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Working Papers
3/2023

ERC AdG 882588 PAGES

Priscian's Ars Grammatica in European Scriptoria: A Millennium of Latin and Greek Scholarship

A project that relies on the manuscript tradition of the text

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The CARMEN project receives funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. 954689.



CARMEN Working Papers 3/2023

Edited by Prof. Dr. Marietta Horster and Dr. Erika Fischer
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DOI: <http://doi.org/10.25358/openscience-10025>

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Priscian's *Ars Grammatica* in European Scriptoria: A Millennium of Latin and Greek Scholarship

A project that relies on the manuscript tradition of the text

Anna Gioffreda, Michela Perino, Michela Rosellini & Chiara Rosso

In this paper we aim to describe the great importance of manuscript study for research related to the PAGES project.¹ The formative stages of the manuscript tradition, from its Oriental origin to its widespread diffusion in the Carolingian world up to the 10th century and later in the humanistic age, can be explored through the testimony of the preserved codices and palimpsests. We will show how we operate in the study of manuscripts and palimpsests, also with the help of multispectral analysis techniques.

1. About PAGES: a short summary (Michela Rosellini)

Written at the beginning of the 6th century CE in the bilingual context of Constantinople, the *Ars grammatica Prisciani* in 18 books is the last and largest Latin grammar handbook of Antiquity. Bringing together the inheritance of Latin and Greek grammatical traditions, it stands as a milestone in the history of linguistic speculation, and it is also an important source of fragments of lost literary works. The deep impact of this text on European culture goes beyond its original scope. It was conceived to teach Latin to Greek speakers, but it was soon disseminated in the Western countries of Europe (Italy, Ireland, and later France, Germany, and so on). Thus, in the early Middle Ages (8th–10th

¹ The ERC Advanced Grant 2019 project PAGES has received funding from the European Research Council under the Horizon 2020 research and innovation programme (Grant agreement No. 882588, PI Michela Rosellini) and is hosted at the Sapienza Università di Roma.

centuries) and during the Renaissance (15th–16th centuries) the *Ars* turned out, due to its great number of Greek passages, to stimulate the study of Greek by Western scholars.

In the last two decades Priscian's *Ars* has been the object of a strong revival of interest in the scientific community. Scholars from various countries have published contributions ranging from the analysis of the manuscript tradition² to that of sources,³ literary quotations,⁴ ancient bilingualism,⁵ the history of linguistics,⁶ and the medieval and early modern reception.⁷ The French team "Groupe Ars Grammatica" has undertaken a modern translation of the work with exegetical notes (book 17 in 2010; books 14–16 in 2013; book 18 in 2017). Three international conferences have been devoted to Priscian in Lyon (2006), Rome (2012), and Bordeaux (2019). Their proceedings collect many of the most recent essays on the *Ars*.⁸ In the meantime, my edition of the second half of book 18 appeared in 2015 (Rosellini 2015a), followed by Spangenberg Yanes's commentary in 2017 (Spangenberg Yanes 2017b). The knowledge of Greek in the Carolingian age, however, has not been fully investigated yet after the pioneering works of Bischoff (1951), Berschin (1980), and the studies collected by Herren (1988). Not a single study on Greek script in the West is available so far, and little is known about *scriptoria* and scribes who faced the transcription of Latin texts encompassing a great number of Greek passages (not only Priscian, but also Macrobius, Martianus Capella, and others). Much more is known about Greek humanists and the study of Greek in 15th-century Italy.⁹ Nevertheless, it remains unknown who arranged the first *editiones* of Priscian's *Ars* and tried to restore the Greek parts lost in late medieval tradition. Therefore, time has come for a new reappraisal and a new critical edition of this crucial text of ancient linguistics. PAGES is part of a major project of renovation of Latin grammarians' critical texts. Indeed, the new edition of Priscian will be published in the *Collectanea Grammatica Latina* (Olms), a collection of new critical texts by Latin grammarians aimed to replace and complete Keil's outdated corpus of *Grammatici Latini*. The series already consists of 17 titles, including my edition of Priscian's *Atticismi* (Rosellini 2015a), the last part of the *Ars*.

To begin with, some information about the text and the crucial steps of its transmission is given. The *Ars* was composed by Priscian and immediately transcribed by Flavius Theodorus, an important officer at the court of Constantinople and a pupil of Priscian from 526 to 527 CE as attested by some *subscriptiones* at the end of several books. Nevertheless, there are only few indications that Priscian's *Ars* was known between the 6th

² Rosellini 2014a; 2020; Martorelli 2014b; Krotz 2015; Pecere 2019.

³ Rosellini 2010; Spangenberg Yanes 2017b; 2019.

⁴ Garcea – Giavatto 2007; Rosellini 2011; 2014b; 2015b; Spangenberg Yanes 2017a; 2018a; 2018b.

⁵ Adams 2003; Baratin 2014; Swiggers – Wouters 2007; Biville 2008; 2009; Mullen – James 2012; Rochette 2014; 2015; Rosellini – Spangenberg Yanes 2019.

⁶ Adams 2007; Callipo 2015; De Paolis 2015; Dickey 2015.

⁷ Baldi 2014; Krotz 2014; Cinato 2010; 2011a; 2011b; 2012; 2015; Spangenberg Yanes 2016.

⁸ Baratin – Colombat – Holtz 2009; Martorelli 2014a; Lambert – Bonnet 2021.

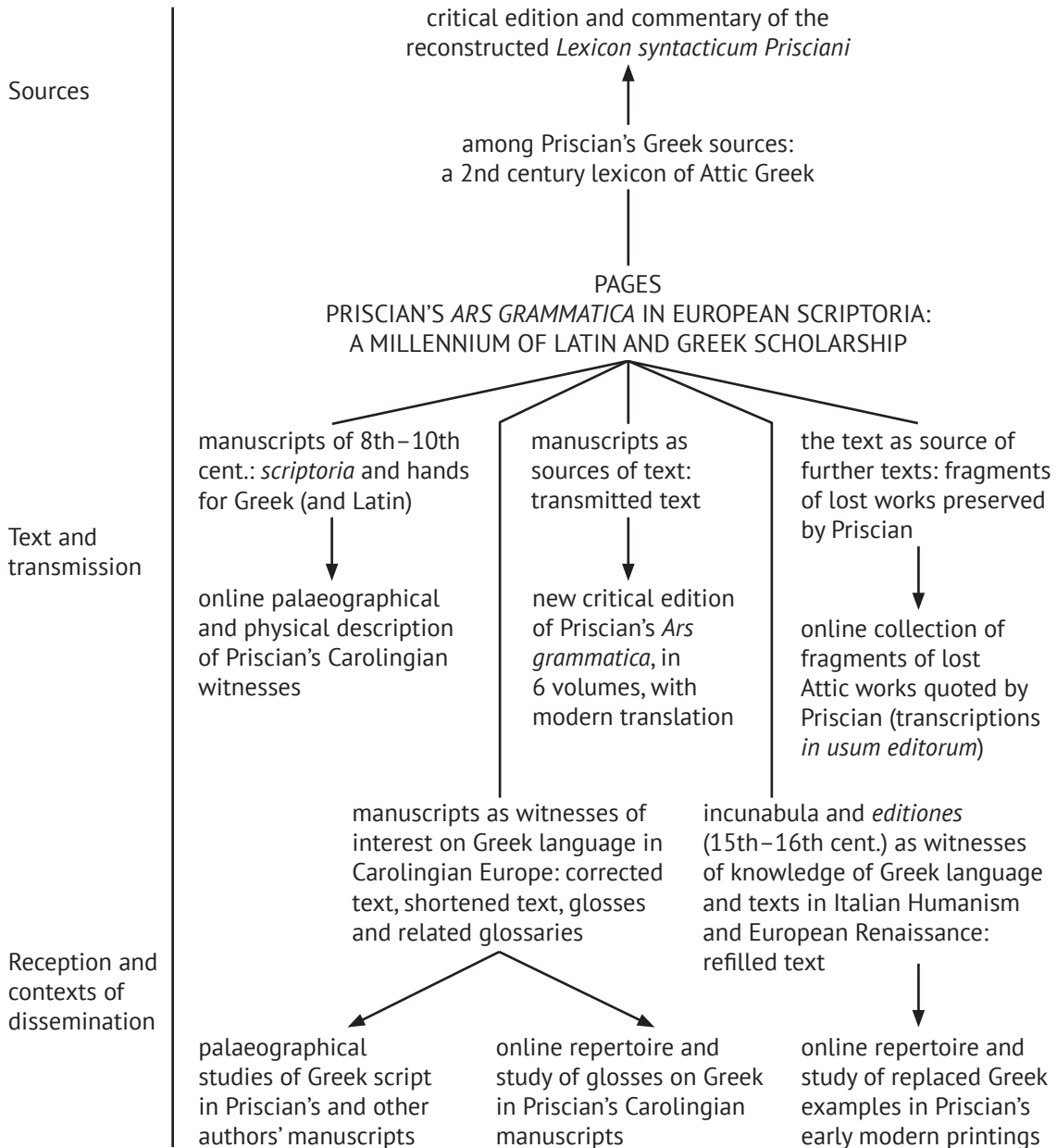
⁹ See surveys in Ciccolella 2008; Botley 2010 and the essays collected in Antonazzo – Cascio 2016 and Abbamonte – Harrison 2019.

