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A Case Study in Early Modern Latin Palaeography: Inscriptions of Southern Istria **

This article examines the palaeographic features of Latin lapidary inscriptions from Southern Istria dating from 1400 to 1900. By analysing a corpus of 239 inscriptions, it traces the shift from Gothic majuscule to Renaissance capitalis. It uses graphical presentations and statistical tests to identify subsequent changes around 1650 and 1800, marking the beginning and end of the Baroque period.

Keywords: Latin palaeography, early modern period, Southern Istria, inscriptions in churches, lapidary inscriptions

Status Quaestionis and Aim

Whilst Roman inscriptions from classical antiquity have received extensive scholarly attention, research on post-ancient inscriptions has been considerably less comprehensive. Even for basic documentation, the focus overwhelmingly remains on the ancient period.[1] The main bibliography on Greek and Latin inscriptions, *L'Année épigraphique* (1888-), covers only classical antiquity, as do the larg-

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[1] Here are some of the most notable collections of ancient Latin inscriptions, including an online database and, in some cases, material in Ancient Greek: *Corpus Inscriptionum Latinarum* (*CIL*, 1853-, https://cil.bbaw.de/), *Epigraphik-Datenbank Clauss / Slaby* (*EDCS*, 1980s-, https://db.edcs.eu/epigr/hinweise/hinweis-en.html/), *Trismegistos* (2005-, https://www.trismegistos.org/), *Electronic Archive of Greek and Latin Epigraphy* (*EAGLE*, 2013-, http://www.eagle-eagle.it/Italiano/index_it.htm/).

est specialist conference (*International Congress of Greek and Latin Epigraphy*, 1938) and journals (*Papyrologie und Epigraphik*, 1967-; *The Journal of Epigraphic Studies*, 2018-). This is understandable because, in earlier periods, inscriptions are extremely important historical sources, given the relative scarcity of other information-bearing objects. For medieval and (especially) early modern history, printed material and manuscripts contain most of the facts found on the inscriptions. Nonetheless, this does not mean that the epigraphic material lacks documentary or artistic value.[2]

Over the past decades, post-ancient epigraphy has developed steadily, increasingly establishing itself as a distinct sub-discipline, while medieval inscriptions have fared much better. In addition to studies concentrating on small groups of inscriptions, some larger-scale projects have documented medieval and modern epigraphic corpora in recent years.[3] Early modern material is typically collected alongside medieval inscriptions within a shared framework that, as a rule, extends beyond Latin inscriptions.[4] The project *Die Deutschen Inschriften des Mittelalters und der Frühen Neuzeit* spearheads these efforts not only by publishing the most comprehensive and detailed series of catalogues containing early modern inscriptions but also by organising specialised epigraphic conferences since 1980, accompanied by volumes of proceedings, systematically preparing a bibliography, and publishing manuals of medieval and early modern epigraphy.[5]

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[2] Cf. for this argument Rudolf Kloos, *Einführung in die Epigraphik des Mittelalters und der frühen Neuzeit* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1980), 5.

[3] To name only major national projects: *Corpus des inscriptions de la France médiévale* (1969-); *Corpus Inscriptionum Medii Aevi Helvetiae* (1971-1997); *Corpus Inscriptionum Hispaniae Mediaevalium* (1997-); Mário Jorge Barroca, *Epigrafia medieval Portuguesa (862–1422)* ([Lisbon:] Fundação Calouste Gulbenkian, Fundação para a Ciência e a Tecnologia, Ministério da Ciência e da Tecnologia, 2000) – a national, but limited project conducted by a single researcher; *Inscriptiones Medii Aevi Italiae* (2000-). An example of a sub-national level project is *Corpus Inscriptionum Medii Aevi Liguriae* (1978-, extending as far as the late 16th century). For a comprehensive overview of post-ancient epigraphy see Andreas Zajic, "Wissenschaftsgeschichte," in *Epigraphik des Mittelalters und der Frühen Neuzeit: eine Einführung*, eds. Helga Giersiepen and Andrea Stieldorf (Wiesbaden: Dr. Ludwig Reichert Verlag, 2025), 23–38.

[4] The projects operating at a national level are *Die Deutschen Inschriften des Mittelalters und der Frühen Neuzeit* (1934-) and *Corpus inscriptionum Slovaciae* (2012-), which extend to the mid-17th century, while *Corpus inscriptionum Poloniae* (1973-) and *Corpus inscriptionum Bohemiae* (1996-) reach 1800. *Die Deutschen Inschriften* has a digital version, called *Deutsche Inschriften Online*, but most of the non-ancient projects provide only traditional, printed catalogues. See Walter Koch, "Epigraphy," in *Handbook of Medieval Studies*, ed. Albrecht Classen (Berlin; New York: De Gruyter, 2010), 489–505; Walter Koch, "Die großen westlichen Corpuswerke zu den mittelalterlichen und frühneuzeitlichen Inschriften," in *Inscriptions in Byzantium and Beyond. Methods – Projects – Case Studies*, ed. Andreas Rhoby (Wien: Österreichische Akademie der Wissenschaften, 2015), 79–92.

[5] Fifteen volumes of proceedings have been published as of 2025, and the sixteenth volume is currently being prepared. The *Epigraphische Forschungs- und Dokumentationszentrum* at the Ludwig-Maximilians-Universität München produces supplementary materials and publishes them on the *Epigraphica Europea* platform (https://www.epigraphica-europea.uni-muenchen.de/). The online bibliography is

In 2021, members of the project team began publishing the open-access journal *Archiv für Epigraphik*, dedicated to post-ancient epigraphy.[6]

In this paper, I provide a basic overview of the palaeographic features of an early modern Latin epigraphic corpus. The objective is to identify chronological trends within a geographically limited collection that spans the late Middle Ages through the Renaissance, Baroque, and Classicism.

Epigraphic palaeography (*Inschriftenpaläographie*) is an important branch of epigraphy and holds a marginal position within palaeography. While ancient and medieval inscriptions have been extensively studied, the Early Modern Period has largely remained uncovered.[7] Several studies shed light on the creation and dissemination of the so-called Renaissance capitalis during the Humanist period, but no systematic work has been conducted on the subsequent centuries.[8] The few conclusions drawn from the research relate to print and suggest that the Baroque period does not introduce any novelty in letter forms, instead presenting a transitional phase from Renaissance capitalis to the classicist Antiqua. This transition is characterised by less pronounced concave junctions with serifs, a stronger contrast between thinner and thicker lines, and the vertical positioning of the stress axis. Scholars have also observed that, from the mid-19th century onward, there was a renewal that can be called Neo-Renaissance.[9]

So far, studies have concentrated on the transition between medieval and humanistic types of inscriptions, which is believed to have occurred in Italy between the 1430s and 1520s, and in Central Europe during the early decades of the

Franz-Albrecht Bornschlegel, ed., "Epigraphica Europea. Literaturdatenbank zur Erforschung der Inschriften des Mittelalters und der Neuzeit," in *Epigraphica Europea* (Ludwig-Maximilians-Universität München, 2023-), accessed 23 December 2025, https://www.epigraphica-europea.uni-muenchen.de/. Previously, four bibliographic volumes have been printed in 1987, 1994, 2002, and 2005. The manual-publishing work began with Kloos, *Einführung*, and culminated recently with Helga Giersiepen, Andrea Stieldorf, eds., *Epigraphik des Mittelalters und der Frühen Neuzeit: Eine Einführung* (Wiesbaden: Dr. Ludwig Reichert Verlag, 2025).

[6] Its web address is https://www.epigraphik.org/.

[7] See Joyce S. Gordon, Arthur E. Gordon, *Contributions to the Palaeography of Latin Inscriptions* (Berkeley; Los Angeles: University of California Press, 1957), 66; Kloos, *Einführung*, 143; Walter Koch, *Inschriftenpaläographie des abendländischen Mittelalters und der früheren Neuzeit. Früh- und Hochmittelalter* (Wien; München: R. Oldenbourg Verlag, 2007), 26. The second volume of the latter book was never published. An updated survey, pointing to the prospect of "comparative European palaeography of inscriptions", is provided by Franz-Albrecht Bornschlegel, "Epigraphik des Mittelalters und der Frühen Neuzeit," *Archiv für Diplomatik, Schriftgeschichte, Siegel- und Wappenkunde* 65 (2019): 237–266.

[8] Such studies are most notably those collected in Gertrud Mras, Renate Kohn, *Epigraphik 2000: Neunte Fachtagung fur mittelalterliche und neuzeitliche Epigraphik*, *Klosterneuburg, 9.-12. Oktober 2000* (Wien: Verl. der Osterr. Akad. der Wiss., 2006).

[9] Kloos, *Einführung*, 161–164. To avoid confusion, the following distinction is adopted here: "majuscule" refers to capital letters, as opposed to "minuscule," while "capitalis" is the standard humanist epigraphic style that imitates ancient inscriptions.

16th century.[10] Since later periods have been less thoroughly studied, the formal structure of the epigraphic script after the 16th century remains unknown. This paper aims to expand this area of research through a case study.

The analysis will address several topics commonly examined in this type of investigation, such as text alignment, script regularity, use of small majuscule letters, characteristics of individual letter forms, employment of *nexus litterarum*, relative letter positioning, and the use of punctuation and abbreviating signs.[11]

Corpus and Methodology

The corpus under consideration comprises Latin lapidary inscriptions from 1400 to 1900 found in the churches of Southern Istria, a peninsula at the northern tip of the Adriatic Sea. About 90% of the region is in Croatia, with smaller parts in Slovenia and Italy to the north. Southern Istria here is defined by its Roman Catholic ecclesiastical division and includes three deaneries: Pula, Rovinj-Kanfanar, and Vodnjan. For much of the period examined (up to 1797), this area was governed by the Republic of Venice; afterwards, it was transferred to the Austrian Empire / Austria-Hungary, having been under Napoleonic France only from 1805 to 1814.

