advance, and each contribution consisted of a ten-minute summary followed by a comprehensive discussion. The conference focussed on the topic *Fragmente und Fragmentierungen*.

Neue Zugänge zur mittelalterlichen deutschsprachigen Überlieferung (“Fragments and Fragmentation. New Approaches to Medieval German Literary Transmission”). This choice of topic addressed the ongoing material turn in Cultural Studies, which is particularly evident in the growing significance of research focussing on the evolution of texts as well as literary transmission history. In addition to a focus on manuscript fragments, the status of literary fragments was also discussed, in particular how later generations handled texts remaining only in incomplete form.

The opening lecture, given by MICHAEL STOLZ (Bern), *Denkbruchstücke. Fragmentarität als Gegenstand der mediävistischen Literaturwissenschaft* (“Fragments of Thought. Fragmentariness as a Subject of Medieval Literary Studies”), was held in Fribourg’s Museum of Art and History. “Gather the pieces that are left over. Let nothing be wasted” (John 6:12). The soul and spirit are nourished much the same way: piece by piece, or, as it were, fragment by fragment. Stolz began with philosophical reflections on fragmentariness — and the part-whole relationship inherent in it — across a broad historical arc, drawing upon Walter Benjamin’s eponymous concept of *Denkbruchstücke*. Focussing the discussion on medieval literary transmission, Stolz took a comparative approach to variants from the *Parzival* tradition – including the text of the oldest surviving fragment 26 (part of branch *T of *Parzival*), which with its three pieces each a mere centimetre in size embodies the topic of ‘*Bruchstücke*’ quite literally. For Stolz, parallels in wording with Chrétien’s *Erec* point towards possible interference between *Parzival* version *T, which Karl Lachmann did not consider, and Chrétien’s text.

The second day focussed mainly on the materiality of manuscript fragments and was opened by CHRISTOPH MACKERT (Leipzig). In his contribution, *Handschriftenfragmente im Niemandsland zwischen Bibliothek und Universität. Ein Parcours zu verteilten Kompetenzen anhand einiger Beispiele aus der Arbeit des Leipziger Handschriftenzentrums* (“Manuscript Fragments in No Man’s Land between Libraries and Universities. Clearing the Hurdle of Scattered Competences with Examples from the Leipzig Manuscript Centre’s Work”), Mackert pointed out practical problems that often make it difficult to efficiently catalogue, publicise and frame the literary significance

of new finds. Framing object-led approaches within German Medieval Studies, Mackert made a case for codicological approaches, using his examples to show what fruits careful study of the textual object, and not just the text itself, can bear. In light of the often complementary distribution of skills in the field, Mackert argued for the absolute necessity that institutions involved in manuscript research, namely libraries, manuscript centres and universities, integrate themselves into a network oriented to achieving these goals.

NORBERT KÖSSINGER (Magdeburg/Bamberg), in his presentation *Die Teile und das Ganze? Die frühmittelalterliche Textüberlieferung im Fragment (8.–12. Jahrhundert) und die Erzählungen der Literaturgeschichten – mit einem Ausblick auf die Fragmentüberlieferung des 13. Jahrhunderts* (“Parts and the Whole? Fragments from the Early Medieval (Eighth– to Twelfth-Century) Literary Transmission and the Telling of Literary History – Including Perspectives on the Fragments of Thirteenth-Century Texts”), applied selected modern concepts of fragmentariness to findings from the earliest German-language literary tradition. Kössinger underscored the fragility of attempts to situate surviving texts in literary history, as each new discovery could change the picture of the overall mosaic. At the same time, it is precisely this comparative approach used by literary historians that enables the classification of surviving texts as literary fragments: they might not have been perceived as such by the medieval audience, especially since a different concept of ‘completeness’ can be assumed in the historical paradigm. As a consequence, Kössinger argues, when considering early medieval texts as *textes vivantes*, their materiality must be given particularly careful consideration.