and the 8th century, that means between 527 CE, when Flavius Theodorus finished his transcription of the 18 books of the work, and the Carolingian age, when the direct reception and transmission of the *Ars* apparently began on the Continent. Then however, within a few decades, hundreds of manuscripts were copied and Priscian's major work was firmly integrated into the grammatical curriculum north of the Alps. Alcuin of York, master of the Palace School of Charlemagne in Aachen and later Abbot of Tours, was probably responsible of the first reappraisal of the *Ars*: in his work *Excerptiones* he also showed a particular interest in the last two books about syntax (although not at all in the Greek parts of them). The PAGES research group has taken 41 manuscripts, five palimpsests, and more than 40 fragments from the 8th–10th centuries into consideration; we are collating them in order to identify their position in the genealogical tree of the whole tradition and to generate the new text of the *Ars* from them.

However, in this reconstruction process we encounter a major problem. Most manuscripts from the 8th–10th centuries (but many later manuscripts as well) were planned to contain only books 1–16, and many of the others, containing books 1–18 or only 17–18, omit the last part of book 18 (that means: the last 100 pages in Hertz's edition [Hertz 1859, 278–377], not a short *lacuna*!). This part consists of a very rich collection of 'good Greek' and 'good Latin' idioms with plenty of quotations from Attic authors from the 5th–4th centuries BCE. This section, full as it was of passages in Greek, represented for most western scribes (and also for many masters) an unsolvable problem (words impossible to understand, very difficult to copy). Thus, this valuable material, containing more than seventy fragments of lost Attic works, was duly and thoroughly transcribed only very rarely (in this period and later, down to the 15th century). Scribes often preferred to omit all the Greek characters, or part of them. We thus owe our knowledge of the complete text of Priscian's *Ars* to no more than a dozen scribes of the Carolingian age, working in Tours, St. Germain d'Auxerre, Corbie and a few other places in Northern France and South-West Germany between roughly 820 and 920 CE. None of these copyists, however, really understood the Greek characters they transcribed, or rather copied by just outlining the letters. Nevertheless, the quotations from Attic works can always be identified and also whether they come from directly transmitted texts or if they do not and are mainly restored. Indeed, the transmission of the Greek parts, with a big number of significant errors and *lacunae*, gives us very important information about the history of the text. First of all, after collating these most complete and faithful witnesses, we can draw a plausible *stemma codicum* for the last part of the *Ars*, embracing four families, and therefore reconstruct the text of the common ancestor of this group of manuscripts. The *stemma* involves some of the most important witnesses of the whole text so that it turns out to be a useful tool for the exploration of the whole tradition of the *Ars*. Moreover, some of these manuscripts also tell us something about the (poor) knowledge of Greek in those places where they were corrected and annotated: some emendators, mainly at Corbie, could identify and translate some single and simple words in Priscian's lemmas or *exempla ficta* (but generally not in quotations). Finally, in the humanistic period, the recovered knowledge of the Greek language and texts enabled the scholars of the time

to integrate, though solely based on conjecture, words, examples, and quotations into some of the lost Greek parts. These additions have nothing to do with Priscian but testify to the skill, care, and commitment that was put into the restoration of the text.

The manuscripts are at the core of the following schema of the project's aims:



The research consists mainly in the study of the transmission of the work: manuscripts as products of different *scriptoria* and cultural milieux or as witnesses of the text, of the interest in language, in particular Greek, in the Carolingian age, and of the actual knowledge of the Greek language, as attested, for instance, by the glosses on Greek words. The research will lead, of course, to a critical edition of the *Ars* but also (see

at the top of the schema) to a critical edition, with commentary, of the reconstructed Greek *Lexicon syntacticum* that Priscian used (and copied, in part) in the exposition of syntax (books 17–18) and which is known only through his *Ars*. The existence of this lexicon was barely noticed by Priscian's former editor, Martin Hertz (1855, pp. VII–VIII), and mostly disregarded by later studies. Its approximate chronology, cultural context of production, structure and linguistic peculiarities have been thoroughly investigated by various scholars only in the last years.¹⁰ The acknowledgment of Priscian's source as one of the greatest Atticist lexica of the Imperial Age (1st or 2nd century CE) enhances a critical edition of this work as it can be recovered from the extensive quotations in Priscian's *Ars*.

PAGES also aims at illustrating the tradition of the *Ars* thoroughly by taking advantage of the progress in digital philology. In the last 30 years, remarkably few manuscript-based digital critical editions of classical Greek or Latin texts with a multitemonial tradition have been produced. More generally, the predominant model for scholarly digital editions is still that of the archive-edition: PAGES sets out to overcome this limit by integrating an archive of information about the manuscript and print transmission with a proper critical text. The infrastructure will make available the results of the systematic survey of medieval manuscripts and early printed editions, including the comprehensive examination of the Greek script and glosses in 8th–10th-century manuscripts and of the emendations and interpolations in 15th–16th-century manuscripts and printed editions.

To sum up: PAGES aims to both supersede Hertz's outdated and unreliable edition (Hertz 1855; 1859) and, in a broader perspective, to reconstruct Priscian's key role not only in the revival of Latin in 9th-century Europe but also in the practice of Greek script and language in Carolingian *scriptoria*, in the renaissance of Greek philological studies in the humanistic age, and in the history of linguistic education in Europe. The project tackles these challenges with a multidisciplinary approach, gathering experts in textual criticism, digital humanities, palaeography and multispectral imaging, the history of linguistics, and medieval and humanistic scholarship. We will build an open-source digital scholarly resource on the text, the tradition, and the reception of Priscian.

2. The contribution of palaeography to the study of the manuscript tradition of Priscian's *Ars* (Anna Gioffreda: 2–2.2; Chiara Rosso: 2.3–2.5)

The palaeographic and codicological analysis of a handwritten book involves a description of its internal and external parts. As far as its internal part is concerned, in the absence of subscription with which the scribe himself provides information on the date, sometimes down to the hour of the day, and the place where he completed his activity, only the analysis of the script allows scholars to date and localise a manuscript, thus

¹⁰ See Rosellini 2010; 2012; Valente 2012 and the studies collected in Martorelli 2014a.

defining its origin. In addition, the survey of external features, namely material support, quire composition, ordering system, layout, ruling and pricking as well as decoration and binding adds important data about the structure of the book and its preparation (Maniaci 2015, 69–88).

In the case at hand, the main objects of our investigation are the early medieval manuscripts of Priscian's *Ars*, that is, about 45 complete manuscripts out of a total of over 400 witnesses of the work as well as approximately the same number of fragments.¹¹ Only few of them present secure dating elements, e.g. the codex [Leiden, Universiteitsbibliotheek, BPL 67](#): on folio 7v, after the end of Priscian's *Periegesis*, it bears a subscription written by a certain Dubthac, who states to have finished his copying work on April 11th, 838 (Fig. 1):

Dubthac hos versus transcripsit tempore parvo / Indulge lector que mala scripta vides / Tertio Idus Apriles / Tertio anno decennovalis cycli / Tertio die ante pascha / Tertia decima luna incipiente / Tertia hora post meridiem / Tribus degitis / Tribus Instrumentis / Penna Membrano Atramento / Trinitate auxilia

“Dubthac transcribed these lines in a short time: reader, forgive the mistakes you see. On the third day to the Ides of April, in the third year of the 19-years cycle, three days before Easter, at the beginning of the thirteenth lunar cycle [of the year], in the third hour of the afternoon, with three fingers, three tools, that is pen, parchment, ink, and the help of the Trinity”