The South Istrian churches with Latin inscriptions are almost exclusively Roman Catholic. As a rule, I have included in the analysis only inscriptions that are explicitly dated or can be approximately dated.[12] Furthermore, only those inscriptions with the main part of the text in Latin have been included. Many inscriptions written in Italian, containing only standard phrases such as Q(VONDAM) and A(NNO) D(OMINI) in Latin, have therefore been excluded from this study. As of late 2025, a total of 239 relevant inscriptions have been collected and added to the epigraphic wiki database created as part of a research project documenting the corpus.[13]

[10] For Italy see Iiro Kajanto, "Notes on the language in the Latin epitaphs of Renaissance Rome", *Humanistica Lovaniensia* 28 (1979): 167, 168–169; JoAnne Gitlin Bernstein, "Iiro Kajanto. Classical and Christian: Studies in the Latin Epitaphs of Medieval and Renaissance Rome. (Annales Academia (!) Scientiarum Fennica (!), Ser. B, Tom. 203.) Helsinki: Suomalainen Tiedeakatemia Press, 1980, 170 pp., 30 illus. Fmk. 65.", *Renaissance Quarterly* 34 (1981), no. 3: 414. for Central Europe see the edited collections Walter Koch, ed., *Epigraphik* 1988 (Wien: Österreichische Akademie der Wissenschaften, 1990), and Mras, Kohn, eds., *Epigraphik 2000*, as well as Robert Favreau, *Épigraphie médiévale* (Turnhout: Brepols, 1997), and Koch, *Inschriftenpaläographie*, 2007.

[11] On the elements of epigraphic palaeographic analysis, see Favreau, *Épigraphie médiévale*, 59–60 and Koch, *Inschriftenpaläographie*, 27 (the same in English: Walter Koch, "Epigraphy", 490). This research paper's approach combines their task lists, but due to space constraints, it does not include all possible elements exhaustively.

[12] If an undated inscription is interesting but clearly from the period, and the exact time is irrelevant to the feature being examined, it is included.

[13] There are still a few churches to examine, but most of the material has been gathered. Refer to the note on funding for details about the project. The database is available at https://lapis.fhs.unizg.

Several types of inscriptions can be identified.[14] The most straightforward is the funerary type in the form of a gravestone (a horizontally lying quadrangular slab covering a grave or sarcophagus) or an epitaph (a vertical monument, usually placed against a wall). The second type commemorates an occasion, which can range from a historical event (such as the arrival of reliquies or a visit by a dignitary), or an act of charity (like an endowment or donation), to a building project (such as an erection, renovation, extension, restoration, or consecration, sometimes following a disaster), or the enactment of a legal document (like entering a contract or bestowing indulgences and privileges). Lastly, some inscriptions are not connected to any specific transaction but instead convey a moral message or motto (sometimes as a quotation) or provide information about the place's function. The distribution of our corpus across these three broad categories (Figure 1) shows that most inscriptions fall into the commemorative group.[15]

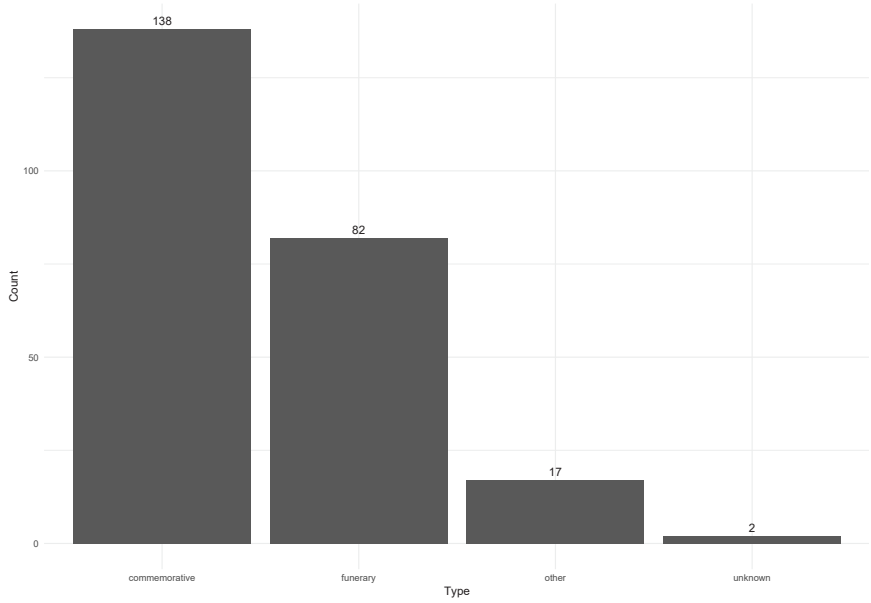

Figure 1. Distribution of the types of inscriptions in the corpus

hr:4433/wiki and will be publicly accessible upon completion. As the database contains not only inscriptions in Italian, Greek, and German, but also those created after 1900, the total number of items is 439 as of 31 December 2025.

[14] On inscription types in general, see Kloos, *Einführung*, 76; Favreau, *Épigraphie médiévale*, 31–46, and the introductory studies to the individual volumes of the *Die Deutschen Inschriften* series, e.g. Ramona Baltolu, Mirjam Goeth, Tanja Kohwagner-Nikolai, Christine Steininger, eds, *Die Inschriften der Stadt Landshut* (Wiesbaden: Dr. Ludwig Reichert Verlag, 2022). A synthetic overview is provided in a separate section of Giersiepen, Stieldorf, eds., *Epigraphik 2000*, 143–234 (the authors are Franz Jäger, Ulrike Spengler-Reffgen, Kristine Weber, Susanne Kern, Gertrud Mras, Martin Riebel, Christine Magin, Cornelia Neustadt, Jan Ilas Bartusch and Sonja Herman).

[15] Two inscriptions are damaged to such an extent that their function could not be determined.

The 187 inscriptions with at least an approximate year of composition have been chronologically arranged as shown in Figure 2.

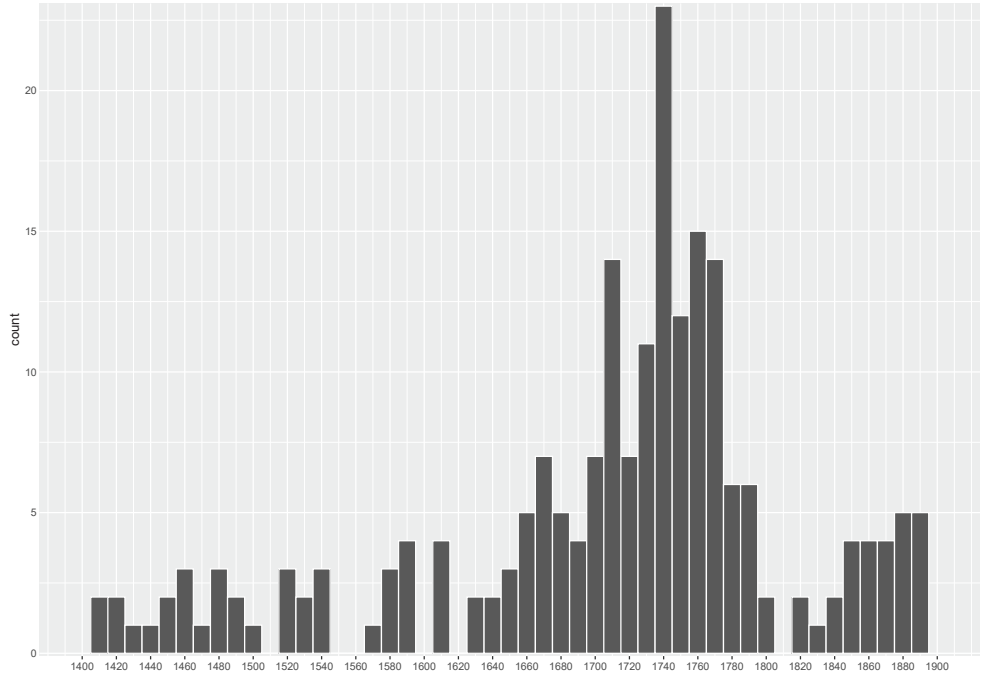

Figure 2. Chronological distribution of the inscriptions in the corpus

It is evident that from the mid-17th century onwards, the frequency increases and peaks in the 18th century. While the lower number of items in the earlier period reduces the balance of the corpus (and necessitates the use of statistical tests to verify trends), the abundance of later material offers an opportunity for close examination of the developments in the period that, as mentioned above, has not been extensively studied. In the following sections, the palaeographic analysis will show how the late medieval (Gothic) epigraphic style transitioned to the classicising Renaissance capitalis, and the changes that followed in subsequent centuries.

General Outlook

Three features of any inscription that immediately stand out, even before starting to read, are text alignment, regularity of the script, and the use of majuscule, minuscule, or small capital letters. All of these showcase the stonecutter's artistry, but they also sometimes hint at the relationship the artisan aimed to establish with the epigraphic tradition.

Text Alignment

Ancient Roman inscriptions typically had either a straight left-hand margin or were symmetrically aligned around the central vertical axis, arranged into lines of varying lengths. In the Middle Ages, the standard practice was to maximise space by extending the text from left to right, as on paper or parchment, even employing end-line word division.