The problematic editorial classification of individual stanzas as ‘fragments’ was the subject of KATJA WEIDNER’s (Vienna) presentation, which was dedicated to *Das Leid der Schneemutter. Der Modus Liebinc [C] und ein Fragment, das keines ist* (“The Suffering of the Snow Mother. The *Modus Liebinc* [C] and a Fragment that isn’t one at all”). An inserted stanza in the Latin poem *Modus Liebinc*, which has no counterpart in the Middle Latin and Middle High German versions, was, with one exception, cut by the editors for formal reasons and then printed separately as a *Frauenlied* despite

fitting seamlessly into the layout of the manuscript (Cambridge, UL, Gg. 5.35) and corresponding metrically with the final strophe. In her detailed comparative study, Weidner explained why such an editorial decision can hardly be justified as it stands at odds with how the text would have been received by its historic audience.

Not fragments themselves, but rather fragmentation processes, were the focus of EVA BAUER's (Munich) paper *Fragmentierung und Sammlungskonzept. Die Wiener Sammelhandschrift Cod. Vind. 2696* ("Fragmentation and Collection Principles. The Viennese Composite Manuscript ÖNB, Cod. 2696"). This codex, with its own programmatic structure, assembles ten spiritual texts (including *Kindheit Jesu, Anegenge, Tnugdalus, Warnung*) to produce an admonition to strive for spiritual salvation. The manuscript shows clear traces of manipulation in the form of the removal of quires and leaves. Yet Bauer, following the lead of Stephan Müller and Jürgen Wolf, concedes that the composite manuscript has its own completeness on a programmatic level, and thus the fragmentations appear in a different light. Although the interventions in the individual texts led to the loss of certain content, the composite manuscript can be convincingly read as a complete work, so that one might even consider whether the changes made at different points in time were possibly carried out with a view to streamlining the manuscript's theological programme.

In his contribution, STEFAN ABEL (Bern) discussed *Textallianzen in den Bearbeitungen des altfranzösischen Lai du cort mantel und von Chrétien de Troyes Érec et Énide in Deutschland und Skandinavien* ("Textual Alliances in the Adaptations of the Old French *Lai du cort mantel* and Chrétien de Troye's *Érec et Énide* in Germany and Scandinavia"). He started with the *Ambraser Heldenbuch*, in which can be found the textual alliance (*Textverbund*) of *Mantel* and *Erec*, which can be related to each other both 'analeptically' and 'proleptically'. Abel pointed out the numerous possible connections between the two texts in terms of content, particularly the motifs of outer and inner beauty and associated items of clothing. Concerning the Scandinavian tradition, in which the *Möttuls saga* and *Erex saga* were transmitted together in some manuscripts, Abel raised the possibility of the existence of a combined *Mantel-Erec* courtly

romance created by compensating for textual losses in Hartmann's *Erec*, as seen in the *Ambraser Heldenbuch*.

KATRIN AUF DER LAKE's (Düsseldorf) paper continued the discussion of texts that refer to other texts and focussed on *Textverbünde(te)*. *Überlegungen zum Verhältnis von Fragment und Fortsetzung als Text(e)* ("Textual Alli(anc)es. Reflections on the Relationship between Fragment and Continuation Seen as Text(s)"). Based on Ulrich von Türheim and Heinrich von Freiberg's continuations of Gottfried's *Tristan*, auf der Lake scrutinised established categories such as 'fragment' and 'continuation'. She interprets the continuations as 'textual allies' (*Textverbündete*), which on the one hand build on the content of Gottfried's text, but on the other hand are conceptually distinct from Gottfried's *Tristan* and make a claim to being autonomous works. Auf der Lake examined the 'textual alliances' (*Textverbünde*) established in the manuscripts using the prologues of the two continuations, paying particular attention to the demarcation of textual boundaries, either by emphasising or concealing the continuation's link to the preceding text. She suggested that, instead of 'fragment' and 'continuation', it would be better to use the term 'partial texts' (*Teiltexte*), eliminating the hierarchical implications of these terms in favour of a more neutral one.