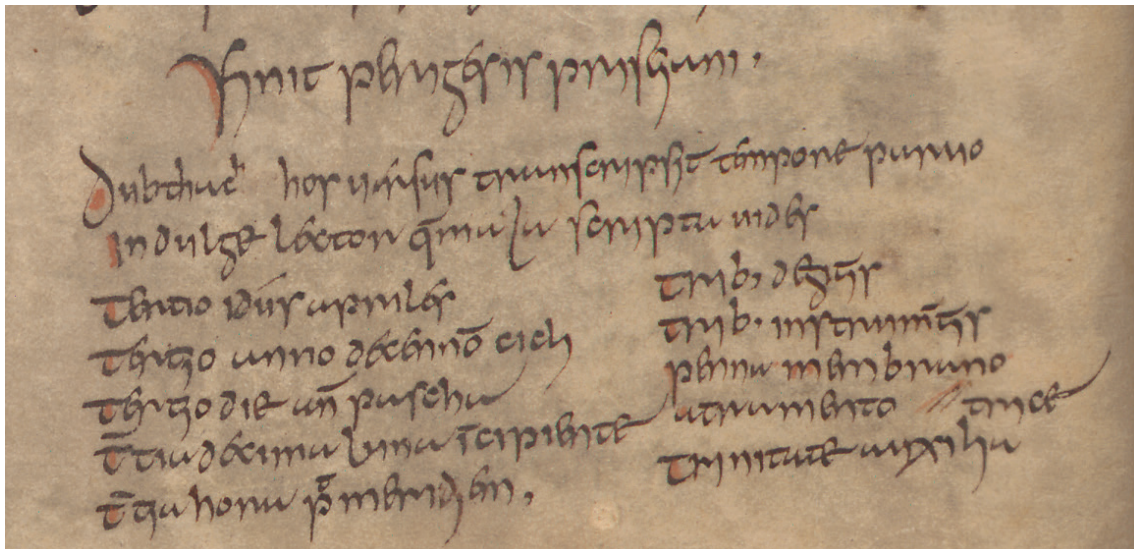


Figure 1: Leiden, BPL 67, f. 7v. © Leiden, Universiteitsbibliotheek

In addition to giving reliable chronological information to date the copyist's work, the Leiden manuscript is an interesting witness because of its subscription, which includes a brief list of the essential tools of scribes: pen, parchment, and ink. In this formula,

¹¹ For the manuscripts of Priscian's *Ars* see Passalacqua 1978; Ballaira 1982 and Rosellini 2015a.

Dubthac appeals to the readers' indulgence resorting to Christian numerology by the repetition of the number three (Bischoff 2004, no. 2142; Ruzzier 2014, 463–468).

Unlike Dubthac's manuscript, the majority of the investigated codices has been dated to between the end of the 8th century and the 10th century only on palaeographical grounds. Our main task is to confirm or deny previous dates and localisations by means of a formal comparison between scripts, which is favoured by the availability of catalogues of dated and datable manuscripts.

To offer an example of our research material and how we dissect it, we have tried to organise the many and varied books and writing forms that constitute the 8th–10th century manuscript tradition of the *Ars* in several groups according to the following criteria: a) their state of conservation (whether they are intact or fragmentary); b) the organisation or the density of the text on the written surface (in columns, full-page etc.); c) the type of script used; d) the ways and contexts they were read and employed in.

2.1. The state of preservation of the witnesses

Unfortunately, as noted above, not all manuscripts have survived in the original codex form. Nevertheless, the structure of many of them has remained intact over time, and we can thus leaf through the books of the *Ars* in the form in which they were set up and used in the Middle Ages. Among the many available exemplars, MS [Par. Lat. 7504](#), a witness entirely devoted to Priscian's work, transmits other treatises by him together with the *Ars* (Bischoff 2014, no. 4458; Ruzzier 2014, 497–499).

The manuscript, consisting of 188 folios in whole, was copied probably at the end of the 9th century in the Loire region by several hands (at least seven), who copied the *Ars* in full-page layout, each page containing 35 lines of writing. The end of the text is marked by a distinctive script, the so-called rustic capital, on folio 179r (Fig. 2).

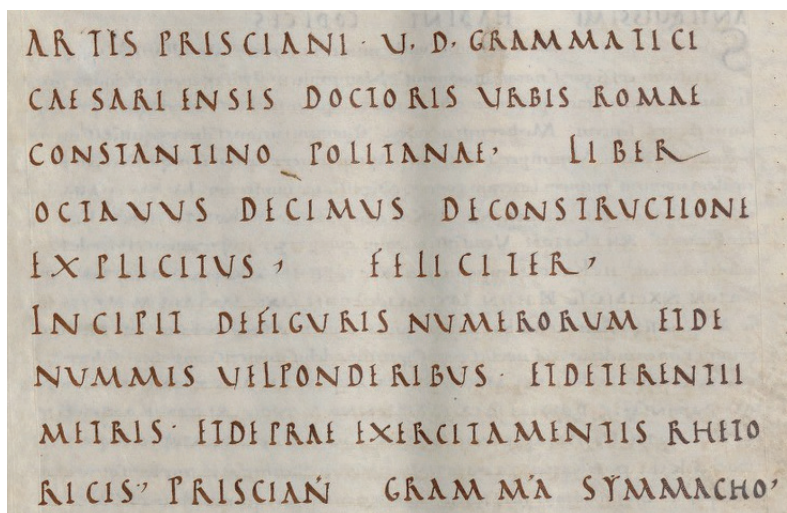


Figure 2: Par. Lat. 7504, f. 179r. © Paris, Bibliothèque nationale de France

The physical integrity of a codex does not always correspond to textual integrity (see above Rosellini). Indeed, within the manuscript tradition we can distinguish between codices that contain the entire work and those that contain only a part of it, usually corresponding to the first 16 books of the text, which are known collectively as *Priscianus maior*. None of the three oldest codices of the *Ars* ([St. Gallen, Stiftsbibliothek, Sang. 903](#); [Bamberg, Staatsbibliothek, Class. 43](#); [Karlsruhe, Badische Landesbibliothek, Reichenauer Pergamenthss. Aug. 132](#)), which are all dated to the 8th century, transmits the work in its entirety; they all lack the section with the *Idiomata*, namely the two last books (Rosellini 2015a, 343). The codex St. Gallen, Stiftsbibliothek, Sang. 903 transmits only the first 16 books of the *Ars*, although the index on p. 4 also mentions the presence of book 17 and 18 (Fig. 3). It is impossible to say whether these books had ever been present in the manuscript (Bischoff 2014, no. 5870; Cinato 2015, 570–571).

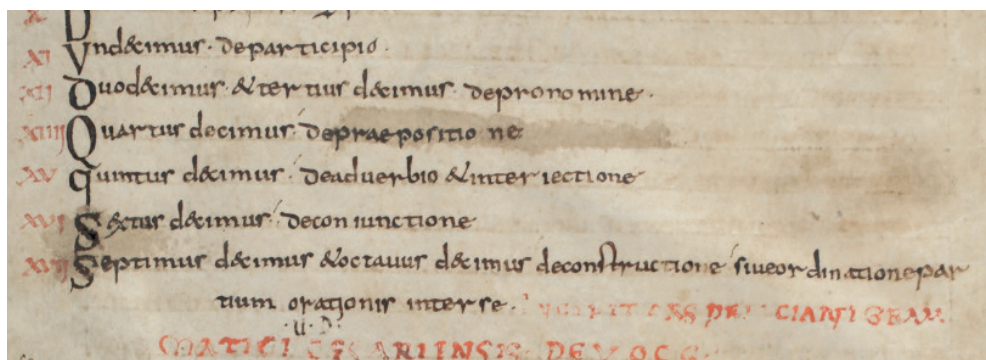


Figure 3: St. Gallen, Stiftsbibliothek, Sang. 903, p. 4. © St. Gallen, Stiftsbibliothek

A significant part of the *Ars* manuscript tradition consists in fragments, that is, remnants of ancient parchment codices containing more or less extensive sections of the work. Sometimes, these hold very short pieces of text on one or two folios at most, such as folios 169–170 of the codex [Città del Vaticano, Biblioteca Apostolica Vaticana, Reg. Lat. 329](#), which were copied probably in the second half of the 9th century in St. Denis (Passalacqua 1978, 315; Bischoff 2014, no. 6664). Then again, they can consist of a larger number of pages. A remarkable case is represented by the fragment stored in Piacenza in the Sant'Antonino Archive under the shelfmark Cass. 49, fr. 47, which amounts to 44 folia and transmits a text of excellent quality (Riva 1997, 7, 59, 220; Manfredini 2011; 2018). Thanks to her recent research, Chiara Rosso concluded that it should be dated to the 9th century and not to the 10th as claimed hitherto by Manfredini.

