

Perceptions of Writing in Papyri. Crossing Close and Distant Readings

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Organized by

Claire Clivaz (DH+, SIB, Lausanne) and Isabelle Marthot-Santaniello (Faculty of Arts and Humanities, University of Basel)

Introduction

Isabelle Marthot-Santaniello, University of Basel (CH): “State of the Art in Computational Paleography of Papyri: at Hand, Hopes and Wishes.”

List of Abstracts (alphabetical order)

1. Garrick Allen and Kelsie Rodenbiker, University of Glasgow (UK), “Do Greek New Testament Papyri Have Aesthetic Features?”

The “New Testament” papyri have long been important for key questions in biblical studies, including textual criticism, the early transmission of the emerging sacred corpus, and the social worlds of early Christian scribes and readers. While these discourses remain important, we want to take a step back and consider more fundamentally the ways in which the aesthetic features of these manuscripts communicate to readers and viewers. Adopting aesthetic cognitivism as a philosophical framework, we explore the multifaceted, but subtle aesthetics of the handwriting, visual artworks, writing supports, and literary texts that coalesce to create communicative acts under various circumstances, with special attention to the Greek papyri that preserve the New Testament.

2. Roxanne Bélanger Sarrazin, University of Oslo (NO), “What a Magical Tool! Studying Coptic Apocrypha and Magic in the Age of Databases.”

In the study of the literary traditions of Late Antique and Early Islamic Egypt, the Coptic papyrological material has generated less interest than its Greek counterpart. As a result, studies on Coptic palaeography are sparse—the largest attempt remaining that of Stegemann, *Koptische Paläographie* (1936)—and often based on preconceptions and false assumptions. Furthermore, images of Coptic manuscripts are often unavailable, jealously kept behind closed doors, which prevents access to precious comparanda. These are only a few of the problems of Coptic palaeography as outlined by Boud’hors, “Issues and Methodologies in Coptic Palaeography” (2020), together with the lack of systematic terminology to describe hands and styles. Therefore, when dealing with Coptic, close paleographical analysis can still be useful, for example, in identifying multiple manuscripts copied by individual scribes. However, the evaluation of dates and provenience for particular manuscripts requires other approaches that take into account not only the texts themselves but also paratextual and material features. Here, databases and computer analysis of quantitative data prove especially useful. In this paper, I will discuss two recently created databases (the *Apocrypha Database* and the *Kyprianos Database of Ancient Ritual Texts*), focusing on how these impacted my work on the relationship between Coptic apocrypha and magic, in particular with regards to the analysis of content and paratextual features, as well as the evaluation of dates and provenience.

3. Claire Clivaz, DH+, SIB, Lausanne (CH), “Looking digitally at a papyrus: P⁴⁵ in scholarship.”

This paper would like to inquiry about the evolution of the perception of P⁴⁵ – or Chester Beatty Library (CBL) BP I – in scholarship, based on this research question: is it possible to discern and qualify the impact factor of digital images on scholarship? Originally honored as the most ancient manuscript of the New Testament (e.g., Gerstinger 1932, Kenyon 1933), P⁴⁵ lost scholarly importance during the sixties, when P⁷⁵ was discovered and dated 175–225 CE (Martin and Kasser 1961, 82–83). Alternative voices remained present during the following four decades (e.g., Fitzmyer 1962, 175; Turner and Gamble, as noted by Gregory in 2003, 29). In December 2000, the CBL (Dublin) has contributed in reassessing importance to P⁴⁵ by organizing a conference (Horton 2004) in which Hurtado gave clear evidence of P⁴⁵ significance (Hurtado 2004). The same year, Haines-Eitzen declared that P⁴⁵ was the “proto-Alexandrian” witness, whereas P⁷⁵ was influenced by a liturgical framework (2000, 117).