JAN-DIRK MÜLLER (Munich) dedicated the evening lecture to the topic of *'Fragment' und 'offener' Text im Mittelalter* ("Fragment' and 'Open' Text in the Middle Ages"). According to Müller, the consciously created aesthetic fragment, such as Novalis' *Heinrich von Ofterdingen*, was foreign to medieval thinking. In general, the medieval perceptions of literary works involved different notions of 'openness' and 'wholeness'. Despite significant abridgements and contractions, manuscript d of the *Nibelungenlied* (Vienna, ÖNB, Cod. Ser. n. 2663) contains an intact beginning and end and could be regarded as a 'complete work'. Viewed as a *plurale tantum*, the *Nibelungenlied* had fixed structures (metre, stanzas, sequence of content) within which the text could be adapted relatively freely without losing its textual identity. Further, the 'Nibelungen complex' (*Nibelungenlied* and *Klage*) was treated as a single work, which is hardly reflected in modern editions to this day. Using numerous

other examples (including *Alexander*, *Tristan*, *Jüngerer Titurel*), Müller showed that the makers of medieval literature were primarily interested in the completeness of the story (*mære*), whereas the author, who is familiar to the modern reader and has sole responsibility for producing a coherent work of art in its own right, was of secondary importance.

The third day of the colloquium opened with *Das Ende von Wolframs Willehalm* ("The Ending of Wolfram's *Willehalm*"), the starting point for ELKE BRÜGGEN's (Bonn) reflections. The final scenes of the fragmentary text centre on Willehalm's lament for Rennewart and his respectful conversation with the departing heathen Matribleiz. Manuscripts G (St. Gallen, Stiftsbibliothek, Cod. Sang. 857) and V (Vienna, ÖNB, Cod. 2670) contain a further 15 verses in which Willehalm begins to lament anew. Brüggen sought to find explanations for the vehemence of this lament (that earns it criticism from Willehalm's brothers), which is after all not about a dead person but simply a missing one. In her analysis of Willehalm's relationship with the multi-faceted figure of Rennewart, she noted the shifting of the relationships of dependency, which comes to the fore in the lament. In her conclusion, Brüggen pointed out that Ulrich von Türrheim's continuation of the narrative complexes in *Willehalm* still requires closer examination.

Just such a continuation of *Willehalm* was LINA HERZ's (Hamburg) subject of discussion in her paper *Arabel to be continued. Über das Problem unvollständig vollständiger Fragmentierung bei zyklischen Texten* ("Arabel to be Continued. On the Problem of Incompletely Complete Fragmentation in Cyclical Texts"). The transmission of *Arabel* is most complex. Firstly, Heidelberg, Universitätsbibliothek, Cpg 395, on which the editions are based, which transmits the entirety of the *A text, represents an atypical textual constellation: *Arabel* is not in the usual grouping with *Willehalm* and *Rennewart*; instead the text follows Stricker's *Karl* and Konrad von Würzburg's *Heinrich von Kempten*. Secondly, it is the only manuscript that offers a 'continuation of the continuation', i.e. it resolves the fragmentary character of *Arabel* and completes the text – in contrast to the more widely transmitted version, *R, which, like *Willehalm*, breaks off in the middle of a sentence. In Hannover,

Landesbibl., Ms. IV 489, which contains *Jüngerer Titurel* alongside *Arabel* (*R), the abrupt ending is marked by the scribe with markings that could signify continuation dots. According to Herz, the text could be seen to mark its own openness. The recent discovery of the Nordhausen fragment of *Rennewart* by the same scribe completes the picture: version *R of *Arabel* was always transmitted together with *Willehalm* and *Rennewart*. The *R text thus makes no claim to being self-sufficient, but instead openly emphasises its fragmentary character and openness to being continued.