2.2. Presentation of the text: models of layout

The page layout of a codex is influenced by both its contents and purpose in addition to the natural features of the material used as well as by the dominant aesthetic canons and the personal preferences of artisans and commissioners. The choice of the text layout

might also be determined by other factors such as the conditions of reading, the weight of local traditions, the influence of specific models, or the practical function of certain types of works (such as glossaries or bilingual texts; Maniaci 2015, 82). The medieval witnesses of the *Ars* commonly are medium-large in size and adopt a full-page layout. The text is arranged at the centre of the writing surface in about 35 to 40 lines of script and surrounded by wide margins for notes and glosses that could be layered over time.

Among the countless examples of full-page manuscripts, let us consider [Par. Lat. 7497](#), which was copied in France during the first half of the 9th century (Passalacqua 1978, 220; Bischoff 2014, no. 4449). The codex is medium-large in size, like almost every other *Ars* codex, and transmits only the first 16 books of the work on 131 folios. The written area occupies 243 × 149 mm of a total surface of about 300 × 213 mm in a full-page layout of 38 lines of writing. Thus, the lower and outer margins are quite large, ideal for reading notes and glosses on the text. In fact, at least two different readers penned their own reading notes in the margins of this manuscript (they are roughly contemporary or slightly later to the main copyist).

The availability of extensive margins is not always exploited in the same way in the various witnesses as illustrated by the manuscripts [Par. Lat. 7501](#) (Fig. 4) and [Par. Lat. 7502](#) (Fig. 5). [Par. Lat. 7501](#) is a full-page codex copied at Corbie in the second half of the 9th century (Bischoff 2014, no. 4453; Ruzzier 2014, 485–488). In this case, the marginal space surrounding the main text has been filled with notes to such an extent that no blank space remains. [Par. Lat. 7502](#) (Bischoff 2014, no. 4454; Ruzzier 2014, 489–493), in contrast, presents the same wide-margin layout but remained untouched by readers' and commentators' hands.

In very few – only five – manuscripts Priscian's *Ars* is organised in two columns: two of them were copied at Corbie in the 9th century ([Amiens, Bibliothèque Centrale Louis Aragon, 425](#) and St. Petersburg, Rossijskaja Nacional'naja Biblioteka, Class. lat. F.v.7, ff. 41–124),¹² one hails from central Italy ([Bamberg, Staatsbibliothek, Class. 43](#); Fig. 6a),¹³ a fragment comes from eastern France (Frg. Bern. [*olim* Frg. Bern.¹], [Bern, Burgerbibliothek, AA 90. 21](#))¹⁴ and the last one was prepared in the Irish monastery of St Gall in modern Switzerland ([St. Gallen, Stiftsbibliothek, Sang. 904](#)).¹⁵

The fragment [München, Bayerische Staatsbibliothek, Clm 29364 \(1\)](#), from a codex dated to 10th-century Germany of which one sheet and three fragments remain, is a truly singular case (Hauke 2001, 338). What remains testifies to the existence, in the 10th century, of a book in which Priscian's work was arranged in three columns of writing, each spanning about 40 lines. Looking at the proportion of full-page to columnar witnesses, which clearly tends to favour the former, it can be argued that the columnar layout was not very successful within the tradition of Priscian grammar.

¹² See respectively Bischoff 1998, no. 40 and Passalacqua 1978, 132.

¹³ Leitschuh – Fischer 1966; Passalacqua 1978, 9–10; Bischoff 1998, no. 213.

¹⁴ Bischoff 1998, no. 509; Ammirati 2014, 427–428.

¹⁵ Bischoff 2014, no. 5870a.

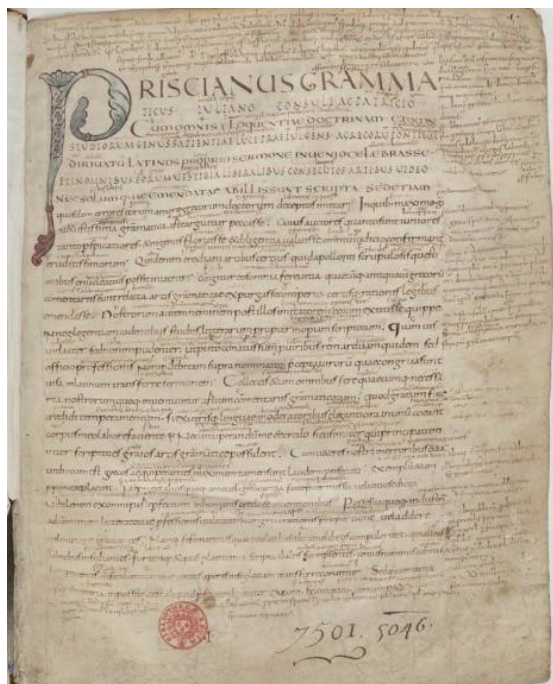


Figure 4: Par. Lat. 7501, f. 1r. © Paris, Bibliothèque nationale de France

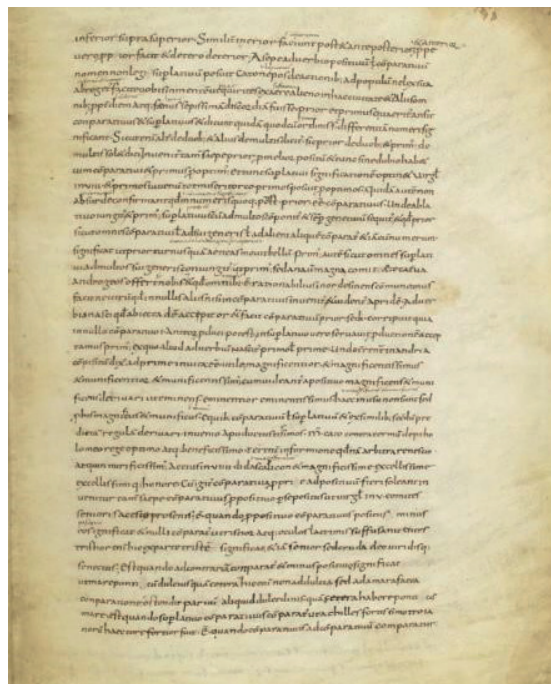


Figure 5: Par. Lat. 7502, f. 4r. © Paris, Bibliothèque nationale de France

2.3. Different types of scripts

Priscian's *Ars* enjoyed a wide circulation during the Middle Ages. Starting from the late 8th century, in fact, it became one of the most widely used reference grammars for the recovery of Latin. For this reason, its preserved manuscripts stem from all over the Holy Roman Empire.

In line with the writing fashion of the 9th century, the majority of the *Ars* manuscripts was copied in the Caroline script, a calligraphic minuscule, particularly elegant and regular, with rounded and simple shapes that make it easily legible. The broad dissemination of this script had the effect that it underwent slight stylistic developments in different centres of book production, although it structurally retained the same morphology. A French *scriptorium* which played a prominent role in Carolingian book production was located in the monastery of Corbie.¹⁶ Here, in the second half of the 9th century, a particular type of the Caroline script was developed, which can be well illustrated by some manuscripts of the *Ars*: for example, MS [Par. Lat. 7501](#) (Fig. 4) is written in this calligraphic minuscule, very elegant and rounded, stylish and harmonious and only barely enhanced by elaborate decoration, like most of the books produced at Corbie (Bischoff 2014, no. 4453; Ruzzier 2015, 485–488).

To a completely different scribal environment refers MS [Città del Vaticano, Biblioteca Apostolica Vaticana, Vat. Lat. 3313](#) (Bischoff 2014, no. 6872): the codex was written in

¹⁶ On Corbie see Ganz 1990.

the so called Beneventan script in southern Italy (Montecassino or Benevento) at the end of the 8th or the beginning of the 9th century. It shows all of the most characteristic letters of this type of script such as *a* in the form of two *c*'s, 'broken' *c*, tall *e* with the cross stroke enabling the connection or ligature with the following letter, long *i* used at the beginning of a word, and two forms for the *ti*-ligature, respectively for unassibilated *ti* (e.g. *statim*) or assibilated *ti* (*etiam*).