Meanwhile, the aesthetic perception of writing based on P⁴⁵ has evolved in the direction of a documentary hand (Aland 2004, 120; Kraus 2001 and 2007), and in 2018, Nongbri reassessed Fitzmyer’s opinion from 1962: P⁴⁵ confirms, along with P⁷⁵, that there was an early, fluid state of the Gospel texts in Egypt (135). Recently, one can observe the emergence and influence of the digitization of P⁴⁵ in fundamental research. Cole (2017) and Roth (2021), who illustrated their articles with several images, make assertions that would have been difficult to demonstrate before the digital era. Moreover, metadata and paratext information vary in some extent on the diverse platform that welcome images of P⁴⁵: the INTF (Münster), the CSNTM (Plano), the National Library of Vienna and the CBL. All conditions are gathered to analyze until what extent the digital turn and the online visualization of P⁴⁵ are reshaping the fundamental research about this important NT papyrus. The paper will verify if, along with digital images, the digital virtual research environments count now in the evaluation of the papyrus itself.

4. Victoria B. Fendel, University of Oxford (UK), “When the lines get blurred: Support-verb constructions in the documentary papyri.”

Support-verb constructions are combinations of a verb and a noun filling the predicate slot in a sentence, e.g. to make a suggestion in I made the suggestion to meet. They are characterised by their variability (e.g. he breaks/broke her/the heart), ambiguity (e.g. he broke her chocolate heart which has a literal reading), and discontinuity (e.g. he broke her young heart) (Pasquer et al. 2018: 2585). All three characteristics are problematic for automated extraction, since ‘if M[ulti]W[ord]E[xpression]s are treated by general, compositional methods of linguistic analysis, there is ... an overgeneration problem’ (Sag et al. 2002: 3). Overgeneration means that structures are incorrectly classified as support-verb constructions.

In the corpus of post-classical documentary papyri, the size of the corpus, the internal diversity of the corpus (synchronically and diachronically), and the lack of tools comparable to the *Thesaurus Linguae Graecae* for literary texts (yet promising Vierros & Henriksson 2021) complicate the retrieval of support-verb constructions. Two deterministic procedures are feasible, one is to start from the predicative noun and establish the support-verb construction family around it (e.g. Fendel 2024 on χρεία(v)), the other is to start from the support verb and establish the range of predicative nouns the verb combines with (Jiménez Lopez 2011; yet also Jiménez Lopez & Banos, *forthcoming*). Neither procedure is fully inductive. By means of concordances (via Sketch Engine), data collection can be semi-automated. However, a multitude of choices concerning e.g. permissible distance and lexical collocation strength (Rychlý 2008) are necessary before data retrieval. Objectivity is in the eye of the beholder.

The present contribution focuses on structures which push the limits further, i.e. combinations of a support verb and a prepositional phrase, e.g. to bear in mind (Hermann 2020; Kamber 2008; Tronci 2016; Tronci 2017). Examples from the papyri are P. Herm. 9, l. 20 ἐν πίστει ἔχε ‘Be faithful!’ and P. Kell. 1. 68, l. 29 ἐν συστά[σει] ἔχε ‘Keep (them) together!’. Compared to the verb-object members of the family of constructions, they contain a further element (a preposition) and a syntactic adjunct. Industrial operations that work on modern languages rely on neural networks and translation memory for these (Koehn 2020).

The paper wants to show that quantitative data (i) is only as good as the premises on which it has been collected and that not every data sample lends itself to quantitative analysis, (ii) has to be interpreted with care considering confounding variables, and (iii) that support verb constructions in small and diverse corpora such as the documentary Greek papyri withstand computational models so far.

5. Jean-Luc Fournet, Collège de France, Paris (FR), “Understanding a text before reading it? The contribution of a document’s form to its interpretation.”

Before rushing to the content of a text, every papyrologist must begin with a meticulous observation of the papyrus as an object. Its materiality, layout and writing present a series of clues that corroborate the nature and purpose of the text, providing information that is indispensable for its correct interpretation. The present contribution will attempt to illustrate the decisive contribution of these formal elements, which come under what I have elsewhere called the “paléographie signifiante” and which should be taken into account in the computer analyses that are developing in the field of papyrology.