During the Renaissance, as modelling inscriptions according to ancient practice became fashionable, cutters increasingly centred the text within inscriptions. The cutters active in Rome drew inspiration from early editions of ancient Roman inscriptions (e.g., Mazzochi's *Epigrammata antiquae urbis*, 1521, and Apian's *Inscriptiones sacrosanctae vetustatis*, 1534). The style in which lines are of unequal lengths and each line (or pair of lines) forms a syntactic whole, became popular in the latter half of the 16th century and, in some regions, was even predominant in the 17th century, often evolving into what was later called the lapidary style. Around the same time, printers adopted this approach, and the layout was used in published books. By the end of the Baroque period, this mannerism in print faded, although centred alignment continued to feature prominently in inscriptions.[16]

The chronological distribution of alignment types in our corpus is depicted in Figure 3.[17]

Economical filling of space from side to side appears to be the most consistent layout across the corpus. Although there is a significant increase in the total number of inscriptions in the latter half of the 17th century (see Figure 2), the proportion of inscriptions justified on both sides actually decreases in relative terms. This decline is statistically significant in 1650 for the overall corpus trend (p-value = 0.015), but not for the Baroque period (1650–1800) when considered separately (p-value = 0.68).[18] This indicates that the notable decline in these inscriptions occurs during the shift from the Renaissance to the Baroque period, but the Baroque itself does not cause it. In 19th-century classicism, the pattern is much clearer, as the figure displays only one such inscription.

[16] See Raija Sarasti-Wilenius, "Latin lapidary style in Finland," *Arctos – Acta Philologica Fennica* 25 (1991): 121–132; Iiro Kajanto, "On lapidary style in epigraphy and literature in the sixteenth and seventeenth centuries," *Humanistica Lovaniensia* 43 (1994): 137–172.

[17] In the analysis of text positioning, only inscriptions with line breaks were included to ensure that the distinction between different alignments makes sense (as some short inscriptions are centred simply because they are too brief to be aligned on both sides). Inscriptions were also excluded when alignment could not be determined, along with one inscription that had right-side alignment.

[18] In all statistical calculations, Fisher's Exact Test was employed. When the smallest value in the contingency tables was considerably larger than 5, the results were verified using Pearson's Chi-square Test.

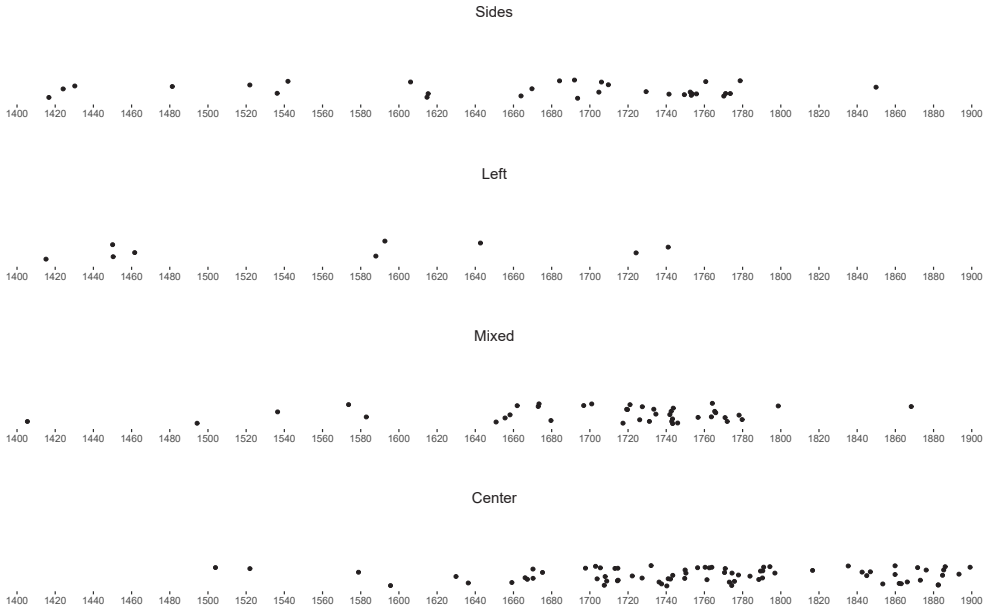

Figure 3. Distribution of various types of text alignment in the corpus

Left alignment is rare and absent in both the High Renaissance and Classicism periods, suggesting it was more common in late medieval and Baroque inscriptions, especially given the overall rise in inscription quantity in the corpus. More data are required for a well-founded conclusion.

The mixed type is of particular interest: apart from a few inscriptions where alignment is inconsistent due to a lack of artistry, in most cases the core part extends from side to side, with the first and/or last line shorter and centred. These inscriptions demonstrate the cutter's aim for symmetry but do not represent the true lapidary style. The chronology of the inscriptions suggests a statistically significant increase in use during the Baroque period (p-value < 0.01), but not for the entire period after 1650 (p-value = 0.62). This means that the mixed alignment is a form of Baroque mannerism.

Centred inscriptions do not feature prominently until the later part of the 16th century, after which they become increasingly common in the corpus. During the 18th century, this layout still competes with other types (though it outnumbers them), whereas in the 19th century, all other types almost vanish. The increase after 1650 is highly significant (p-value < 0.01), but not for the Baroque style alone (p-value = 0.40). Therefore, central alignment is not specific to this style but reflects a broader trend over a much longer period, and it is inversely related to the decline in the number of inscriptions aligned on both sides. These findings squarely fit in what is described in the existing literature: the central alignment trend that originated in Italy extended to Istria by the mid-Seicento

and was never reversed, continuing throughout the 19th century, during which all but two inscriptions are centred.

Most of the clearest examples of genuine lapidary style, that is, a stark contrast between long and short lines and syntactic divisions between the lines, are found on commemorative inscriptions, especially those placed prominently, such as on façades (Figure 4).



Figure 4. Example of an inscription presented in the so-called lapidary style (PP-17.1.1, 1882)

Regularity of Script

Another immediately observable trait is the contrast between inscriptions written exclusively in regular majuscule letters and those characterised by uneven letter shapes and horizontal alignment, which do not align neatly on the baseline. The regularity of the script points to the importance of the inscription, the skill of the cutter, and the amount of work (and money) invested in its creation.

One might expect that inscriptions of a more public nature would attract stronger funding than those commissioned by private individuals, who predominantly commissioned funerary inscriptions and were often not very wealthy. This expectation is confirmed when the inscriptions are categorised into commemorative and funerary groups: 87 neatly cut inscriptions are commemorative, whereas only 28 are funerary (p-value < 0.01). The chronological distribution is presented in Figure 5.

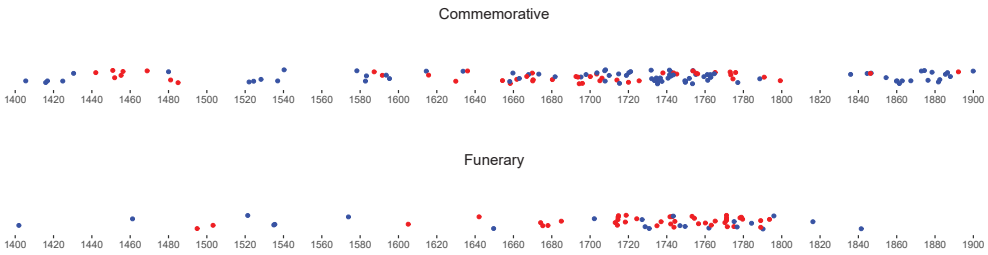

Figure 5. Regularity of lettering in the corpus. Blue and red dots represent regular and irregular settings, respectively

While regular inscriptions were made throughout the period, irregular ones are mainly restricted to two periods: the second half of the 15th century and the late 16th century, with a continuation into the end of the 18th century. The first period marks a transitional phase between regular uncial script and the High and Late Renaissance, while the second coincides with the emergence of the Baroque in the region. Conversely, only a very small number of inscriptions from the 16th century (High Renaissance) and 19th century (Classicism) are irregular. A preference for regularity is statistically significant for the 16th (p-value = 0.012) and 19th (p-value < 0.001) centuries, and irregular inscriptions are notably frequent in the Baroque (p-value < 0.01).[19]

The irregular inscriptions do not appear significantly more frequent, either in the 15th century (p-value = 0.64) or in the period after 1650 (p-value = 0.61).

Although the cutters aimed for central vertical alignment throughout the Baroque period—and were mostly successful—they more often failed or chose not to reinforce this trend by producing uniformly even letter shapes, a considerably more complex achievement. It was only in the 19th century that cutting regular inscriptions became the standard norm.

Small Majuscule

The third trait relating to the overall appearance of the inscription text is the use of two heights of majuscule letters, usually to emphasise word-initial letters (sometimes with different colouring) or more important parts of the text. Small majuscule letters—or small cap(ital)s—are therefore only used in conjunction with normal majuscule letters, as they differ from each other solely in size. They are an early modern phenomenon, first documented in written material in the 1470s and popularised by Johann Froben, a printer from Basel, from 1515 onwards.[20]

[19] No significance is suggested for the Renaissance if its upper limit is set at 1650 (p-value = 0.21).

[20] See Margaret M. Smith, "The pre-history of 'small caps': from all caps to smaller capitals to small caps," *Journal of the Printing Historical Society* 22 (1993): 79–106.

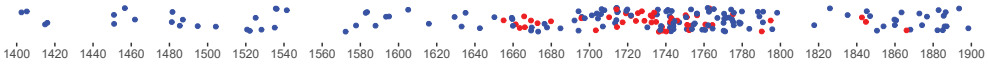

Figure 6. Distribution of the inscriptions written in small (red) and regular (blue) majuscule

The distribution of inscriptions written in small majuscule compared to regular majuscule (Figure 6) indicates that small majuscule does not appear in the corpus before the High Baroque period, around the mid-17th century. It remains prominent until the end of the following century (p-value < 0.001). Although it never surpasses equal-height lettering, it is nearly absent without the Baroque period.[21]

In the subsequent analysis, we explore the development of specific traits in the individual letter forms.