The already cited Bambergensis Class. 43 (Fig. 6a), today acephalous and mutilated, was written not far from the Vatican one, nor long after, but in a quite different type of script. As mentioned above, the codex is believed to have originated in the first half of the 9th century in Central Italy, perhaps in Lazio or Southern Tuscany. In its writing, some peculiar features that the Caroline script, while taking root in Rome and in the surrounding areas, inherited from the Roman Uncial are clearly recognisable. Examples are a pointed, *v*-shaped *u* placed in the interlinear space (usually at the end of the line, this being a way to save space; Fig. 6b) and a majuscule *T* with forks or small triangles at the end of the top-stroke (Fig. 6c). The copyist of the Bamberg codex also made systematic use of the *ri* ligature, a feature of minuscule writings prior to the Caroline minuscule that the Caroline script mostly rejected and that instead survived in the manuscript production of Lazio, Tuscany and Umbria for a long time.

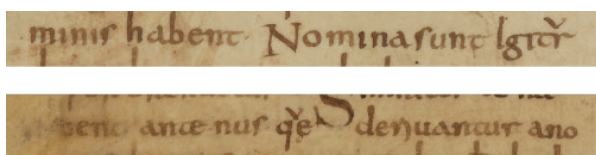
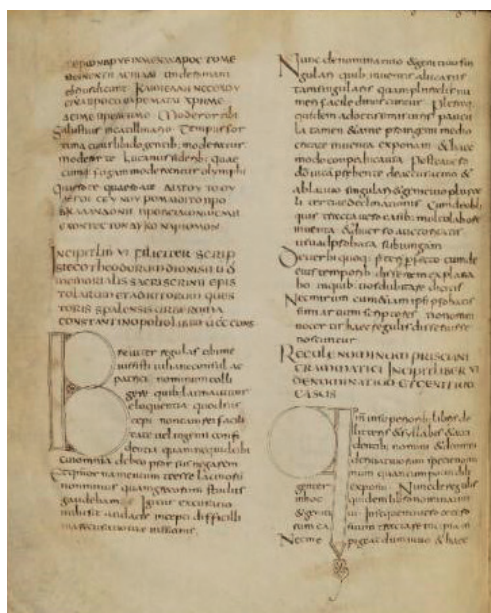


Figure 6b: pointed *v*-shaped *u*

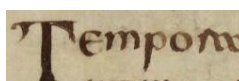


Figure 6c: majuscule *T*

Figure 6a: Bamberg, Staatsbibliothek, Class. 43, f. 27v.
© Bamberg, Staatsbibliothek

Among the surviving witnesses of Priscian's *Ars*, and moreover among the oldest ones, there is also a copy produced in a *scriptorium* in Northern Italy, in all likelihood Verona. It is the above-mentioned codex St. Gallen, Stiftsbibliothek, Sang. 903, which is traceable to the beginning of the 9th century. Here the Priscian text is written in a tiny and pretty clear Caroline script, indeed very similar to contemporary products of the Verona *scriptorium*, marked by very short *f* and *s*, *p* with the bow not quite closed, and the occasional use of long *i* following *l* or *t* (Fig. 7).

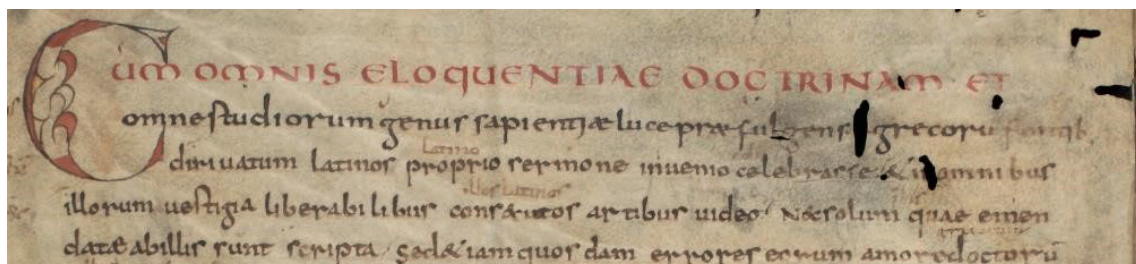


Figure 7: St. Gallen, Stiftsbibliothek, Sang. 903, p. 2. © St. Gallen, Stiftsbibliothek

The corpus that is currently under investigation within the PAGES project also includes three codices written in Insular minuscule, that is, the script which developed on the British Isles and which was then also used by Insular scribes in Continental Europe. These manuscripts are the already mentioned Karlsruhe, Badische Landesbibliothek, Reichenauer Pergamenthss., Aug. 132; Leiden, Universiteitsbibliotheek, BPL 67; and [St. Gallen, Stiftsbibliothek, Sang. 904](#) (Fig. 8). Insular minuscule can be easily recognised by the characteristic wedge-shaped finials on upright strokes and by some letterforms, among them *f*, *r*, and *s* that are at minim-height and the flat-topped *g* with a horizontal stroke instead of the upper bow.

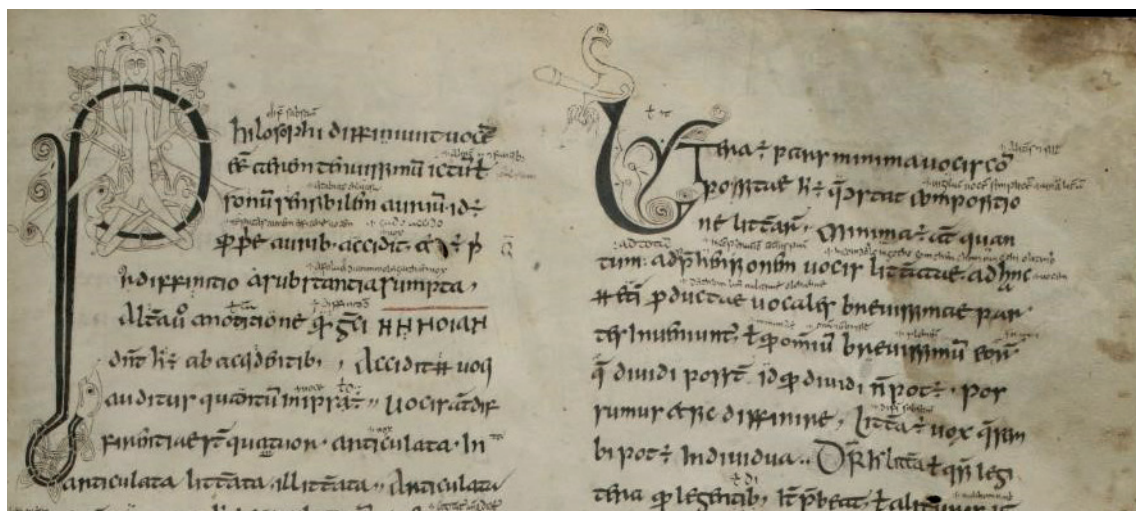


Figure 8: St. Gallen, Stiftsbibliothek, Sang. 904, p. 3. © St. Gallen, Stiftsbibliothek

2.4. Display scripts

When studying ancient manuscripts, it is also necessary to take the so-called paratext into consideration. Since the pioneering studies of Gérard Genette (1979; 1982; 1987), paratext designates all those textual or illustrative elements that accompany the main text with the aim of presenting and illustrating it, providing the reader with various

information relating to it (e.g. author, content, articulation in subsections and so on).¹⁷ Paratextual elements range therefore from prefaces and indexes to illuminations, from all sorts of titles – e.g. *incipit* and *explicit* formulas (titles marking respectively the beginning and the ending of the text or of a section), subtitles, running titles, and so on – to *subscriptions*.

As already pointed out, in some of the manuscripts bearing Priscian's *Ars grammatica* there are indeed some *subscriptions* dating back to the very first history of the work and providing scholars with valuable information about its original composition and edition. In total, six *subscriptions* survive: the first one (unattested in the most ancient witnesses) is located at the very beginning of Priscian's work; the others are instead placed at the end of five of the six parts into which the copy of the lengthy grammar consisting of 18 books was originally divided (Fig. 9). From these *subscriptions* we learn that the antiquarius Flavius Theodorus, *adiutor* of the *quaestor* in Constantinople and Priscian's pupil, wrote down his teacher's work between the summer of 526 and the summer of 527 CE, probably as the author progressively concluded the revision of each of the six parts.