6. Nesina Grütter, University of Fribourg (CH), “Mediating Distanced and Far Distanced Readings: Textual Criticism and Ancient Translations of the Hebrew Bible in the Digital Age.”

For the reconstruction of the textual history/histories of the Hebrew Bible, Ancient Greek translations are very important. Many of the textual witnesses have recently become accessible online in the form of high-resolution photographs. Furthermore, so long most researchers were dependent on condensed data in the apparatuses of critical editions. What happens when the extensive lists behind these editions (e.g., the collation books of the Göttinger Septuagint, a result of 100 years basic research) get digitally available too? If we want to link the two strands of data, what do we need to think about in terms of digital processing, especially with regard to material perspectives?

7. Pasquale Orsini, Ministry of Culture, Central Institute for Archives, Rome (IT), “Paleography as ‘evidential paradigm’.”

Paleography, as the history of writing, faces an ancient dilemma: adopt a weak scientific method with relevant results or a strong scientific method with little results. By examining some case studies, I discuss the historical reconstruction of some types of Greek majuscules (II-VIII CE), comparing the two methods.

8. Lea Packard-Grams, UC Berkeley (USA), “Digital Papyrology as a Method for Reassembling an Archive: A Case Study in Digitally Reuniting Papyri Near and Far.”

A current project at the Center for Tebtunis Papyri involves the reassessment of an archive of papyri from a late Ptolemaic grapheion writing office (TM ArchID 368), all written by a single scribe (“Scribe X”). While the term grapheion first appears in the mid-2nd c. BCE, the Scribe X archive presents the earliest actual archival contents from the office in the 1st c. BCE. It is also the first extant example of Demotic written with a reed pen, and Scribe X’s Greek and Demotic handwriting is extraordinarily distinctive, making it a unique paleographical challenge. A number of scholars have examined parts of the Scribe X archive in the past, but a fresh examination in light of new evidence and digital tools has supplied a more dynamic view of this group of papyri as a whole within a digital environment. During assessment, digital tools have proven to be invaluable for the project as we work on the scribe’s distinctive handwriting and aesthetic features. Notably, digital methods aid in identification of fragments as belonging to the scribe’s documents based on paleography. These tools include infrared photography, digital manipulation of fragments, and analyses of databases. Infrared photography has emboldened ink on papyri damaged from millennia inside crocodile mummies, and this has proven useful in the decipherment of handwriting. Manipulating papyri from collections around the world on a digital ‘lighttable’ also allows us to confirm where there may be connections. This paper presents our work as a case study that uses digital tools to reunite a group of papyri held in multiple institutions. Through this project, we are able to see the advantages and drawbacks of digital papyrology as a modern practice while reuniting an archive “with its share of paleographical peculiarities,” as Richard Parker wrote of it in 1972.

9. Laurent Pinchard, Institut Catholique de Paris (FR), “Testing the Boismard-Lamouille Theory on Acts 16.13-17.10 in \mathfrak{P}^{127} : Heresy or Evidence?”

The book of the Acts of the Apostles is known to be attested in two quite distinct forms according to manuscripts, one traditionally called ‘Western’ and the other Alexandrian, but no satisfactory solution has been found as to the successive or parallel transmission of these two forms of texts.

If the discovery of \mathfrak{P}^{127} in 2009 added a substantial new witness to the ‘Western’ text of Acts, the nature of its ‘free’ text raises many questions, especially as to its variant readings: did the scribe ‘add’ or ‘delete’ words or rework the text of his copy randomly, strongly expanding it or, conversely, summarising it? Is \mathfrak{P}^{127} merely another late witness derived from the already ‘corrupted’ text of Codex Bezae that would be created at the end of a long transmission process according to Aland’s generally accepted *Hauptredaktion* theory? Or would it happen to be an early ‘Western’ text that later underwent further scribal emendation?