Fragmentariness as a narratological programme was the subject of BRITTA BUSSMANN and ALBRECHT HAUSMANN's (Oldenburg) contribution entitled *Fragmentarisches Erzählen: Zur Poetik narrativer Unabgeschlossenheit im Parzival-Titurel-Komplex Wolframs von Eschenbach* ("Fragmentary Narration: On the Poetics of Narrative Open-endedness in Wolfram von Eschenbach's *Parzival-Titurel* Complex"). In contrast to narrative techniques that – building on the structural principle of duplication (*Doppelwegstruktur*) set out in *Erec* – bring the narrated world into a meaningful order, *Parzival* pursues a 'poetics of open-endedness'. This narratological approach aims to do justice to the complexity of the 'real world' by using a fragmentary narrative that neither narrates each and every detail nor the story to its very end, but deliberately leaves empty spaces (cf. Iser). *Titurel*, which focusses on genealogical complementarity, continues this process, independently of its physically fragmentary nature. The narrative inscribed in the *Brackenseil* (dog lead), which eludes being read to its very end, can be understood as a metaphor for Wolfram's narrative technique. *Der Jüngere Titurel*, in turn, can be seen as a reaction to this fragmentariness with its all-encompassing narrative that endeavours to create a world in its totality.

JULIA FRICK (Zurich) traced implicit concepts of fragmentariness in medieval texts from a historical perspective. In her study *Vollständigkeit und Fragmentierung. Poetologische, mediale und pragmatische Bedingungen des Fragmentarischen am Beispiel von Konrads von Würzburg Trojanerkrieg* ("Completeness and Fragmentation. Poetological, Medial and Pragmatic Conditions for Fragmentariness in Konrad von Würzburg's *Trojanerkrieg*"), she highlighted the reciprocity of the part-whole relationship inherent

to all fragmentary texts, using the example of the transmission of Konrad von Würzburg's *Trojanerkrieg*. In the prologue, the narrator announces his intention to forge a whole, both material and aesthetic, out of the heterogenous mass of literary texts that constitutes the Matter of Troy. This narratological approach presupposes a fragility of literary traditions that is to be countered by 'de-fragmentation' (*De-Fragmentarisierung*). Konrad's unfinished epic is always transmitted in combination with an anonymous continuation (based on Dicty's *Ephemeris belli Troiani*), which aims at a summation of the pure facts of the story while negating Konrad's poetological programme. In St. Gallen, Stiftsbibliothek, Cod. Sang. 617, on the other hand, these two texts are followed by an additional (fragmentary) prose version that retells Konrad's text in a heavily abridged form. In this interplay between a claim of completeness on the one hand and fragmentation on the other, a historical awareness of fragmentariness can be identified.

The third day's two concluding contributions involved religious literature. BEATRICE TRÎNCA (Berlin) devoted her paper to the topic of *Zensur und Fragment. Zu den deutschen Predigten Meister Eckharts* ("Censorship and Fragments. On the German Sermons of Meister Eckhart"). The process of censorship initiated by the church authorities can be seen to have triggered a noteworthy dynamic in the transcription of Meister Eckhart's works. The act of censorship is characterised by a seemingly paradoxical Janus-faced quality, as the intention to remove incriminating passages from the public eye simultaneously promotes interest in those very passages. Trînca used selected examples to outline the fragmenting and excerpting processes which were carried out by different, albeit not always clearly identifiable, parties. The paper concluded with a reference to Paul Celan, who had read Quint's edition of Eckhart's works attentively. Celan used excerpts from the sermon *Surge illuminare Iherusalem* as 'chunks of mud' ('*Schlammbrocken*') for his poem *Du sei wie du* – and thus continued the medieval practice of destruction and renewal in his unique way.