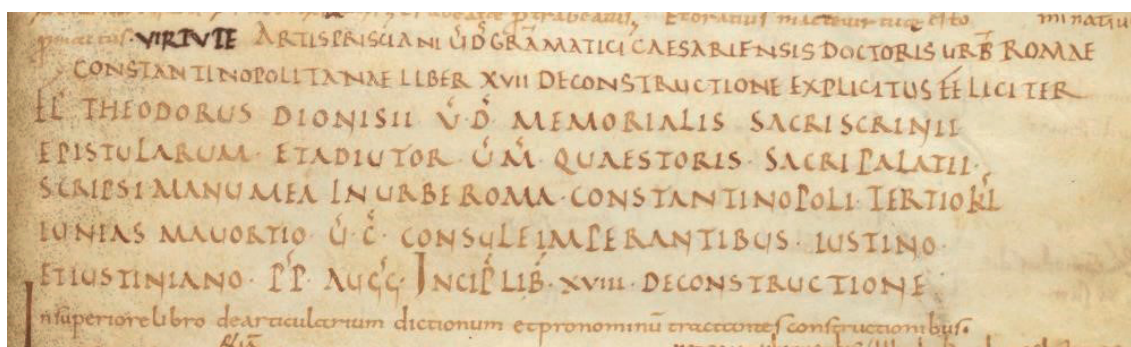


Figure 9: [Par. Lat. 7496](#), f. 203r. © Paris, Bibliothèque nationale de France

*Flavius Theodorus Dionisii vir devotus memorialis sacris scrinii
epistularum et adiutor viri magnifici quaestoris sacri palatii
scripsi manu mea in urbe Roma Constantinopoli tertio Kalendas
Iunias, Mavortio viro clarissimo consule, imperantibus Iustino
et Iustiniano perpetuis Augustis.*

As in today's books, display scripts were used in ancient manuscripts to stress and make the paratext clearly visible. With the expression "display scripts", scholars refer to those scripts that are of a higher grade and larger size than the script of the main text and that are used for titles, headings, chapter numbers, and so on in order to emphasise them (Jakobi-Mirwald 1999; Stirnemann – Smith 2007). For this reason, Uncial, Rustic Capital, and Square Capital scripts can be also found in the manuscripts transmitting Priscian's *Ars* otherwise in minuscule script. Among them, an example for the highly accurate use

¹⁷ For a recent overview on the topic see Andrist 2018.

of display scripts is represented by the codex Autun, Bibliothèque Bussy-Rabutin (Bibliothèque Municipale), S 44 (40).¹⁸ It stems from Tours, a centre of primary importance during the Carolingian Renaissance and renowned for the high-level manuscript production during the 9th century.¹⁹ Here, in the first decades of the century, a specific hierarchy of display scripts was developed: Square Capitals for major titles at the top of the hierarchy; Uncials for *incipits*, that is, the first words (usually, the whole first line) of the text; Half-uncials for prefatory texts; and, finally, Rustic Capitals for *explicit* formulas. In the Autun copy of Priscian's *Ars*, all these criteria are carefully respected as can be seen on folios 1r and 2r. Square Capitals are used for the intitulation (*Incipit ... patricio*), Uncials for the first line of the *praefatio* in red ink (*Cum omnis eloquentiae doctri-*), Half-uncials for the text of the *praefatio* (Fig. 10), and Rustic Capitals for the *explicit* formula at the end of the *tabula capitulorum*, which recalls the topic of each of the 18 books (Fig. 11).

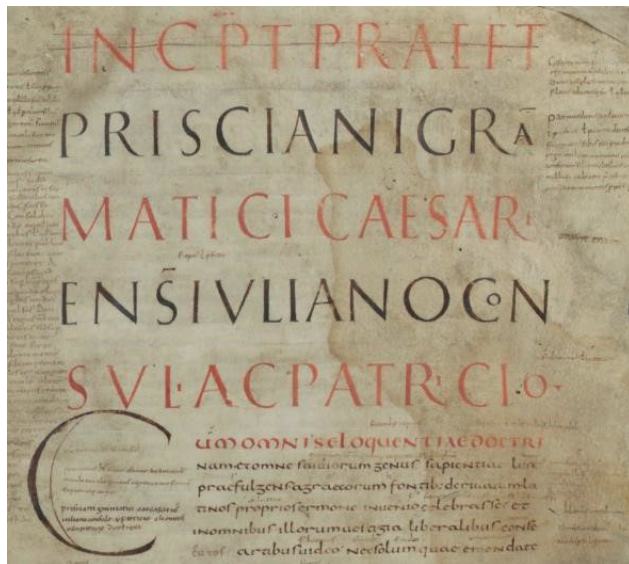


Figure 10: Autun, Bibliothèque Bussy-Rabutin (Bibliothèque Municipale), S 44 (40), f. 1r.
© Autun, Bibliothèque Bussy-Rabutin

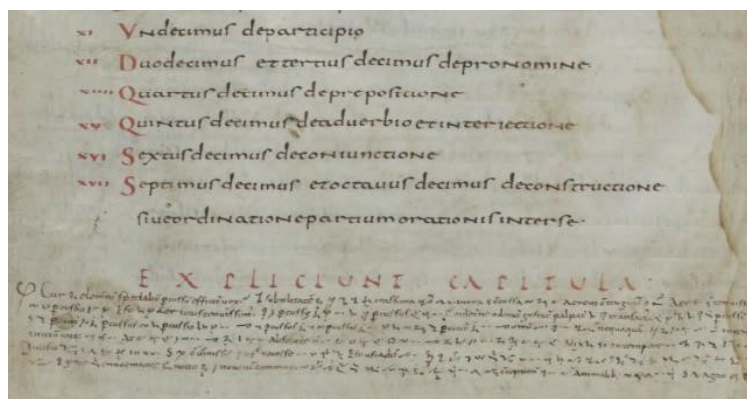


Figure 11: Autun, Bibliothèque Bussy-Rabutin (Bibliothèque Municipale), S 44 (40), f. 2r. © Autun, Bibliothèque Bussy-Rabutin

¹⁸ Passalacqua 1978, 17; Bischoff 1998, no. 168; von Büren 2004.

¹⁹ On Tours see Rand 1929; Rand 1934; Ganz 2020, 244–246.

Display scripts deserve the same consideration that palaeographers dedicate to the main text script, because they possibly show useful elements for dating or placing a manuscript more precisely. The same applies to the decoration, which is, however, only marginally attested in the corpus of early-medieval Priscian manuscripts.

2.5. Signs of use and reading

In order to discover more about the history of a manuscript and the use that was made of it over time, the writings that can be found in its margins (as well as between the lines of the text) are as valuable as the main content and the paratext.

Marginal and interlinear notes are of various types. There are for example glosses, that is words or phrases meant to clarify a word or a phrase of the main text by commenting on it or translating it. In some witnesses of the *Ars*, there is evidence of so-called syntactic glossing, which means the use of letters of the alphabet written between the lines, above words or phrases, with the purpose of suggesting the order in which they should be read as an aid for readers (Fig. 12).

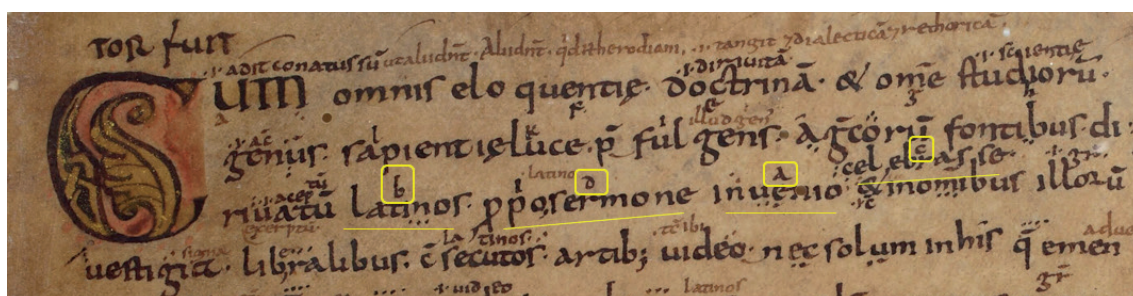


Figure 12: [Par. Lat. 10290](#), f. 3r. © Paris, Bibliothèque nationale de France

The margins of a manuscript can also contain various other signs of reading, including headings and keywords written along the main text to mark its articulation in sections on different topics, *notabene* signs, mostly in the form of a monogram, *maniculae* (which are, as their name implies, drawings of a hand with a pointing index finger), and so on. Thanks to these and similar annotations, scholars can get valuable information about the reception of the work transmitted by the considered manuscript. Marginal and interlinear notes in Priscian texts are thus worthy of attention, as they provide us with information about how the *Ars grammatica* was read and used for learning Latin grammar over the centuries, about which sections of the treatise aroused most interest among the medieval readers, and so on.