The hypothesis of Marie-Émile Boismard and Arnaud Lamouille published in 1984 with its subsequent revision in 2000, which see the best representative of the ‘Western’ text, i.e. Codex Bezae, as a ‘texte abâtardi’, although often criticised, could however be reviewed within the study of the text of \mathfrak{P}^{127} by testing the type of textual relationship between Codex Bezae, \mathfrak{P}^{127} , and Codex Vaticanus, through the only substantial and continuous part of this fragmentary papyrus, namely Acts 16,13-17,10.

This short study evaluates this passage of Acts to decide whether \mathfrak{P}^{127} could be a witness of an early ‘Western’ form of the text of Acts that would be used by the scribe of Codex Bezae before combining it with the Alexandrian text, as Boismard and Lamouille originally thought. The consideration of variant readings in \mathfrak{P}^{127} will extensively use the *Digital Editio Critica*

Maior and its associated tools to evaluate how “classical” textual criticism can benefit from electronic resources especially when addressing the question of “free” transmission in early manuscripts.

10. Mladen Popović, University of Groningen (NL), “Assessing Writing Style and Quality by Combining Traditional Palaeography and AI, the Case of the Great Isaiah Scroll from the Dead Sea Scrolls.”

In 2021, we demonstrated that there were two scribes at work in the Great Isaiah Scroll (Popović, Dhali, and Schomaker, PLOS ONE, doi.org/10.1371/journal.pone.0249769). The study also shed new light on the mimetic ability of scribes to closely mirror another scribe’s writing style, so much so that scholars have not been able to distinguish between the two scribes through traditional palaeographic analysis. In 2023 I studied the writing quality of the Great Isaiah Scroll together with all Isaiah and Serekh manuscripts from the Dead Sea, using for heuristic purposes a framework applied to the Oxyrhynchus papyri (doi.org/10.1163/9789004537804_007). In this presentation, I will explore how quantitative data from computer analysis can assist in palaeographic analysis when assessing writing style and quality, also with regard to basic questions such as: what is quality and how do we know?

11. Nicola Reggiani, University of Udine (IT), “The Artificial Papyrologist at work: automatic identification of scribes and dating of handwritings in an ongoing project at the University of Udine – theoretical outlines and case studies.”

This paper aims at presenting a project led by Prof. Giuseppina Azzarello at the University of Udine with the purpose of developing a reliable digital tool that can automatically identify handwritings and the accurately date chronologically uncertain documents on papyrus. The first step towards achieving this goal involves the selection and the palaeographical and chronological analysis of Greek documentary papyri that can be significant for their palaeography and authorship. This process will create a corpus of testimonies that are precisely dated and attributed to a specific hand with certainty, which will be used to train AI-based algorithms. After outlining the general theoretical framework as well as the technical and methodological challenges of this task, in line with the conference topic, the presentation will focus on specific case studies, such as the Ptolemaic archives of Zenon and Menches.

12. C. Michael Sampson, University of Manitoba (CA), “To <g> or not to <g>: Paratext, Materiality, and the Digital Corpus of Literary Papyri.”

The viability of any given quantitative approach depends in no small part upon the quality (i.e. machine-readability) of the underlying data. For textual data in the papyrological world, the Papyrological Navigator (<https://papyri.info>) is an essential resource, but the case of its recently-added *Digital Corpus of Literary Papyri* provides a revealing lesson in both the imperfections of work-in-progress and the challenges of anticipating the needs of future users and research.

In this paper I consider some material and paratextual aspects of papyri in the corpus, and provide an editor’s perspective both on how they have been addressed and how they might be addressed in the future. Of particular interest are paratextual items such as scribal punctuation, diacriticals, and other symbols or marginalia (critical or otherwise). Many of these have been

encoded using the TEI element <g>, where the character in question is defined via the attribute @type, but not always in accordance with TEI/EpiDoc guidelines. The work of overhauling <g>, the proliferation of @types, and their abuse illustrates the delicate balance that must be struck between serving the needs of researchers on the one hand and complying with the strictures both of TEI/EpiDoc xml and of papyri.info's XSugar and transformation schemata on the other.