Individual Letter Forms

Letter forms in early modern inscriptions are derived from two main sources: ancient Roman epigraphy and medieval tradition. In the earliest part of the period, roughly corresponding to the 15th century, a strong presence of late-medieval writing style is evident: the inscriptions are either entirely or partially written in Gothic letters. With the onset of the Renaissance, ancient-style capitalis became dominant and, during the 16th century, the sole framework for shaping letters in the inscriptions of the corpus. Although further changes do not mark such a profound break as to constitute the birth of a completely new lettering style—Kloos refers to them as "small variants of style"—the evolution did not cease there: as we will see below, individual letter features continued to evolve.[22]

From Gothic Script to Early Modern Capitalis

The first phase of letter form development in the corpus begins with purely Gothic majuscule inscriptions around 1400 and concludes in the 16th century with

[21] The difference between commemorative and funerary inscriptions is not statistically significant (p-value = 0.26).

[22] Kloos, *Einführung*, 4. Other early modern epigraphic letter forms—such as cursive, Baroque minuscule, Fraktur, and Gotico-Antiqua—are not present in the corpus. Only one inscription (PP-31.1.3, from 1791) features (non-isolated) minuscule letters, which have been used in German-speaking regions since the 16th century (Kloos, *Einführung*, 152; Koch, *Inschriftenpaläographie*, 53; Hans Fuhrmann, "Humanistische Minuskel," in *Epigraphik des Mittelalters und der Frühen Neuzeit: Eine Einführung*, eds. Helga Giersiepen and Andrea Stieldorf (Wiesbaden: Dr. Ludwig Reichert Verlag, 2025). Alphanumeric codes refer to the online wiki database of the inscriptions of Southern Istria: https://lapis.fhs.unizg.hr:4433/wiki/index.php/LAPIS_-_Latin_Inscriptions_in_Istria.

a full shift to early modern capitalis, an archaising style inspired by the monumental Roman script from ancient sources that were increasingly examined and idolised by Italian humanists.[23] Inscriptions with majuscule Gothic letters appear north of the Alps in the second half of the 13th century and are used, more so in Central Europe than in Italy, until the 16th century.[24] Unlike Gothic minuscule, which uses broken, straight strokes instead of round lines, Gothic majuscule features uncial letters. These often have curves where classical capitals have straight lines or corners, such as spiral 'G', round or epsilon-shaped 'E', and curved strokes with rounded corners in 'A', 'M', 'N', and 'U/V'.

Other morphological features of such letters include hairlines closing certain letters (e.g., 'C', 'E', 'M', 'U/V') or having open strokes so close to each other that they almost form a closure; closed letters being open (such as 'A' without a crossbar, inverse-'C'-shaped 'D'); knots and lumps in the middle of strokes or at their ends; widened and wedge-shaped stroke endings; majuscule letters resembling modern minuscules ('d', 'h', 'n'); additional strokes (such as a top horizontal bar, or trabs, on 'A'); and strokes cut differently ('L' with a very sharp angle, 'P' with a large bowl, 'R' with a backward-running rolled cauda, M with parallel stems and a raised middle part, short middle strokes in 'H', 'M' and 'N', and amygdaloid or oval 'O').[25] Apart from the typical letter forms, pre-Renaissance scripts are characterised by enclosed and superimposed letters, as well as a relatively large number of ligatures and swashes at stroke endings.

During the transition period, roughly from the start of the 15th century to the 1520s, Gothic majuscule was gradually replaced by early modern capitalis. This transition happened at different times in various regions, rather than suddenly.

[23] Franz-Albrecht Bornschlegel, "Renaissance-Kapitalis und Kapitalis der Frühen Neuzeit," in *Epigraphik des Mittelalters und der Frühen Neuzeit: Eine Einführung*, eds. Helga Giersiepen and Andrea Stieldorf (Wiesbaden: Dr. Ludwig Reichert Verlag, 2025), 340–341, presents "Renaissance-Kapitalis" as marked by the programmatic adherence to ancient models, and "Kapitalis der Frühen Neuzeit" as its later extension, independent of the initial ideological basis. As the corpus contains, from the onset of the humanist period, modern-style inscriptions that do not strictly follow humanist principles, the term "early modern capitalis" is used here purely in a chronological sense and Renaissance capitalis as its subset.

[24] Kloos, *Einführung*, 132–133; Favreau, *Épigraphie*, 85–87; Clemens M. M. Bayer, "Versuch über die Gestaltung epigraphischer Schriften mit besonderem Bezug auf Materialien und Herstellungstechniken," in *Inschrift und Material. Inschrift und Buchschrift*, eds. Walter Koch and Christine Steininger (München: Bayerische Akademie der Wissenschaften, 1999), 102; Koch, *Inschriftenpaläographie*, 51–52.

[25] See Kloos, *Einführung*, 129–155; Renate Neumüllers-Klauser, "Epigraphische Schriften zwischen Mittelalter und Neuzeit (Grundsatzreferat)," in *Epigraphik 1988*, ed. Walter Koch (Wien: Österreichische Akademie der Wissenschaften, 1990), 315–328; Rüdiger Fuchs, "Übergangsschriften (Diskussionsbeitrag)," in *Epigraphik 1988*, ed. Walter Koch (Wien: Österreichische Akademie der Wissenschaften, 1990); Favreau, *Épigraphie*, 83; Rüdiger Fuchs, "Gotische Majuskel," in *Epigraphik des Mittelalters und der Frühen Neuzeit: Eine Einführung*, eds. Helga Giersiepen and Andrea Stieldorf (Wiesbaden: Dr. Ludwig Reichert Verlag, 2025), 310–319.

The process involved initial appearances of occasional features and whole letters of the new or—more precisely—renewed script in otherwise Gothic majuscule inscriptions. Gradually, in the latter half of the 15th century, a new style of script gained prominence; from that point, inscriptions in early modern capitalis with sporadic Gothic features are observed, and this style subsequently becomes less common.[26]

The corpus begins with seven inscriptions—spanning the years 1400 to 1431—that feature uncial letters; an additional five, undated but likely from the same century, also do. The proportion of inscriptions in capitalis increases, so that among the 11 created from 1431 onwards until the end of the 15th century, only three include uncial letters. Although the earliest inscription without them dates to 1442, it only displays the year; the first with letters is from 1451. The most recent example of a Gothic majuscule inscription is from 1468. A graphical representation of the distribution of inscriptions, based on whether they contain uncials, shows that the transition took place, as elsewhere, during the course of the 15th century (Figure 7).

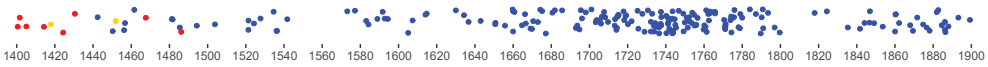

Figure 7. Distribution of letter styles (red: Gothic majuscule, blue: early modern capitalis, gold: early modern capitalis with some Gothic majuscule letters)

Uncial letters in the corpus are characterised by swellings in the middle of curved strokes (PP-17.1.23, 1400; PP-8.3.1, 1406; X-M.1.27, 1415; PP-30.1.2, 1425; PP-28.6.3, 1431; X-M.1.24). Serifs are mostly wedge-shaped, sometimes more pronounced than in the capitalis.

[26] Millard Meiss, "Toward a more comprehensive Renaissance palaeography," *The Art Bulletin* 42 (1960), no. 2: 98; Kloos, *Einführung*, 148–156; Walter Koch, "50 Jahre Deutsches Inschriftenwerk. Das Unternehmen der Akademien und die epigraphische Forschung," in *Deutsche Inschriften. Fachtagung für mittelalterliche und neuzeitliche Epigraphik, Lüneburg 1984*, ed. Karl Stackmann (Göttingen: Vandenhoeck & Ruprecht, 1986), 33; Franz-Albrecht Bornschlegel, "Die frühe Renaissance-Kapitalis in Augsburg," in *Epigraphik 1988. Fachtagung für mittelalterliche und neuzeitliche Epigraphik. Graz, 10.-14. Mai 1988. Referate und Round-Table-Gespräche*, ed. Walter Koch (Wien: Österreichische Akademie der Wissenschaften, 1990), 217–225; Neumüllers-Klauser, "Epigraphische Schriften"; Fuchs, "Übergangsschriften"; Martin Steinmann, "Überlegungen zu 'Epigraphische Schriften zwischen Mittelalter und Neuzeit' (Diskussionsbeitrag)," in *Epigraphik 1988. Fachtagung für mittelalterliche und neuzeitliche Epigraphik. Graz, 10.-14. Mai 1988. Referate und Round-Table-Gespräche*, ed. Walter Koch (Wien: Österreichische Akademie der Wissenschaften, 1990), 329–330; Walter Koch, "Zur sogenannten frühhumanistischen Kapitalis (Diskussionsbeitrag)," in *Epigraphik 1988. Fachtagung für mittelalterliche und neuzeitliche Epigraphik. Graz, 10.-14. Mai 1988. Referate und Round-Table-Gespräche,* ed. Walter Koch (Wien: Österreichische Akademie der Wissenschaften, 1990), 337–345; Koch, "Epigraphy," 499, 502–503.