The margins of a manuscript, as well as its guard-leaves, often contain still other types of annotations, which are equally valuable because they provide scholars with information on the history of the book. For example, ownership notes allow us to know where or in whose hands the book was at a given moment in its history. Thanks to the ex-

libris written on the upper section of the first page of the manuscript (“Monasterii Sancti Petri Corbeiensis”), it becomes obvious that the above-mentioned Amiens manuscript comes from the library of the Corbie abbey. Sometimes scholars happen to face marginal annotations that promise to be potentially revelatory but then remain obscure due to their conciseness. This is the case with the entry (late 10th century?) of some masculine names in the lower margin of folio 23v in the previously mentioned Bamberg codex: “Luiboldus, Vogo, Hicco, Rudgerus et Luizo, Adelgisus”. This brief list might refer, for example, to the confreres of the person who wrote their names down, or it might indicate a series of abbots or bishops. The identification of these six men, if ever possible, would be quite relevant because it would reveal where the codex was preserved at that time and thus the cultural environment in which it was read and annotated.

3. Reading the medieval palimpsests (Michela Perino)

In this working paper, we introduce the ongoing research on the palimpsest manuscripts of the *Ars Prisciani*. Our aim is (i) to read the medieval palimpsests with multispectral imaging techniques and (ii) to analyse the various parchment supports with innovative procedures for the extraction and sequencing of DNA. The work is part of the ERC-funded project PAGES – 882588. The following figures of the paper are taken from the presentation given on September 23, 2022, at the CARMEN Seminar-Conference in Rome.

3.1. A brief overview on palimpsests

The word “palimpsest” comes from the Greek παλίμψηστος and means “a manuscript scraped clear for reuse”. Writings were generally removed with the help of pumice stone and washes, allowing the parchment to be newly available for another text, the latter called *scriptio superior* (Maniaci 2019). Invisible traces of removed writings (*scriptio inferior*) could remain on the parchment, and they can be recovered with different methods. Since the 19th century, scholars have tried to read the deleted texts in palimpsests by using chemical procedures. Among them, Angelo Mai applied an oak-gall solution to the pages of manuscript [Città del Vaticano, Biblioteca Apostolica, Vat. Lat. 5757](#). The attempt brought to light the *scriptio inferior* containing book IV of Cicero’s *De re publica* (Fig. 13).

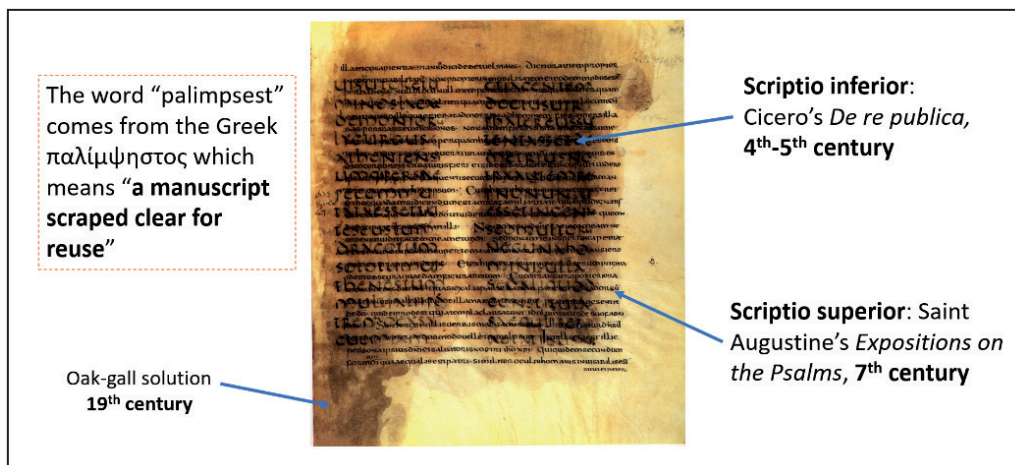


Figure 13: Vat. Lat. 5757, f. 277r. Traces of the deleted *De re publica* text by Cicero (*scriptio inferior*) were visible after the application of an oak-gall solution. Photo: https://commons.wikimedia.org/wiki/File:Cicero_De_re_publica_Vat_Lat_5757.jpg.

3.2. Methods for reading the *scriptio inferior*

Mai opened the way for the “palimpsest’s seekers” who aspired to rescue “lost” ancient manuscripts: they guessed that traces of a previous removed writing could be more legible by painting the manuscript page with chemical reagents (Timpanaro 1980; Lo Monaco 1996). Besides the increase in readability, the invasive method of reagents has often produced, especially in the hands of unskilled users, darkening, brown (gallic acid) or blue (potassium ferrocyanides) spots, and even the loss of the legibility of texts and irreversibly damaged manuscripts. In 1898, the St. Gallen Conference on the Conservation of Manuscripts disapproved the use of gallic acid, thiocyanate, ammonium sulphide, sodium sulphide, potassium ferrocyanide, and tannin solution as chemicals used to recover texts. The advent of personal computers and digital photography has favoured non-invasive experiments up to digital image processing and new types of technologies (Fig. 14).

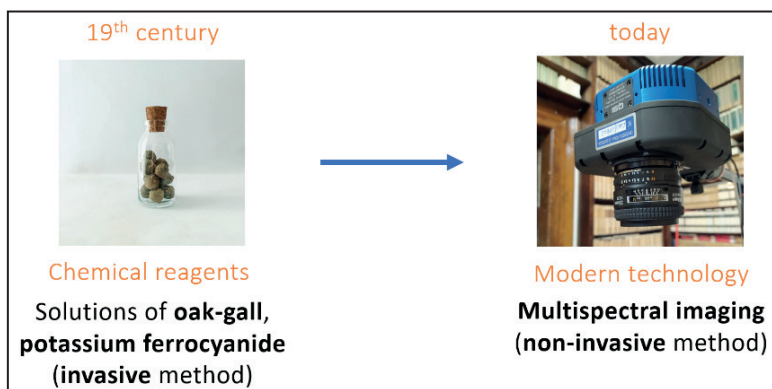


Figure 14: The transition from chemical reagents to modern technology has benefited the development of non-invasive methods. © themazi natural dyes (left); ERC-PAGES (right)

3.3. Multispectral imaging (MSI) for the PAGES project

Multispectral imaging (MSI) is one of the first technologies used to recover the *scriptio inferior* in palimpsests digitally (Knox et al. 2001). The portable MSI equipment funded by the PAGES project (Fig. 15) consists of a monochromatic camera equipped with a wheel containing band-pass filters and different radiation sources, including UV (ultra-violet), Vis (visible), and IR (infrared).



Figure 15: PAGES equipment for multispectral imaging.
© ERC-PAGES

3.4. The choice of equipment

It is important to note that the choice of equipment (Fig. 16), e.g. instrument technology, radiation source, and filters, depends on several factors (often not definable a priori), i.e.

- the conservation status of the manuscript,
- ink and parchment composition, and
- the parchment treatment.

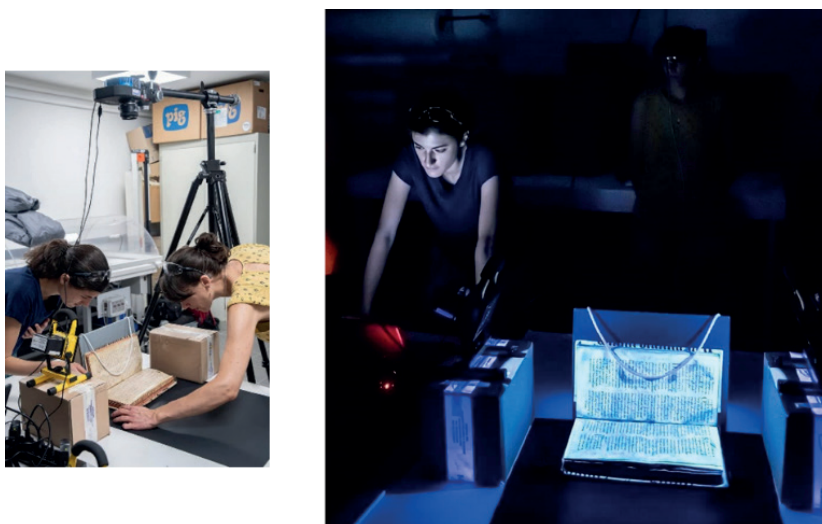


Figure 16: The equipment of choice for manuscript H141 moved for the analysis into the Atelier de conservation-restauration du Service de coopération documentaire interuniversitaire of the Université Paul-Valéry-Montpellier 3.
© SCDI de Montpellier

3.5. Montpellier, BUHM, H141

In July 2022, the PAGES equipment was moved to the Université Paul-Valéry-Montpellier 3 for the analysis of palimpsest manuscript H141 (Fig. 17a). The application of multispectral imaging increased the readability of the *scriptio inferior* on the thirty manuscript pages examined. Figure 17b shows the results of multispectral imaging using the UV radiation.