There remains much to do with the Digital Corpus of Literary Papyri: as of March 2023, only 2,066 of 14,723 files include textual transcriptions (= 14%). But the corpus' relative novelty also means there is an opportunity in the present moment. Over five years of experience in curating the corpus has revealed some gaps in the current setup – such as the abuse of <g> – without making it impossible to incorporate improvements that might anticipate future users' needs.

13. Olga Serbaeva, Pedro Garcia-Baro, Peter Shi and Isabelle Marthot-Santaniello, Universities of Zurich and Basel (CH), “Biblical Majuscule: Computer Spotted Features and Palaeographer’s Perception.”

Context: One of the most famous, carefully studied and easily recognizable scripts used to copy Greek and Coptic literary pieces on papyri is the Biblical Majuscule (see most recently P. Orsini, *Studies on Greek and Coptic Majuscule Scripts and Books*, 2018). This elegant script is so regular that differentiating various writers can be extremely challenging, casting doubts on the possible identification of a common writer over different pieces, which impedes the reconstruction of their production context. In the scope of the SNSF project “Reuniting fragments, identifying writers and characterizing scripts, (D-Scribes)”, we have annotated some 150 *Iliad* papyri at the letter-level with the help of the platform called READ (Research Environment for Ancient Documents). This approach opens new possibilities in the analysis of difficult cases, in particular on the specific question of the variability within one hand (intra-writer variation) and variation among different hands (inter-writer variation). We will illustrate how computer-based methods can assist palaeographers handling and visualizing a massive quantity of data, but also extracting features that do not correspond to traditional palaeographical categories. We will take as a starting point the following remark made by N. Gonis (“Six Papyri of the *Iliad* from the Bodleian Library”, *Archiv für Papyrusforschung* 49.2, 2003) on three *Iliad* papyri (Trismegistos number 60764, 60842 and 60934): “there is a chance, I think, that we are dealing with three rolls copied by the same scribe”. We will present how we can combine close and distant view to characterize these manuscripts inside the Biblical Majuscule group and investigate upon which criteria we can assess Gonis' opinion and more generally express and interpret similarities among handwritings.

14. Aneta Skalec, La Sapienza University, Rome (IT), “Misthosis monogram in the Late Antiquity Hermopolites lease contracts.”

Lease contracts are well attested in the Late Antiquity papyri. Relatively often an endorsement with information about the document content is preserved on their back. It begins with the word *misthosis* written with an abbreviation, which, however, could take slightly different forms depending on the place [μίσθ(ωσις) in Arsinoites, Herakleopolites, and Oxyrynchites; μί(σθωσις) in Hermopolites and Oxyrynchites].

This paper will be devoted to the latter abbreviation, which took the form of a monogram – a large *mu* crossed by a long *iota*. It is attested from the beginning of the 5th century in both Hermopolites and Oxyrynchites. However, while in the latter nome it coexisted with a more expanded abbreviation [μίσθ(ωσις)] and ceased to be used after the middle of the 5th century

AD, in Hermopolites it assumed a unique form. Since around 480 AD at the beginning of an endorsement we find there a cross or a staurogram inscribed in a large *mu*. Starting from the 6th century AD, it again takes the form of a monogram (cross or staurogram crossing *mu*), which only from the 7th century AD begins to be preceded by one of the Christian symbols (in other nomes, the practice of beginning the *misthosis*' endorsement with a cross or staurogram begins as early as around 480 AD).

The fact that *misthosis* abbreviations were written in a particular form of a monogram was often omitted in the *apparatus criticus* or commentary on the papyri, in which they occur. For this reason, the study of this issue requires a careful analysis of papyrus images, sometimes with their enhancements, as endorsements are often poorly preserved. At the same time, it shows how studying the evolution of writing of only one word can be useful to narrow down the dating or indicate the place where the document was written.