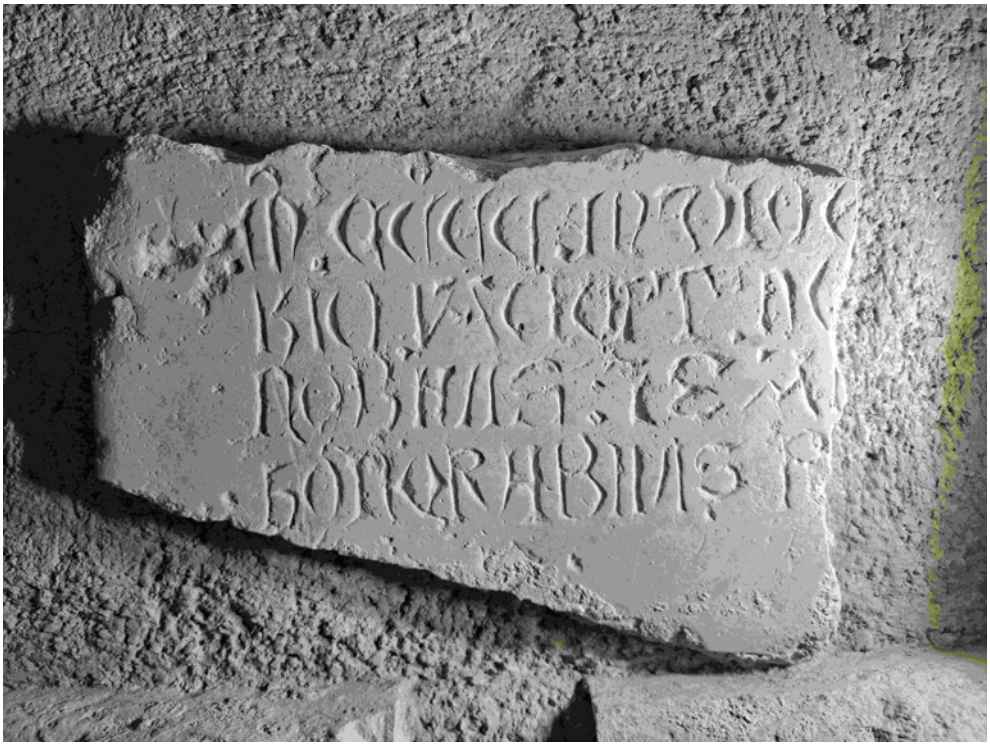

Figure 8. The earliest inscription in the corpus (PP-17.1.23, 1400) with its characteristic prolonged and detached vertical strokes



Figure 9. A typical Gothic majuscule inscription in the corpus (X-M.1.27, 1415)

The earliest inscription in the corpus (PP-17.1.23, 1400, Figure 8) differs from later material by having fewer curved strokes (except for 'S'), vertical strokes in letters such as 'A', 'D', 'L', 'M', and 'O' are separated, and serifs are either V-shaped or ab-

sent. The horizontal bottom bar of 'L' is here nearly vertical, almost as long as the stem, and even detached from it ('HONORABILIS' in the bottom line). Even the hairlines closing 'C' and 'E' are disconnected from their respective letters (see the year 'M CCCC' at the top). Letters in later Gothic inscriptions show considerably more winding curves; each letter forms a compact whole, and serifs are wedge-shaped and sometimes very prominent (a typical example is shown in Figure 9).

The letter 'A' usually has a rounded or wide flat top (rather than being pointed or narrow, as in capitalis). The trabs, if present, is generally extended only to the left. Except for one inscription (PP-8.3.1, 1406), in which both legs are straight (though asymmetrical), the left leg is curved, while the right is straight (see examples of all letters in Figure 10).



Figure 10. Characteristic letter shapes in the 15th-century inscriptions from the corpus

Bows in 'B' can be vertically symmetrical (X-M.1.27, 1415; X-M.1.22; PP-8.1.5, 1451) or feature a larger upper loop (PP-28.6.3, 1431).

'C' is only in some cases regularly closed by a hairline (PP-17.1.23, 1400 – but the hairline is separated; X-M.1.22; in PP-30.1.2, 1425, the line is very thick). The presence of the closing line is more often inconsistent (PP-8.3.1, 1406; X-M.1.27, 1415; X-M.1.18; PP-22.1.1).

In most inscriptions, 'D' appears similar to 'd' and has a short, typically horizontal and left-tilted, sometimes wedge-shaped upper stroke (PP-17.1.23, 1400; PP-8.3.1, 1406; X-M.1.27, 1415; X-M.1.18; PP-8.3.2; X-M.1.22). There is only one example of a predominantly Gothic inscription containing a majuscule-formed 'D' (PP-28.6.3, 1431), which is not part of capitalis but resembles an inverted 'G'.

In these Gothic inscriptions, 'E' is, without exception, round and sometimes epsilon-shaped. Occasionally, it is closed with a hairline (PP-28.6.3, 1431; X-M.1.18; PP-8.3.2; X-M.1.22; X-M.1.23; X-M.1.24), and at times its middle horizontal stroke is wedge-shaped (X-M.1.27, 1415; PP-8.3.1, 1406—here it is even detached from the rest).

When coming across a 'G', it is spiral, without straight lines (X-M.1.18; PP-8.3.2; X-M.1.22; X-M.1.24), whereas 'h' is exclusively formed like a modern lowercase, featuring a long, curved tail (PP-17.1.23, 1400; PP-28.6.3, 1431; PP-31.16.1, 1468; PP-8.3.2; X-M.1.22; X-M.1.24). 'I' is generally uniform and plain, although in some cases it has a knot in the middle (X-M.1.27, 1415; PP-8.1.5, 1451), and on one occasion its serifs are V-shaped (PP-31.16.1, 1468).

In all the inscriptions, the horizontal bar of 'L' is entirely wedge-shaped, without differentiation between stroke and serif. The same often applies to the top beam in 'T', which consists of two symmetrically placed inside-pointing wedges (X-M.1.21, 1402; PP-8.3.1, 1406; X-M.1.27, 1415; PP-28.6.3, 1431; X-M.1.18; PP-8.3.2; X-M.1.22; X-M.1.24). 'T' generally has a straight stem, albeit in some cases it is curved or even spiral (PP-30.1.2, 1425; X-M.1.22).

Uncial 'M' appears in two forms: one is symmetrical, featuring a central vertical and two curved sides, sometimes with outward-curled endings (PP-17.1.23, 1400; X-M.1.21, 1402; X-M.1.27, 1405; PP-28.6.3, 1431; PP-8.3.2; X-M.1.22; X-M.1.24); the other is asymmetrical, with the left side closed (PP-8.3.1, 1406; PP-30.1.2, 1425; X-M.1.18; X-M.1.22). In all cases, 'N' resembles the modern minuscule—it has a straight stem on the left and a curved shoulder connecting to the right leg. 'O' is primarily oval or amygdaloid. 'S' is generally distinctly meandric, with its spine coming very close to the open ends.

Uncial 'U/V' consists of one straight and one curved stroke, with the latter occupying most of the bottom. Usually, the left side is straight, and the right side is curved, but on one occasion, the opposite occurs (PP-28.6.3, 1431). Finally, the uncial letter 'X' generally comprises two mildly curved strokes.

The transition from Gothic script to early modern capitalis is marked by the blending of elements from both styles within the same inscription and by inconsistencies in the forms of some letters. For instance, predominantly Gothic inscriptions sometimes include non-uncial letters. 'C', instead of having a hairline, is occasionally open (PP-8.3.2, X-M.1.23). In one case, 'D' is not minuscule (PP-28.6.3 1431, see above), and at one point, 'N' is not uncial (X-M.1.27). 'X' can be straight (PP-8.3.1 1406, PP-22.1.1), and 'U/V' is often non-uncial, straight or slightly curved (PP-8.3.1, 1406; PP-28.6.3, 1431, X-M.1.18, PP-22.1.1, PP-8.3.2, X-M.1.22, X-M.1.24). Although 'O' is mainly oval or amygdaloid in Gothic script, a regular circular shape, which is more common in Renaissance epigraphy, also appears (X-M.1.21, 1402; PP-8.3.1, 1406; PP-22.1.1).

Conversely, some uncial letters appear in otherwise post-Gothic inscriptions. This style, seen in two inscriptions within the corpus, is not a fully developed Renaissance script. However, it shares many features with the style known in German-language literature as early humanist capitalis (*frühhumanistische Kapitalis*), which was a script typical of South-West Germany from the early 1400s into the 16th century.[27] Both examples are from the Pula Cathedral (PP-8.1.1, 1417; PP-8.1.5, 1451 – hence in this paragraph α and β, respectively). The notable letters include 'A' with a broken crossbar (β); 'C', which is generally normal, but once, when connected in a ligature with 'V', appears squared (α); 'D', which features either an asymmetrical downward loop (α) or is an actual uncial minuscule with a short wedge-like upper stroke (β); 'E', which is uncial (α, β); 'G', thin and rolled (α, β); 'H', either minuscule (α) or with a small stroke through the middle (β); 'I' and 'T', both with vertical strokes through the stem (β); 'L' and 'T', with wedge-shaped horizontals; 'M', of a "Byzantine" style (β); 'M' and 'N', with oblique strokes departing from a lowered point on stems (α); 'O', amygdaloid (α) or oval (β); 'Q', with a short, curved tail (α, β); 'R', featuring a small bow (α) and a lightly curved tail (α); 'S', falling to the left (α); and 'V', with curved legs (β). The letters are vertically elongated and often have accentuated triangular spurs (α, β). Furthermore, β contains enclaves and smaller, lowered, and slightly raised letters, which is another feature atypical of Renaissance inscriptions.

During this transitional period, inconsistencies in inscriptions are evident across various styles of uncial letters, multiple forms of capitalis letters, and the mixing of uncial with later styles. 'C' may be closed with a hairline or left open (PP-8.3.1, 1406; X-M.1.27, 1415; X-M.1.18; PP-22.1.1); 'E' can be round or straight, hairline-closed or open (X-M.1.22, X-M.1.24), and also epsilon-shaped. Uncial 'M' appears in both variants within the same inscription: with a straight middle stem and rounded, outward-curled sides, or rounded and asymmetrical with a closed left side (X-M.1.22). In early humanist inscriptions, it has straight lines, but with lower departing diagonals, and on one occasion, it resembles an inverted 'W' with crossed middle lines (PP-8.1.1); in another inscription (PP-8.1.5), it either features a horizontal mid-line with a small downward extension or short middle diagonals. The stem of 'T' is either spiral or straight in one inscription (X-M.1.22). 'U/V' can be straight (or mildly curved), or uncial (X-M.1.18, PP-8.3.2).