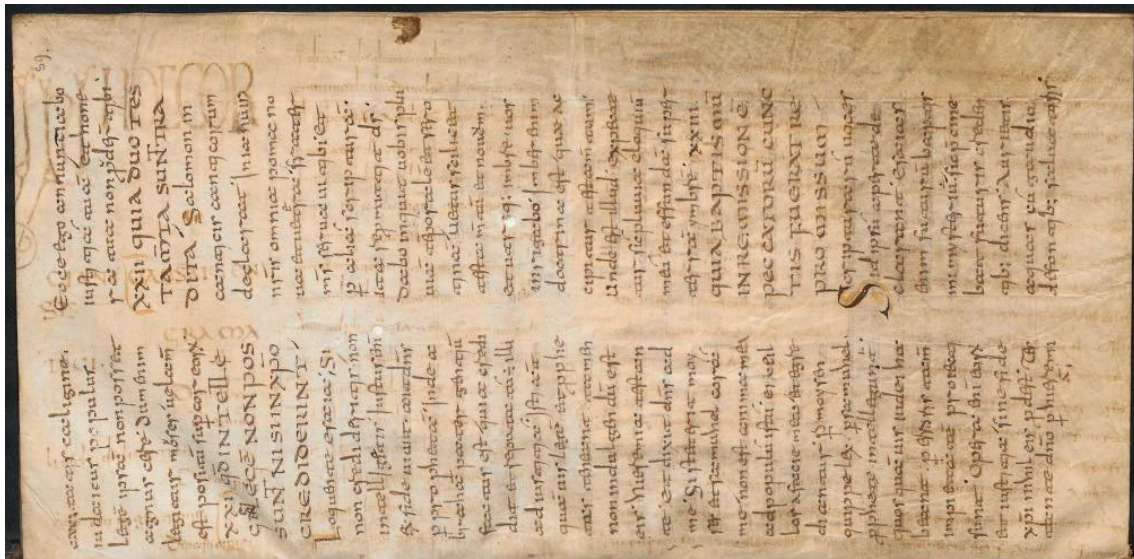


Figure 17a: Université de Montpellier (BUHM), Bibliothèque Universitaire Historique de Médecine, manuscript H141, f. 59r. © SCDI de Montpellier

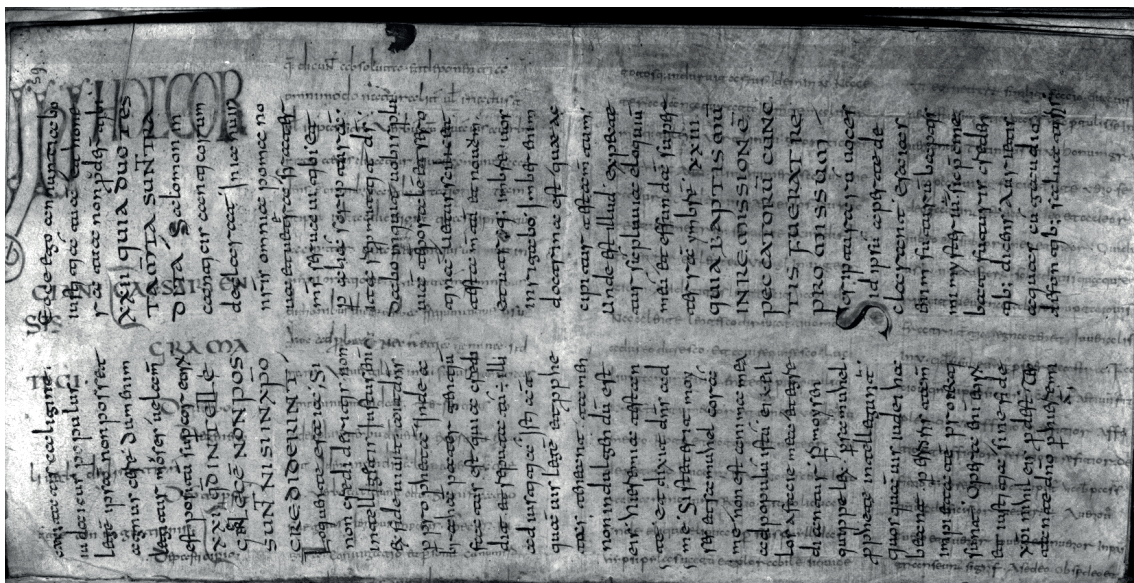


Figure 17b: Multispectral imaging with UV radiation and filter at 400 nm of the same page. © ERC-PAGE

3.6. Rome, Vallicelliana Library, C9

In March 2022, the PAGES equipment was moved to the Vallicelliana Library in Rome for the analysis of palimpsest manuscript C9 (Fig. 18). The conservation status of the manuscript and the removal methods of the *scriptio inferior* appeared very different compared to manuscript H141. For this reason, after the application of multispectral imaging, a more complex post-processing analysis is required to recover the text. The application of various methods of Artificial Intelligence (AI) is an ongoing research goal in collaboration with the Department of Basic and Applied Sciences for Engineering (S.B.A.I) of the Sapienza University of Rome.

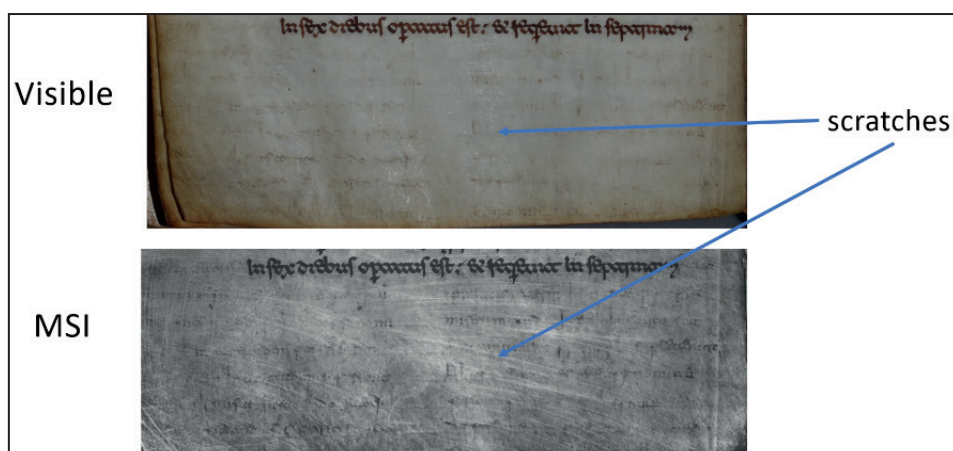


Figure 18: [Rome, Vallicelliana Library, C9](#), f. 156v with visible scratches (upper). Multispectral imaging with UV radiation and filter at 365 nm of the same page (lower). © ERC-PAGES

3.7. Parchment analysis

Innovative parchment analysis (Fig. 19) is part of a research collaboration with the Plant Pathology Laboratory of the Department of Environmental Biology of the Sapienza University of Rome. The aim is to characterise the species, type/breed, and sex of the animals used to produce parchment (see also <https://sites.google.com/palaeome.org/ercb2c/home>).



Figure 19: Sampling of the parchment with a standard eraser in Montpellier. © SCDI de Montpellier

3.8. Conclusions

We have outlined the aims and preliminary results of the ongoing research on palimpsests within the PAGES project. We used a non-invasive and portable multispectral imaging technology to recover text in palimpsests. Post-processing of images is generally required and includes various types of analysis (e.g. clustering algorithms, computer vision procedures, etc., not discussed in this paper). Additionally, the parchment analysis can provide knowledge about the production context of the manuscripts.

Editions of Priscian's *Ars*

Grammaticae Latinae auctores antiqui [...], opera & studio Heliae Putschii, Hanoviae 1605.

Prisciani Caesariensis grammatici Opera, [...] recensuit [...] Augustus Krehl, vol. I, Lipsiae 1819; vol. II, Lipsiae 1820.

Prisciani grammatici Caesariensis Institutionum grammaticarum libri XVIII ex recensione Martini Hertzii. Grammatici Latini II, Lipsiae 1855; III, Lipsiae 1859.

Prisciani Caesariensis Ars, Liber XVIII, pars altera 1, a cura di Michela Rosellini, Hildesheim 2015.

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