LINUS MÖLLENBRINK's (Heidelberg) interest lies in the fragmentary transmission of texts about whose origins little is known but much is speculated. In his contribution *Kleine Überreste, große*

Erkenntnisse? Die Basler Pergamentstreifen des Sælden Hort als Fallbeispiel für den Erkenntniswert früher Handschriftenfragmente ("Small Remains, Great Insights? The Basel Parchment Strips of the Sælden Hort as a Case Study for what Stories Early Manuscript Fragments Can Reveal"), Möllenbrink focussed on the Basel fragments discovered in the 1970s (Basel, Universitätsbibliothek, F IV 43). Combining codicological and literary approaches in his analysis, Möllenbrink tended towards the view that the host volume of the fragments was produced in a Dominican monastery and bound by a commercial workshop. From a literary-sociological perspective, albeit impossible to define with certainty, both a clerical and secular reception can be assumed. Möllenbrink's presentation was also a plea for tighter future collaboration between research on binding fragments and Literary Studies.

For some time now, the Marburg Manuscript Census (*Handschriftencensus*) has served as an important tool for codicologically and palaeographically robust literary analysis. NATHANAEL BUSCH and DANIEL KÖNITZ (both Marburg), two driving forces behind the *Handschriftencensus*, presented *Fragmentierte Verstehte im Überblick* ("A Summary of Fragmented Verse Texts") in the morning of the conference's final day. They presented a list of 72 manuscript fragments in all, comprising a representative selection from the thirteenth century, organised according to text type. The importance of fragmentary transmission from this period, especially for literary historiography, is evident from the fact that around 70 per cent of the surviving manuscripts are fragments. Accordingly, the speakers emphasised the need for intensive scholarly engagement with fragments. This would require new methodological approaches as well as the creation of the necessary institutional framework.

HENRIKE MANUWALD (Göttingen) provided initial insights into a digital edition project launched in October 2023 in her contribution entitled *'Trümmersgeschiebe'? Zum Verhältnis von Ganzheit und Fragmentarität in der Überlieferung der Vier Wachen der minnenden Seele* ("Trümmersgeschiebe"? ('Drift of Debris')? On the Relationship between Wholeness and Fragmentariness in the Transmission of *Vier Wachen der minnenden Seele*"). The text – which is not indexed in the *Verfasserlexikon* – is transmitted in

fourteenth- and fifteenth-century manuscripts. The title-giving term *Trümmergeschiebe* was coined by the Meister Eckhart editor Hermann Büttner, who used it to denote a process of destruction, in contrast to the term *Mosaiktraktat* (mosaic treatise) which was also in use. As the text has survived in widely differing versions, conditions and contexts, Manuwald used it as a paradigmatic text to discuss questions of textual identity, what it means to be a fragment and what constitutes a single literary work. Due to the complexity of the manuscript transmission of the *Vier Wachen*, the edition will have to find its own ways of adequately and comprehensibly representing the specifics of the text's transmission.

NIKOLAUS HENKEL (Hamburg/Freiburg i.Br.) concluded the conference with his paper *Ein 'heimatloser' Quaternio. Eine unbeachtete deutsche Übersetzung des Osterhymnus des Venantius Fortunatus aus dem 15. Jahrhundert* ("A 'Homeless' Quaternion. An Overlooked German Translation of the Fifteenth-Century Easter Hymn by Venantius Fortunatus"). The 'homelessness' of this quaternion written in 1478, which is kept in München, Bayerische Staatsbibliothek, Cgm 5249/66, refers to the fact that it was transmitted on its own, without being integrated into a codex. In addition to another Latin text, it contains the Easter hymn *Salve festa dies*, which was written by Venantius Fortunatus, as well as an adaptation thereof rendered in German rhyming couplets. Taking into account other contexts in which the hymn was transmitted as well as the page layout, Henkel made plausible the hypothesis that the quaternion was intended for use in Latin schools. Henkel sees the reason for the 'homelessness' of the quaternion in its lack of the usual explanatory aids that are otherwise characteristic of such didactic instruments: it was probably never used.

The contributions will be published in volume 28 of *Wolfram-Studien*.

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