[27] On the early humanist capitalis, see Neumüllers-Klauser, "Epigraphische Schriften" and related discussion contributions: Steinmann, "Überlegungen"; Fuchs, "Übergangsschriften"; Koch, "Zur sogenannten"; see also Zajic, "Wissenschaftsgeschichte". The script has not been identified as a distinct style outside Central Europe, perhaps because research projects covering those regions generally do not extend to the 15th century (Zajic, "Wissenschaftsgeschichte," 327).

Early Modern Capitalis

Although medieval epigraphic scripts and their evolution towards early modern capitalis have been well-researched and documented, later developments in the shaping of individual letters have not been extensively analysed.

The modelling of the epigraphic script based on ancient models was preceded by a similar process in handwritten materials, starting with Poggio Bracciolini's manuscript written in 1402/03. It was part of a broader humanist renewal project and was completed in Italy by the second half of the 15th century. In the final decades of that century, the new style, then mainly confined to high-status artefacts, spread beyond the Alps and rapidly replaced the Gothic script (and, by the end of the century, also the early humanist capitalis) in Latin inscriptions.[28]

Unlike the flourishing Gothic forms, letters of the new style aim for the clarity and simplicity of ancient inscriptions, mainly by following artistic ideals based on circles and lines. Researchers who have studied scarcely available Renaissance epigraphic corpora identified lighter, thinner, more closely spaced, and generally more regular and refined letter shapes.[29] Unlike uncial letters, modern ones lack bulges on straight lines, while curves are only slightly thickened in the middle, if at all. Ideally, the proportions of the letters are based on a square and its incircle; in more elaborate inscriptions, letters are rarely symmetrical: right verticals are more emphasised than the left verticals and horizontals, and in round letters ('C', 'D', 'G', 'O', 'Q'), shading tends to be organised around an oblique axis.[30]

Although relatively widespread, the features mentioned above have been found only in limited inscription groups. For this reason, confident generalisations remain unfeasible. This is even more true for post-Renaissance developments, which, as I have repeatedly mentioned, have hardly been investigated palaeographically.

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[28] On the transition from the late medieval to the humanist script, see Kajanto, "Notes," 168; Kloos, *Einführung*, 143–160; Rüdiger Fuchs, "Die Kapitalis-Inschriften von Trierer Bildhauern des 16. Jahrhunderts," *Epigraphik 2000* (see note 8); Franz-Albrecht, Bornschlegel "Stilpluralismus oder Einheitszwang? Die Schriften in süddeutschen Bildhauerwerkstätten der frühen Renaissance," in *Epigraphik 2000*, 46; Renate Kohn, "Versuch einer Typologie der Versalien in frühneuzeitlichen Minuskelschriften," *Epigraphik 2000*, 69; Koch, *Inschriftenpaläographie*, 53; Bornschlegel, "Renaissance-Kapitalis," 336–337. The earliest documented example of fully-developed Renaissance capitalis from German territory is from 1488 (Bornschlegel, "Renaissance-Kapitalis," 339), whilst the first example in the corpus is from 1451 (PP-31.1.2).

[29] Meiss, "Toward," 99; Kloos, *Einführung*, 143. This doctrine was first articulated by Felice Feliciano in a manuscript of 1463 (*Alphabetum Romanum*), and later by Luca Pacioli in *De divina proportione* (1509). See Kloos, *Einführung*, 156–157.

[30] Bornschlegel, "Die frühe Renaissance-Kapitalis," 223; Franz-Albrecht Bornschlegel, "Renaissance-Kapitalis und Kapitalis der Frühen Neuzeit." A comprehensive case study is found in Meiss, "Toward."

To gain at least an initial understanding of the trends in shaping letters in inscriptions from the 15th to the 19th centuries, this study will—due to limited space and the size of the corpus—only examine a few key characteristics in four letters: 'A', 'I', 'M', and 'R'. Other letters and more subtle variations—such as shaping serifs and spurs, sizes of bows and counters, peculiarities of ascenders and descenders, the presence of non-canonical elements, use of shading, and stroke thickness—must be explored on another occasion.

As the letter 'A' was stabilised during the Renaissance in the form with straight legs and an apex reduced to either a point or a short flat surface, the only feature to be analysed is its crossbar, which, in the early modern period, is generally cut in one of the following ways: either it is straight and horizontal, or it is broken, consisting of two shorter straight lines that connect at an apex pointing downwards and, together with the upper parts of the legs, form a rhombus (Figure 11).

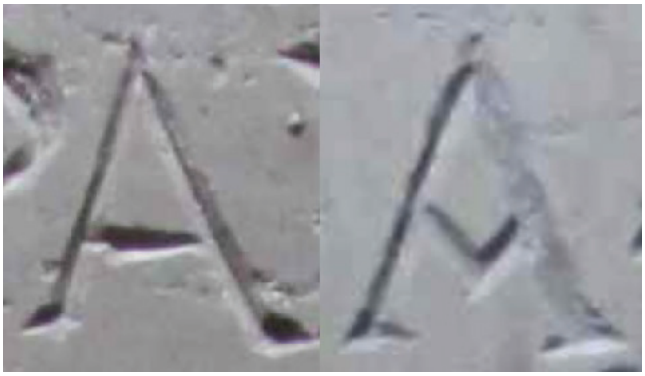

Figure 11. Examples of 'A' with straight and broken crossbar, from the same church and year (PP-21.1.2 and PP-21.1.1, 1670)

Its chronological distribution is depicted in Figure 12.



Figure 12. Distribution of 'A' with straight (blue) and broken (red) crossbar

The figure indicates (and the statistical test confirms this with a p-value < 0.001) that, in the corpus, the broken crossbar in 'A' was fashionable during the Baroque period (1650–1800), although it appeared sporadically before and after. With the rise of Classicism at the turn of the 19th century, the trend ended, and the straight crossbar became the standard norm.

Funerary inscriptions have the broken crossbar 'A' significantly more frequently than commemorative inscriptions (p-value < 0.01). This suggests that the straight-crossbar variation was regarded as more elaborate.

The majuscule 'I' can have a dot, which is sometimes actually a small triangle (Figure 13). The chronological trend is shown in Figure 14.



Figure 13. Example of using undotted and dotted 'I' in the same inscription (PP-18.1.5, 1714)

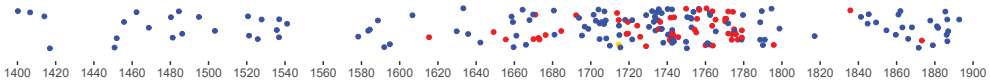

Figure 14. Distribution of majuscule 'I' without (blue) and with (red) overdot. The only mixed case is golden

The development is similar to the one with the broken crossbar in 'A', but more evident. Once again, it appears as a mannerism almost exclusively in the Baroque period (1650–1800, p-value < 0.001). Further analysis indicates that the dotted 'I' is much more common in funerary inscriptions than in the commemorative group (p-value < 0.001). However, its absence from the latter is not absolute. As with the straight crossbar in 'A', this suggests that 'I' without the dot was viewed as more suitable for solemn, publicly relevant inscriptions.

The basic structure of the modern letter 'M' can be varied in two main ways: firstly, its verticals can be parallel or conic, meaning with legs slanted inwards at the top; secondly, the meeting point of its middle diagonals can be at or near the baseline, or significantly above it (Figure 15). Conic 'M' appears as atypical of Renaissance and Classicist inscriptions, occurring almost exclusively in the 15th century and again during the Baroque period (Figure 16). However, this trend ends abruptly around the mid-18th century—statistical significance is observed only when the timeframe is restricted to 1650–1750 ($p < 0.01$). No systematic difference is seen between the types of inscriptions (p-value = 0.43).

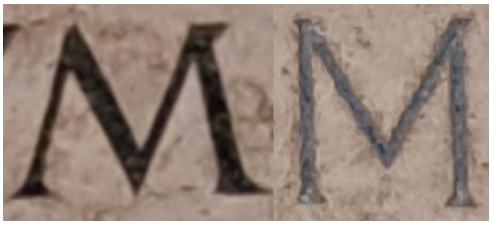

Figure 15. Letter 'M' with conic stems and lowered middle tip (PP-19.8.1, 1750), and with parallel and raised middle tip (PP-31.5.1, 1743)

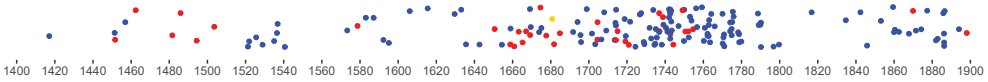

Figure 16. Distribution of letter 'M' with parallel (blue) and conic (red) stems. Golden is the inscription that has both

In the lowering of the middle point, no chronological trend is observable at first (Figure 17); however, as seen with conic 'M', the middle downward spike of 'M' occurs significantly more frequently between 1650 and 1750 than at other times (p-value = 0.025). Furthermore, when the different inscription types are examined separately, this feature is notably less common in funerary inscriptions compared to the commemorative group (p-value < 0.01). This may suggest that a more elaborate style was linked to fully extended diagonals in 'M'. Additionally, in three inscriptions from the 18th century (PP-19.19.3, 1729; PP-19.1.51, 1762; PP-19.1.52, 1763), in the first row containing only the text "D(EO) O(PTIMO) M(AXIMO)", the 'M' has the middle point at the bottom, although this is not the case in the rest of the text. This indicates that within the script hierarchy, the low middle apex was positioned above the raised one.[31]

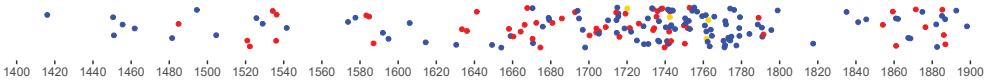

Figure 17. Distribution of 'M' with bottom (blue) and raised (red) middle tip. Gold are the inscriptions with both

Finally, this section examines the tail of the letter 'R'. In the uncials, it is usually curved, sometimes very winding, starting either from the bowl or the stem or from their meeting point, and occasionally descending below the baseline. Here,

[31] On the script hierarchy in early modern inscriptions, see Harald Drös, "Schrifthierarchie in frühneuzeitlichen Inschriften?" in *Epigraphik 2000,* 89–105. There are also cases where the height of this apex is variable because of an awkward execution (e.g. PP-18.1.24, 1742).

the analysis is limited to a single feature: whether the tail is straight or not (Figure 18). The distribution is shown in Figure 19.