**15. Dominique Stutzmann, IRHT, Paris (FR) and Humboldt-Universität, Berlin (DE),
“Closeness, Distance, and Identification of Writers in Latin Paleography.”**

After intense debates in the 1980s and 1990s regarding paleography as the “art of measurement,” paleographers of Latin scripts developed quantitative and metrological approaches in the 2000s. These approaches encompassed both the single graphical phenomena described and enumerated by researchers (abbreviations, allographs, scripts, and their uses) and the graphical characteristics analyzed in their dimensions based on digital images (Gurrado and Stutzmann, 2013). Accompanied by new classificatory paradigms, Latin paleography was able to quickly embrace and benefit from the contributions of computer vision (Muzerelle, 2011).

In this presentation, we aim to explore how the concepts of “closeness” and “distance” apply to the Latin domain and how they have been combined, both in image analysis – where “local” and “global” analysis techniques were initially proposed in parallel –, and in results encompassing a wide range of questions and granular levels. These levels range from the white space between letters and words to the characterization of different allographs and the measurement of graphical distance (between two occurrences of the same symbol or between two allographs of the same letter), to defining the “rhythm” of a handwriting, and to dating, localizing, and classifying the handwriting of entire manuscripts.

Among recent research works, we will provide a more detailed view of writer identification (including within a homogeneous environment) as evidenced in the recent competitions (Christlein et al., 2019; Seuret et al., 2020), the current revival of letter-level approaches (e.g., Siglidis, 2023), and the impact of image analysis on the categories used in the history of writing.

16. Marja Vierros, University of Helsinki (FI), “Writer’s style in Greek Documentary Papyri: issues of orthography, linguistic style and authorship.”

This paper derives from work done within the project *Digital Grammar of Greek Documentary Papyri* (ERC Starting Grant agreement No 758481), including information on the linguistically annotated data and digital tools developed for producing and querying the data. One of our aims has been to identify writers’ and authors’ individual linguistic output, whether it comes through orthography, or through style and language use. The work of the modern editors of ancient papyrus texts in identifying different hands and giving emendations for the language has not been discarded when turning the textual data into linguistically annotated and queryable form.

In this way, we can use editorial as well as linguistic information and study the texts quantitatively with different queries, algorithms, word vector models etc. The paper will take part in the discussion on how the new methods advance research on writing related issues — language, genres, places of writing, authors and writers —with ancient data consisting of fragmentary short documentary texts.

17. Sandrine Vuilleumier, University of Basel (CH), “Hieratic Script in the Graeco-Roman Period: New Perspectives in the Wake of a Project Devoted to Funerary Texts.”

As in other disciplines, the study of hieratic has focused on the ductus, and diachronic palaeographies have been used to describe the development of this script and to date manuscripts. As part of the project entitled *Beyond the Text. New Funerary Compositions from the Graeco-Roman Period: Textualities and Archaeology in Thebes*, palaeography plays an important role in helping to date documents, for a period for which a genuine palaeography is still lacking and for a corpus of papyri that are most often not dated. In addition, studying a corpus that is constituted, homogeneous and located in a specific region offers some very interesting prospects. Without implementing a complex or automated computer analysis, which would go far beyond the scope of the current study, a broader methodological approach became necessary in order to limit the subjective dimension too often associated with palaeography and to respond as closely as possible to the specific needs of the research. The Digital Humanities were therefore called in to help analyse and contextualise data that are all too often considered disparate and rarely taken into consideration collectively.

The proposed contribution will begin by reviewing the state of the art concerning the Graeco-Roman period, highlighting the difficulties raised by the methods used up to now. Next, the methodology developed within the project to analyse hieratic script in funerary manuscripts will be described, and some examples will be presented. Finally, the limitations and scientific advantages that can be derived from such an analysis will be highlighted, as well as the applications they may offer for further studies and for palaeography in the broadest sense.