Figure 18. Letter 'R' with straight and curved tail (PP-17.1.16, 1882 and PP-17.1.4, 1883, respectively)

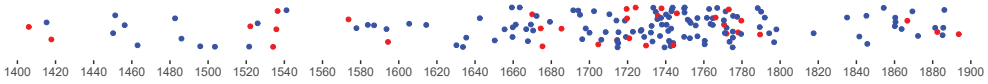

Figure 19. Distribution of 'R' with curved (blue) and straight (red) tail

The curved 'R'-tail is clearly the dominant form. The straight variant occurs roughly equally across all periods, reflecting the overall density of the corpus. However, the straight tail, being the less elaborate form, is significantly more common in the funerary section of the corpus (p-value < 0.01). While 91 out of 106 commemorative inscriptions feature a curved 'R', the funerary group predominantly uses the straight variant (23 out of 38).

One late inscription (PP-27.1.1, 1874, Figure 20) is interesting because it features a very reduced 'r'. This inscription stands out for many other features that diverge from traditional conventions: a low dot as the word separator (and lowered triangles as abbreviators), an inverted 'N', an anachronistic broken crossbar on 'A', and a pronounced dot over the capital 'I', along with consonant 'J', the perpendicular leg of '7', and various errors and linguistic oddities in a visually very regular inscription ('ASTrIAE', 'ОИОREM').

The analysis has revealed that letter shapes were systematically altered even after the Renaissance, but not in a drastic way. There was no widespread and irreversible change throughout the entire script, as was the case at the end of the Middle Ages; however, fashionable trends brought about by the Baroque and Classicism certainly disturbed the consistent appearance of capitalis, not only in individual letter forms but also, as shown earlier, in the overall layout of the text.



Figure 20. Inscription PP-27.1.1

Other Features

Nexus Litterarum

Nexus litterarum (also called *uniones litterarum*, ligatures, or connected letters) is a method of concise writing achieved by merging two or more separate letters into a single form, often by sharing the same stroke. In the 14th century, conjunctions, enclaves, and interlacing were abandoned in inscriptions and replaced by abbreviating signs.[32]

In the overwhelming majority, about one-third of the inscriptions with this feature (63 out of 80), it is confined to two cases: diphthongs 'Æ' and 'Œ'. The distribution of these inscriptions is noteworthy, especially when compared to those linking other letters (Figure 21).

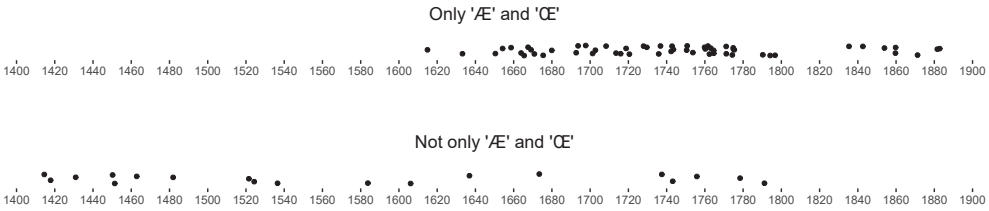

Figure 21. *Nexus litterarum* confined to 'Æ' and 'Œ' as opposed to a more varied selection

[32] Favreau, *Épigraphie*, 83.

The chronological trend indicates that inscriptions with *nexus litterarum* limited to 'Æ' and 'Œ' do not appear before 1615, and thereafter they become absolutely prevalent. The few exceptions from the 18th century use other connected letters or ligatures in limited and specific contexts: 'Ÿ' for 'II' ('ANTONŸ', PP-31.5.1, 1743),[33] 'ſt' for 'ST' ('REſtITVIT', PP-19.1.12, 1756; 'Inſtitutione', PP-31.1.3, 1791 – but 'Honestissime' below), or to insert mistakenly omitted letters or save space at line ends (PP-19.1.13, 1738; PP-26.1.7, 1779). In all these cases, this strategy is employed only once, and the only other *nexus* used are 'Æ' and 'Œ'.[34]

The situation in the earlier period is entirely different. Here, any letters could be connected as long as they have a stroke that they are able to share. In most cases, there are only one to three instances within an entire inscription, which is typically smaller and features tightly set letters to maximise space efficiency. However, in the two inscriptions previously described as similar to early humanist capitalis—also containing some uncial letter forms—this connection of letters is a prominent feature. In PP-8.1.1 (1417), the connected groups include 'TA', 'NV', 'AD', 'AL', 'VL', 'VA', 'MA', 'AR', 'VB', 'AM', 'VR', 'ME', 'VE', 'TE', 'AN', 'TR', 'AT', 'VC'; in PP-8.1.5 (1451): 'TV', 'NA', 'VER', 'MVR', 'TE', 'HE', 'ET', 'VE'. Another inscription from the same period, but entirely written in Gothic majuscule (PP-28.6.3, 1431), joins letters whenever possible: 'AN', 'IN', 'EMB', 'EP', 'AR', 'TR', 'COP'; this cutter even connects across words: 'hOC OPUS' (see Figure 22).

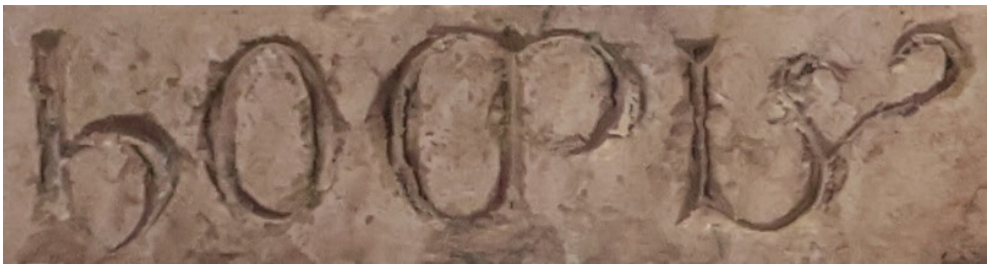

Figure 22. Example of connecting letters between words (HOC OPUS, PP-28.6.3, 1431)

The analysis clearly shows that between the late Gothic and early Baroque scripts, the *nexus litterarum* evolved from a space-saving technique into a characteristic of a classicising style, within the framework of imitating developments in early modern manuscripts and print.

[33] The same inscription also has a tilde above 'Y' in 'OBYT'.

[34] The last inscription with various ligatures is PP-19.16.1 (1673), using a number of conjoined letters: 'TE', 'NA', 'AE', 'HAE', 'VR', 'AV'.

Relative Letter Position

A very familiar way of shortening a word in an inscription involves omitting the middle part (with or without an abbreviation mark) and ending with a superscript. It is the most common alternative letter position in the corpus, found in 30 inscriptions. Interestingly, it does not appear in the corpus before 1595; afterwards, it is nearly the only form used when moving letters away from the baseline.

The transitional period from Gothic to capitalis varies significantly. Typically, in medieval epigraphy, a range of positioning styles are observed: enclosed letters or enclaves (PP-8.1.5, 1451; PP-31.1.2, 1451), superposed letters (in dating: 'O' above 'A' for 'ANNO' and 'O' above 'M' for 'MILLESIMO': PP-8.3.1, 1406; PP-31.1.2, 1451; X-O.1.3, 1462), subscript letters (PP-8.1.5, 1451), letters written over the leg of another (PP-31.1.2, 1451), and rotated letters (PP-8.1.2, 1456).

Small capitals used as subscripts also appear in two late isolated cases: once where the smaller endings after the contraction are placed on the baseline and tilded (PP-19.8.1, 1750), and once where a letter omitted by error is reduced in size and squeezed between the neighbouring letters (PP-27.1.1, 1874).

Punctuation and Abbreviation Symbols

Epigraphic punctuation differs significantly from that in handwritten and printed texts. When it is used, it rarely functions as a means of syntactic separation. More often, signs replace the spaces between words. In the corpus, the comma (,), used for abbreviation or as a syntactic device, is uncommon and appears mostly in later examples (PP-8.8.3, 1583; PP-18.1.1, 1695; PP-19.17.1, 1703; PP-18.13.2, c. 1710; PP-19.1.20, 1738; PP-26.1.5, 1764; PP-21.2.3, 1842; PP-22.9.1, 1867). Several symbols occur only once in individual inscriptions, mostly from the Baroque period onwards: the 'R' with crossed tail (℟) for 'RVM' (PP-8.3.6, 1655); the equal sign (=) linking verse halves across two lines (PP-26.1.5, 1764); the underscore (_) indicating a year range (PP-10.3.4, 1887); the double tilde (≈) denoting abbreviation (PP-21.2.3, 1842); the overscore (¯) for abbreviations (an early example from 1406, and four in the period 1695-1779), or (late) markings of numbers (1861-1882); the sign (ˀ) replacing the ending '(I)VS' (PP-19.16.1, 1673; PP-18.19.1, 1692). Some symbols continue medieval styles and are found only in the early part of the corpus: the broken wavy line (〰) replacing 'R' (PP-8.1.1, 1417), 3 (for 'M' and 'ORVM'), 9 (for 'QVON') (PP-8.1.5, 1451), and 'S(ER)' (PP-31.1.2, 1451).

The four most frequently appearing symbols are the middle dot (·), the low dot (.), the tilde (~, ⁀ or Ω), and the colon (:). The middle dot mainly separates words (less often used for abbreviation), while the low dot is used mainly for abbreviation (less commonly for separation). The colon and tilde are almost exclusively employed for abbreviations.

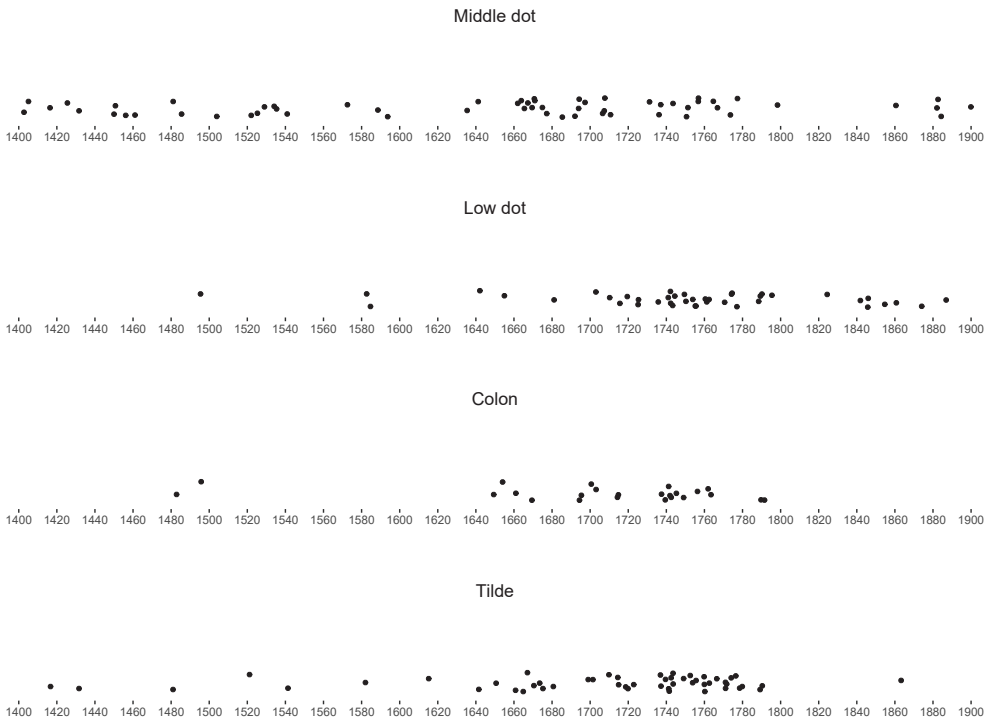

Figure 23. Distribution of the four most frequent non-letter signs in the corpus

The chronological distribution (Figure 23) shows that the middle dot—whether a proper circular dot or a triangle, quadrangle, or other shape—is consistently used throughout the period. However, its frequency does not follow the rise in the total number of items: in fact, the statistical test shows that after 1650, the use of the middle dot significantly decreases relative to the size of the corpus (p-value = 0.015). This coincides with the increase in the use of the low dot (both as a separator and as an abbreviator), which is very rarely found before the Baroque period, but becomes much more frequent and ultimately predominant in the 19th century, aligning with modern punctuation conventions. This clearly reflects a wider trend that started in the second half of the 16th century, shifting from a centuries-old custom of using word-dividing signs to sentence punctuation.[35] Furthermore, it became more typical to use only a blank space between words instead of an explicit mark, which may explain why the increase in the use of the

[35] See Eberhard J. Nikitsch, "Interpunktionszeichen und Worttrenner," in *Epigraphik des Mittelalters und der Frühen Neuzeit: Eine Einführung*, eds. Helga Giersiepen and Andrea Stieldorf (Wiesbaden: Dr. Ludwig Reichert Verlag, 2025), 369. According to the author, an early appearance of comma in the *Die Deutschen Inschriften* database originates from 1543. In the Istrian corpus, the earliest example is from 1583 (PP-8.8.3).

lower dot after 1650 had not yet reached the usual significance level, although it is close (p-value = 0.055).

Around the same time, the colon began to feature prominently, having been rare before 1659 and vanishing by the end of the 18th century. The same applies to the tilde, which—in wavy, arc, and omega forms—was utilised more frequently during the Baroque era (1650–1800) than in earlier periods, although this may not be immediately apparent in the plot (p-value < 0.01). By the 19th century, it nearly disappeared from the corpus.

All these developments further indicate the shifts in inscription styling that occurred around the mid-17th century and approximately 1800 across various textual features.

If inscription types are observed, they differ mainly in the use of the middle dot: in commemorative inscriptions, this symbol is significantly more common than in funerary ones (p-value = 0.014).

Conclusions

The analysis outlined above results in several conclusions.

- By the end of the 15th century, inscriptions had shifted from Gothic majuscule to early modern capitalis. During this time, many inscriptions blend both styles, sometimes inconsistently, and still show varied letter placement and conjoined letters.
- The next turning point is the start of the Baroque period (c. 1650), when several statistically significant and irreversible changes took place: a shift in text alignment from mainly using maximum space on both sides to centring one, the reduction of connected letters to ‘Æ’ and ‘Œ’, and the disappearance of the word-separating and abbreviating middle dot in favour of the use of a low dot.
- Further traits that became prominent in the Baroque are mostly confined to this period and rarely persisted into the 19th century, thus representing Baroque mannerisms: centring only the header and/or bottom line, irregular letters, small capitals, numerous letter features (such as a broken crossbar in ‘A’, dotted ‘I’, conic ‘M’, raised middle apex of ‘M’), the addition of superscripts at the end of abbreviated words, and the use of the colon and tilde.

The chronological trends in the formal and palaeographic features of the inscriptions in the corpus can be summarised as the entire time span being divided into several distinct periods: the Early Renaissance up to the turn of the 16th century, which includes many late medieval traits; the classicising High Renaissance, last-

ing until the mid-17th century; the Baroque period, which marked a significant shift away from the regularity of classicism; and the early 19th century, when many aspects of the Baroque trend were reversed. These three equally spaced turning points (around 1500, 1650, and 1800) clearly indicate changes in artistic style, but they were also linked to the political context: they correspond quite closely to the start of the Reformation, the end of the Wars of Religion, and the broad social upheaval brought about by the French Revolution. At a local level, the key developments at these points included the rising Ottoman threat, the revived activity of Catholic religious orders, and the fall of the Venetian Republic.

It remains to be seen how historical developments and changes in artistic styles are linked to palaeographic features of inscriptions. If the entire early modern period is to be considered, this cannot be achieved without detailed analyses that extend beyond the Renaissance.

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Šime Demo *

Prilog poznavanju ranovovjekovne latinske paleografije: natpisi južne Istre

Sažetak

Članak istražuje razvoj pisma na kamenim latinskim natpisima u crkvama južne Istre između 15. i 19. stoljeća. Iako se istraživanja latinske epigrafije – uključujući i natpisnu paleografiju – tradicionalno ograničavaju na antiku i (u manjoj mjeri) srednjovjekovlje, u radu se polazi od stajališta da novovjekovni natpisi imaju značajnu dokumentarnu i umjetničku vrijednost kao pokazatelji kulturnih i društvenih sila koje su oblikovale određeno razdoblje, zbog čega je i njihov paleografski aspekt vrijedan znanstvene obrade. Provedeno na korpusu od 239 latinskih natpisa, istraživanje se usredotočuje na tri šira područja analize: opći izgled pisma (koji obuhvaća poravnanje teksta, pravilnost slova i uporabu malog verzala), oblike pojedinih slova te raznolike značajke poput spojenih slova, međusobnoga položaja slova i neslovnih znakova.

Provedena analiza – u kojoj se upotrebljavaju grafički prikazi za ilustraciju trendova i Fisherov egzaktni test za njihovu statističku verifikaciju – ukazuje na jasno razlučive razvojne faze. U 16. stoljeću natpisi se udaljavaju od gotičke majuskule prema ranonovovjekovnoj kapitali, u skladu s humanističkom obnovom monumentalnog starorimskog pisma. Ta promjena izravno odražava rastući utjecaj renesansom zahvaćene Mletačke Republike na istarskome poluotoku. To "mješovito" razdoblje obilježeno je stilskom nedosljednošću, pri čemu se elementi starog i novog pisma pojavljuju zajedno, uz raznolik položaj slova i česte ligature. Premda je nakon toga pismo kao cjelina ostalo nepromijenjeno, oblici slova, različite značajke rasporeda te uporaba posebnih znakova znatno su evoluirali u dvjema vremenskim točkama: oko 1650. godine (početak baroka) i oko 1800. godine (početak klasicizma).

Članak pokazuje kako epigrafska baština ocrtava urbani i politički razvoj regije. Ranonovovjekovni natpisi, iako često zanemareni povijesni izvori, mogu – makar i samim svojim oblikom i slovnim stilom – pridonijeti sveobuhvatnijem razumijevanju kulturnih tokova u različitim povijesnim razdobljima.

Ključne riječi: latinska paleografija, rani novi vijek, južna Istra, natpisi u crkvama, kameni natpisi

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